Cause No. 45235

INDIANA MICHIGAN POWER COMPANY

PRE-FILED VERIFIED DIRECT TESTIMONY

OF

ROBERT B. HEVERT

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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.
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).
Capital Structure	The capital structure is how a utility finances its overall investments and expenses by using various sources of funds. Capital Structure generally comprises of debt (short-term and long-term) and equity (common and preferred).
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 ROE 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 sometimes 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 dividend divided by the current market price.
Empirical Capital Asset Pricing Model ("ECAPM")	Empirical CAPM is a variant of the CAPM model. ECAPM adjusts for the CAPM's tendency to under-estimate returns for companies that have Beta coefficients less than one, and over-estimate returns for relatively high-Beta coefficient stocks

TERM	DESCRIPTION
Flotation Costs	Flotation costs are the costs associated with the sale of new issues of common stock. These costs include out-of-pocket expenditures for preparation, filing, underwriting and other issuance costs of common stock.
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 exports less 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.
Proxy Group	A group of publicly traded companies used as the "proxy" for the subject company (in this case, I&M). Proxy companies are sometimes referred to as "Comparable Companies".
Quantitative Easing	Quantitative Easing is a monetary policy in which the central bank purchases government securities or other securities from the market to increase the money supply and encourage lending and investment.
Return on Equity ("ROE")	The return required by investors to invest in equity securities. The terms "Return on Equity" and "Cost of Equity" are sometimes used interchangeably.
Risk-Free Rate	The rate of return on an asset with no default risk.
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 Inflation Protected Securities ("TIPS")	Treasury securities that are indexed to inflation. The principal value of TIPS increases with inflation and decrease with deflation, as measured by the Consumer Price Index.
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.
Vertically Integrated Utilities	Electric utilities that own and operate distribution, transmission and generation assets.

DIRECT TESTIMONY OF ROBERT B. HEVERT
ON BEHALF OF INDIANA MICHIGAN POWER COMPANY
CAUSE NO. _____ BEFORE THE
INDIANA UTILITY REGULATORY COMMISSION

I. INTRODUCTION AND OVERVIEW

Q. PLEASE STATE YOUR NAME AND AFFILIATION.

A. My name is Robert B. Hevert. I am a Partner at ScottMadden, Inc. ("ScottMadden"). My business address is 1900 West Park Drive, Suite 250, Westborough, Massachusetts 01581.

Q. ON WHOSE BEHALF ARE YOU SUBMITTING THIS TESTIMONY?

A. I am submitting this direct testimony ("Direct Testimony") before the Indiana Utility Regulatory Commission ("Commission") on behalf of Indiana Michigan Power Company ("I&M" or the "Company").

Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND.

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

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

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

transaction due diligence, and strategic matters. As an expert witness, I have provided testimony in more than 250 proceedings regarding various financial and regulatory matters before numerous state utility regulatory agencies, the Federal Energy Regulatory Commission ("FERC"), the Alberta Utilities Commission, and United States Federal Court. A summary of my professional and educational background, including a list of my testimony in prior proceedings, is included as Attachment RBH-1.

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

A. The purpose of my Direct Testimony is to present evidence and provide the Commission with a recommendation regarding the Company's return on equity ("ROE").[1] Additionally, I assess the reasonableness of the Company's proposed capital structure and Cost of Debt. The analyses and conclusions contained in my Direct Testimony are supported by the data presented in Attachment RBH-2 through RBH-11, which have been prepared by me or under my direction.

II. SUMMARY OF KEY CONCLUSIONS

Q. WHAT IS YOUR CONCLUSION REGARDING THE APPROPRIATE COST OF EQUITY FOR INDIANA MICHIGAN POWER COMPANY?

A. My analyses indicate that I&M's Cost of Equity currently is in the range of 10.00 percent to 10.75 percent. Based on the quantitative and qualitative analyses discussed throughout my Direct Testimony, it is my view that 10.50 percent is a reasonable estimate of I&M's Cost of Equity.

[1] Throughout my Direct Testimony, I sometimes use the "ROE" interchangeable with the term "Cost of Equity".

As to its proposed capital structure for the test year ending December 31, 2020, which (on the basis of investor-supplied capital) includes 46.80 percent common equity and 53.20 percent long-term debt, I conclude that the Company's proposal is consistent with the capital structures that have been in place over several fiscal quarters at comparable operating utility companies. Given the consistency of its proposal with similarly situated utility companies, I conclude that the Company's proposed capital structure is reasonable and appropriate. Regarding the cost of debt, I also understand that the Company's projected weighted average cost of long-term debt at the end of the test year is 4.54 percent, which I believe is reasonable and appropriate.

Q. PLEASE BRIEFLY SUMMARIZE YOUR ANALYTICAL APPROACH AND RECOMMENDATION REGARDING THE COMPANY'S COST OF EQUITY.

A. Because all financial models are subject to various assumptions and constraints, equity analysts and investors tend to use multiple methods to develop their return requirements. I therefore relied on several widely accepted methods to develop my ROE recommendation: (1) the Constant Growth Discounted Cash Flow ("DCF") model; (2) the traditional and empirical forms of the Capital Asset Pricing Model ("CAPM"); and (3) the Bond Yield Plus Risk Premium approach. Those analyses indicate the Company's Cost of Equity currently to be in the range of 10.00 percent to 10.75 percent. That range is corroborated by the Expected Earnings approach which, as I discuss later in my Direct Testimony, is supported by recent FERC Orders.

My recommendation takes into consideration the risk factors associated with: (1) the Company's generation portfolio and related environmental regulations; (2) customer concentration; and (3) the Company's planned capital expenditures and the effect, if any,

of certain regulatory mechanisms. In addition to the methods noted above, I calculated the costs of issuing common stock (that is, "flotation" costs), and considered evolving capital market and business conditions, including changes in Federal Reserve monetary policy and increases in current and projected government bond yields. Although those factors are very relevant to investors, their effect on the Company's Cost of Equity cannot be directly quantified. Therefore, although I did not make explicit adjustments to my ROE estimates, I considered those factors in determining where the Company's Cost of Equity falls within the range of analytical results. In light of those analyses, I believe that my recommended range is reasonable and appropriate.

My analyses recognize that estimating the Cost of Equity is an empirical, but not entirely mathematical exercise; it relies on both quantitative and qualitative data and analyses, all of which are used to inform the judgment that inevitably must be applied. No single model is more reliable than all others under all market conditions, and all require the use of reasoned judgment in their application, and in interpreting their results. Therefore, the results of each ROE model must be assessed in the context of current and expected capital market conditions, and relative to other appropriate benchmarks.

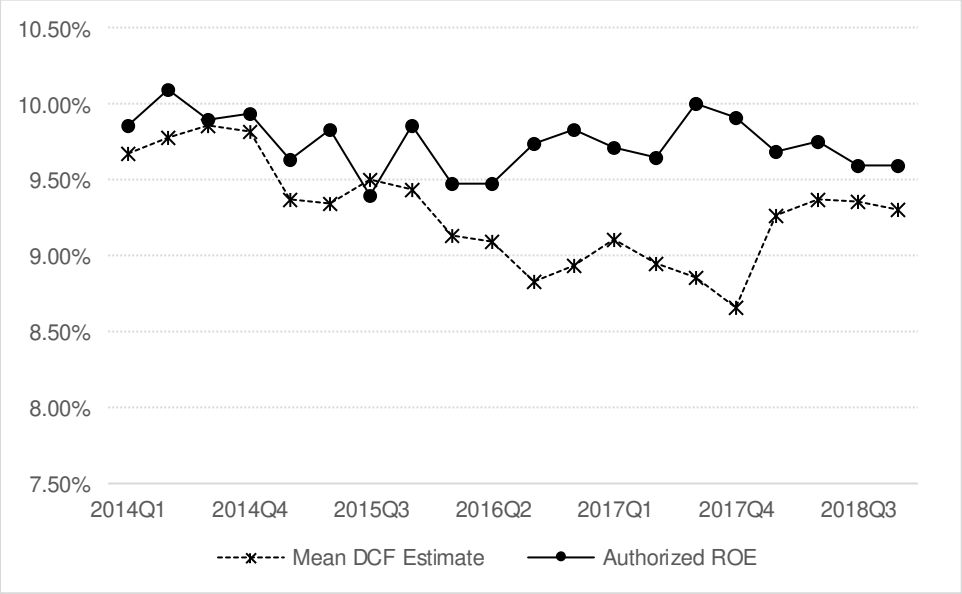
In developing my recommendation, I recognized that the low and high ends of the range of results (set by the low end of the range of Constant Growth DCF model results, and the high end of the range of CAPM results, respectively) are not likely to be reasonable estimates of the Company's Cost of Equity. In large measure, that is the case because those results are far removed from the returns recently authorized in other jurisdictions and, in the case of DCF-based methods, fail to adequately reflect evolving capital market conditions. Because Risk Premium-based methods directly reflect

measures of capital market risk, they are more likely than other approaches (such as the Constant Growth DCF method) to provide reliable estimates of the Cost of Equity during periods of market instability.

Q. WHAT IS THE BASIS OF YOUR VIEW THAT THE CONSTANT GROWTH DCF METHOD RECENTLY HAS FAILED TO PROVIDE RELIABLE ROE ESTIMATES?

A. Since 2014, the model has produced results (*i.e.*, mean results) consistently and meaningfully below authorized returns (*see* Chart 1, below). That data suggests state regulatory commissions have recognized the model's results are not necessarily reliable estimates of the Cost of Equity, and that other methods should be given meaningful weight in determining the ROE.

Chart 1: Mean DCF Results vs. Authorized ROE Over Time[2]



[2] DCF results based on quarterly average stock prices, Earnings Per Share growth rates from Value Line, Zacks, and First Call; assumes my proxy group. Authorized ROEs are quarterly averages for vertically integrated and transmission and distribution electric utilities; source: S&P Global Market Intelligence. Please note that 2016 Q2 and 2017 Q3 included only one ROE decision.

For example, in Baltimore Gas and Electric Company's 2016 rate case, the Maryland Public Service Commission discussed the importance of considering multiple analytical methods, given the complexity of determining the investor-required ROE:

> The ROE witnesses used various analyses to estimate the appropriate return on equity […] including the DCF model, the IRR/DCF, the traditional CAPM, the ECAPM, and risk premium methodologies. Although the witnesses argued strongly over the correctness of their competing analyses, we are not willing to rule that there can be only one correct method for calculating an ROE. Neither will we eliminate any particular methodology as unworthy of basing a decision. The subject is far too complex to reduce to a single mathematical formula. That conclusion is made apparent, in practice, by the fact that the expert witnesses used discretion to eliminate outlier returns that they testified were too high or too low to be considered reasonable, even when using their own preferred methodologies.[3]

Similarly, FERC recently addressed its longstanding focus on the DCF method. In its November 15, 2018 *Order Directing Briefs*, FERC found that "in light of current investor behavior and capital market conditions, relying on the DCF methodology alone will not produce a just and reasonable ROE."[4] In its October 16, 2018 *Order Directing Briefs*, FERC found that although it "previously relied solely on the DCF model to produce the evidentiary zone of reasonableness…", it is "…concerned that relying on that methodology alone will not produce just and reasonable results."[5] As FERC explained, it is important to understand "how investors analyze and compare their investment opportunities."[6] FERC also explained that, although certain investors may give some weight to the DCF approach, other investors "place greater weight on one or more of the

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[3] *In the matter of the application of Baltimore Gas and Electric Company for adjustments to its electric and gas base rates, Public Service Commission of Maryland*, Case No. 9406, Order No. 87591, at 153. Citations omitted.

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

[5] Docket No. EL11-66-001, *et al*., *Order Directing Briefs* 165 FERC ¶ 61,030 (October 16, 2018) at para. 30.

[6] *Id*., at para. 33.

other methods…"[7] Those methods include the CAPM and the Risk Premium method, which I have applied in this proceeding.

Since FERC issued its *Order Directing Briefs*, the South Carolina Public Service Commission came to a similar finding, explaining that "it is appropriate and reasonable to consider a range of estimates under various methodologies in order to more accurately estimate [South Carolina Electric & Gas's] cost of equity", and relying on a single analytical method is "inconsistent with decisions reached by regulatory commissions over the past several years and departs from the normal practice of estimating the Cost of Equity for utilities."[8]

Q. HAVE OTHER STATE REGULATORY COMMISSIONS DECLINED TO RELY ON THE DCF MODEL RESULTS?

A. Yes. For example, in its July 2017 *Order Accepting Stipulation* in which it authorized a 9.90 percent ROE for Duke Energy Carolinas, the North Carolina Utilities Commission noted it "carefully evaluated the DCF analysis recommendations" of the ROE witnesses (which ranged from 8.45 percent to 8.80 percent) and determined that "all of these DCF analyses in the current market produce unrealistically low results."[9]

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

8 Public Service Commission of South Carolina, Docket Nos. 2017-207-E, 2017-305-E, and 2017-370-E, Order No. 2018-804, Order Addressing South Carolina Electric & Gas Nuclear Dockets, at 88-89. [clarification added]

9 State of North Carolina Utilities Commission, Docket No. E-7, Sub 1146, *In the Matter of Application of Duke Energy Carolinas, LLC, for Adjustment of Rates and Charges Applicable to Electric Utility Service in North Carolina*, Order Accepting Stipulation, Deciding Contested Issues, and Requiring Revenue Reduction, July 25, 2017.

Q. ARE THERE ASPECTS OF THE CONSTANT GROWTH DCF MODEL THAT MAY EXPLAIN WHY REGULATORY COMMISSIONS CURRENTLY DO NOT RELY PRINCIPALLY ON IT WHEN DETERMINING THE COST OF EQUITY?

A. Yes. Quite simply, the model's underlying structure and assumptions are not compatible with the recent capital market and economic environment. That can most easily be seen by recognizing that the model's fundamental structure requires the assumption of constancy in perpetuity. It assumes there will be no change in growth rates, dividend payout ratios, Price/Earnings ("P/E") ratios, Market/Book ratios, or in the economic and market conditions that support those variables. Equally important, the model assumes the Cost of Equity estimated today will remain unchanged, also in perpetuity. That is, the model requires that the Cost of Equity estimate produced today will be the same forward-looking return equity investors will require every day in the future, in perpetuity.

A concern, of course, is that federal monetary policy has had a significant, intentional effect on capital markets, dampening both interest rates and volatility. At issue is whether we reasonably can assume the market conditions created by those policies will stay in place over the long run. For example, we know that the Federal Reserve is continuing to "normalize" its monetary policy such that the conditions supporting current ROE estimates will not persist in the long-run.[10] Regardless of its eventual disposition, neither the Federal Reserve's unconventional monetary policy initiatives, nor the capital market conditions they supported, will remain in place in

[10] I understand that the Federal Reserve recently announced it intends to slow the reduction of its holdings of Treasury securities beginning in May 2019 and conclude the reduction of its aggregate securities holdings in September 2019. *See Federal Reserve Press Release,* Balance Sheet Normalization Principles and Plans, March 20, 2019.

perpetuity, as the Constant Growth DCF model requires. On that basis alone, we should be cautious about the weight given to the DCF method.

The model also assumes investors use its fundamental structure to find the "intrinsic" value of stock, that is, the price they are willing to pay.[11] In practice, investors also consider relative valuation multiples – Price/Earnings, Market/Book, Enterprise Value/EBITDA[12] – in their buying and selling decisions. They do so because no single financial model produces the most accurate measure of fundamental value, or the most reliable estimate of the Cost of Equity, at all times.

Q. IS IT YOUR VIEW THAT THE DCF MODEL SHOULD BE GIVEN NO WEIGHT IN DETERMINING THE COMPANY'S COST OF EQUITY?

A. No, it is not. It is my view, however, that we should carefully consider the range of results the model produces in arriving at ROE recommendations. As discussed later in my Direct Testimony, doing so fully supports my ROE range and recommendation.

Q. PLEASE SUMMARIZE THE RESULTS OF THE ANALYSES, AND HOW THEY CONTRIBUTED TO YOUR ROE RECOMMENDATION.

A. The range of results produced by the three primary approaches noted above are summarized in Tables 1a and 1b, below.

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[11] *See* Equations [4] and [5], in Appendix A below.

[12] Earnings Before Interest, Taxes, Depreciation, and Amortization.

Table 1a: Summary of Discounted Cash Flow Model Results[13]

	Mean	Mean High
30-Day Average	8.92%	9.97%
90-Day Average	9.03%	10.08%
180-Day Average	9.12%	10.17%

Table 1b: Summary of Risk Premium Results[14]

CAPM	Bloomberg Derived Market Risk Premium	Value Line Derived Market Risk Premium
Average Bloomberg Beta Coefficient		
Current 30-Year Treasury (3.03%)	8.14%	9.64%
Near Term Projected 30-Year Treasury (3.25%)	8.36%	9.86%
Average Value Line Beta Coefficient		
Current 30-Year Treasury (3.03%)	9.33%	11.18%
Near Term Projected 30-Year Treasury (3.25%)	9.55%	11.40%
ECAPM	**Bloomberg Derived Market Risk Premium**	**Value Line Derived Market Risk Premium**
Average Bloomberg Beta Coefficient		
Current 30-Year Treasury (3.03%)	9.51%	11.42%
Near Term Projected 30-Year Treasury (3.25%)	9.74%	11.64%
Average Value Line Beta Coefficient		
Current 30-Year Treasury (3.03%)	10.41%	12.57%
Near Term Projected 30-Year Treasury (3.25%)	10.63%	12.79%
Bond Yield Plus Risk Premium Approach		
Current 30-Year Treasury (3.03%)	9.93%	
Near Term Projected 30-Year Treasury (3.25%)	9.96%	
Long-Term Projected 30-Year Treasury (4.05%)	10.17%	

[13] *See* also Attachment RBH-2, which includes the Mean Low estimates.

[14] *See* Attachments RBH-5 and RBH-6.

Based on those estimates, it is my view that a reasonable range of estimates is from 10.00 percent to 10.75 percent, and within that range, an ROE of 10.50 percent is reasonable and appropriate. That range is supported by the Expected Earnings approach, which results in an average ROE estimate of 10.26 percent and a median ROE estimate of 10.04 percent.

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

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

- Section III – Discusses the effect of the current capital market environment on the Cost of Equity;
- Section IV – Discusses the Cost of Equity analyses;
- Section V – Discusses the Company's business risks;
- Section VI – Addresses the reasonableness of the Company's Test Year capital structure and Cost of Debt;
- Section VII – Summarizes my conclusions and recommendations; and
- Appendix A – Provides the details regarding my analytical methodologies.

III. CAPITAL MARKET ENVIRONMENT

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

A. Yes. As discussed in Section IV and Appendix A, the models used to estimate the Cost of Equity are meant to reflect, and therefore are influenced by, current and expected capital market conditions. Therefore, it is important to assess the reasonableness of any financial model's results in the context of observable market data. To the extent a given model's assumptions are misaligned with such data, or its results inconsistent with basic

financial principles, it is appropriate to consider whether other methods likely provide more meaningful and reliable results.

Q. DO YOU HAVE ANY GENERAL OBSERVATIONS REGARDING THE RELATIONSHIP BETWEEN FEDERAL RESERVE MONETARY POLICY, CAPITAL MARKET CONDITIONS, AND THE COMPANY'S COST OF EQUITY?

A. Yes, I do. Although the Federal Reserve completed its Quantitative Easing initiative in October 2014, it was not until December 2015 that it raised the Federal Funds rate and began the process of monetary policy normalization.[15] A significant analytical issue is how investors likely will react as that process continues, and eventually is completed. For example, increasing interest rates may be seen as an indication of expanding macroeconomic growth, in which case we reasonably could expect the growth rate component of the Discounted Cash Flow model to increase. At the same time, sectors that historically have included dividend-paying companies have lost value, as increasing interest rates provide investors with alternative sources of current income. A more reasoned approach is to understand the relationships among capital market and macroeconomic variables, and to consider how those factors may affect different models and their results.

Q. DOES YOUR RECOMMENDATION CONSIDER THE INTEREST RATE ENVIRONMENT?

A. Yes, it does. From an analytical perspective, it is important that the inputs and assumptions used to arrive at an ROE recommendation, including assessments of capital

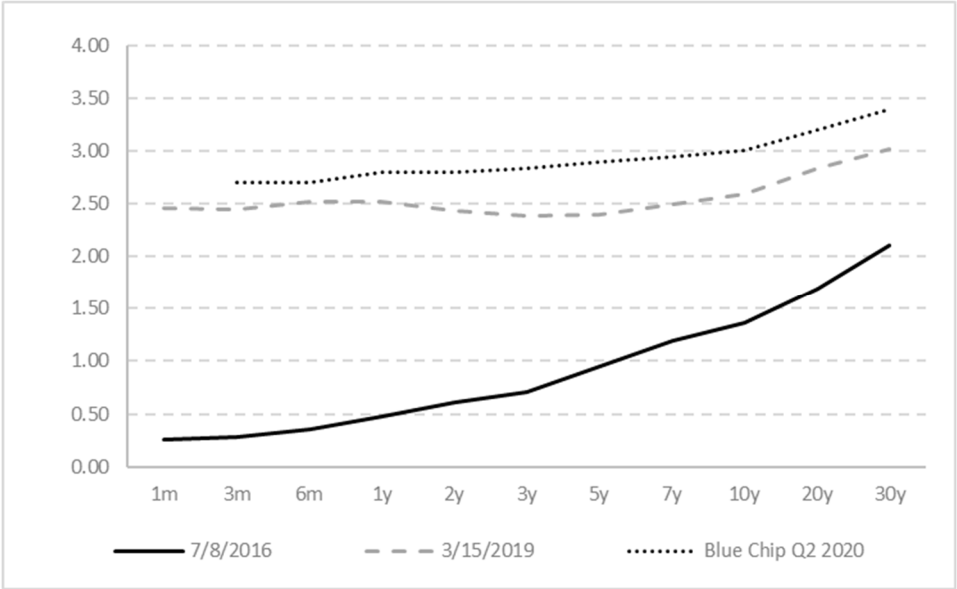
[15] *See* Federal Reserve Press Release, December 16, 2015.

market conditions, are consistent with the recommendation itself. Although all analyses require an element of judgment, the application of that judgment must be made in the context of the quantitative and qualitative information available to the analyst, and the capital market environment in which the analyses were undertaken. Because the Cost of Equity is forward-looking, the salient issue is whether investors see the likelihood of increased interest rates during the period in which the rates set in this proceeding will be in effect.

Although the Federal Reserve's market intervention policies kept interest rates historically low, since July 8, 2016 (when the 30-year Treasury yield fell to its secular low of 2.11 percent) rates have risen. As the Federal Reserve increased the Federal Funds target rate eight times between December 2015 and December 2018 to 2.25 percent - 2.50 percent, short-term and long-term interest rates also increased (*see* Chart 2 below).[16]

[16] Federal Reserve Board Schedule H.15. 1-year, 10-year, and 30-year Treasury yields increased by 204 basis points, 122 basis point, and 91 basis points, respectively, July 8, 2016 to March 15, 2019.

Chart 2: Treasury Yield Curve: 7/8/2016, 3/15/2019 and Projected Q2 2020[17]



In a press conference following the December 2018 Federal Open Market Committee meeting, Chairman Powell discussed the recent increases in the Federal Funds rate and the expectation for some further gradual rate increases, noting a strengthening economy, a strong labor market and rising wages.[18]

Aside from increases in the Federal Funds rate, in October 2017, the Federal Reserve initiated its balance sheet normalization program that includes gradual reductions to its security holdings by decreasing its reinvestment activities.[19] In the January 2019

[17] Sources: Federal Reserve Board Schedule H.15.; Blue Chip Financial Forecasts, Vol. 38, No. 3, at 2 (March 1, 2019). 3-year, 7-year and 20-year projected Treasury yields interpolated.

[18] Transcript of Chairman Powell's Press Conference, December 19, 2018.

[19] *See*: https://www.federalreserve.gov/monetarypolicy/policy-normalization.htm and Federal Open Market Committee ("FOMC") Press Release, June 14, 2017. In its January 30, 2019 press release the FOMC noted that although it continues to view changes in the federal funds target rate as the "primary means of adjusting monetary policy", it also would adjust the details of its balance sheet normalization based on economic and financial developments.

meeting, the Federal Reserve decided to continue with the balance sheet wind-down.[20] At the same time, the supply of marketable U.S. Treasury securities has increased by approximately $1.14 trillion.[21] The growing supply of Treasury securities from both the Federal Reserve and the U.S. Treasury puts upward pressure on Treasury rates.

Q. DOES MARKET-BASED DATA INDICATE INVESTORS SEE A PROBABILITY OF INCREASING INTEREST RATES?

A. Yes. Consensus near-term forecasts of the 30-year Treasury yield reported by *Blue Chip Financial Forecast* indicate the market expects long-term rates to reach 3.40 percent by the second quarter of 2020.[22] Importantly, the potential for rising rates represents risk for utility investors.

Q. HAS MARKET VOLATILITY CHANGED WITH THE FEDERAL RESERVE'S MOVE TOWARD MONETARY POLICY NORMALIZATION?

A. Yes, it has. A visible and widely reported measure of expected volatility is the Cboe Options Exchange ("Cboe") Volatility Index, often referred to as the VIX. As Cboe explains, the VIX "is a calculation designed to produce a measure of constant, 30-day expected volatility of the U.S. stock market, derived from real-time, mid-quote prices of S&P 500® Index call and put options."[23] Simply, the VIX is a market-based measure of expected volatility. Because volatility is a measure of risk, increases in the VIX, or in its volatility, are a broad indicator of expected increases in market risk.

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[20] *Federal Reserve Press Release* dated January 30, 2019. The FOMC noted that although it continues to view changes in the federal funds target rate as the "primary means of adjusting monetary policy", it also would adjust the details of its balance sheet normalization based on economic and financial developments.

[21] Source: U.S. Treasury, Monthly Statement of the Public Debt. *See* https://www.treasurydirect.gov/govt/reports/pd/mspd/mspd.htm. U.S. marketable securities increased from $14.48 trillion to $15.62 trillion between December 31, 2017 and December 31, 2018.

[22] Blue Chip Financial Forecast, Vol. 38, No. 3, March 1, 2019, at 2.

[23] Source: http://www.cboe.com/vix

Although the VIX is not expressed as a percentage, it should be understood as such. That is, if the VIX stood at 15.00, it would be interpreted as an expected standard deviation in annual market returns of 15.00 percent over the coming 30 days. Since 2000, the VIX has averaged about 19.67, which is highly consistent with the long-term standard deviation on annual market returns (19.80 percent, as reported by Duff & Phelps[24]).

As Chart 3 (below) demonstrates, in 2017 market volatility was well below its long-term average, and moved within a somewhat narrow range; the VIX averaged about 11.09, with a standard deviation of 1.36. Throughout 2018 and into 2019, the VIX average increased to 16.68 with a standard deviation of 4.77. That is, from 2017 to 2019 both the level and the volatility of market volatility increased.

[24] Duff & Phelps, 2019 SBBI Yearbook, at 6-17.

Chart 3: VIX Since January 2017[25]

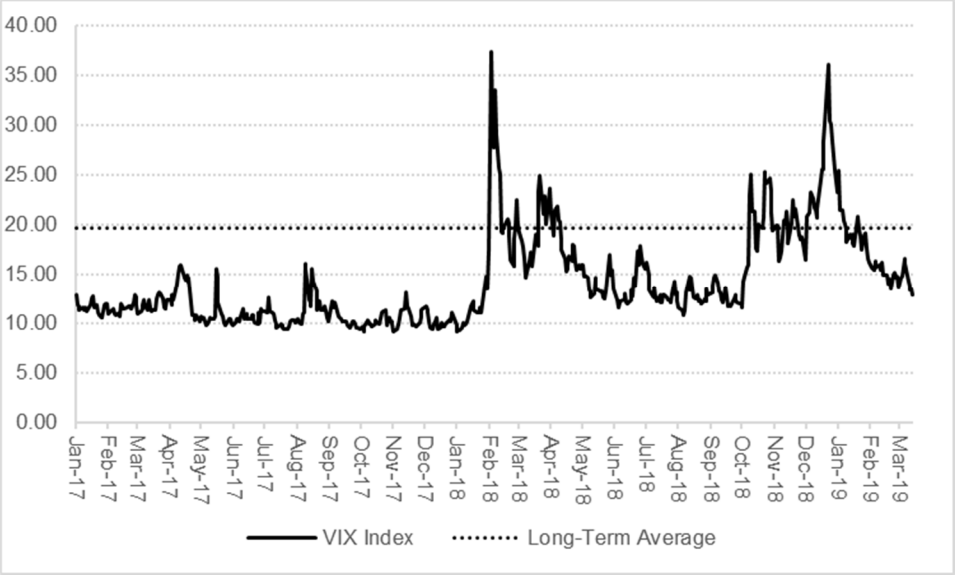

Table 2 (below) further demonstrates the increase in market uncertainty from 2017 to 2019. As that table notes, the standard deviation (that is, the volatility of volatility) in 2018-2019 is about 3.50 times higher than its 2017 level (1.36)

Table 2: VIX Levels and Volatility[26]

LONG-TERM AVERAGE	19.67
2018-2019 Average	16.68
2018-2019 Maximum	37.32
2018-2019 Minimum	9.15
2018-2019 Standard Deviation	4.77
2017 Average	11.09
2017 Maximum	16.04
2017 Minimum	9.14
2017 Standard Deviation	1.36

The increase in volatility is not surprising as market participants reassess investment alternatives in light of the Federal Reserve's shift toward monetary policy normalization.

[25] Source: Bloomberg Professional.
[26] Source: Bloomberg Professional.

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

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

> The implied volatility term structure observed in SPX options markets is analogous to the term structure of interest rates observed in fixed income markets. Similar to the calculation of forward rates of interest, it is possible to observe the option market's expectation of future market volatility through use of the SPX implied volatility term structure.[27]

Cboe's term structure data is upward sloping, indicating market expectations of increasing volatility. The expected VIX value in June 2020 is about 17.76, suggesting investors see a reversion to long-term average volatility over the coming months.[28] That increase in expected volatility makes intuitive sense, given the Federal Reserve's movement toward normalizing monetary policy. That policy change includes reducing the liquidity provided to the financial markets during the Federal Reserve's Quantitative Easing initiatives. Because that liquidity had the effect of dampening volatility as it was added to the markets, it stands to reason that volatility will increase as liquidity is diminished.

Q. DOES THE FEDERAL RESERVE'S TIGHTENING OF MONETARY POLICY HAVE OTHER IMPLICATIONS FOR THE ASSESSMENT OF CAPITAL MARKETS?

A. Yes. Just as the Federal Reserve's monetary policy in the post-financial crisis era was aimed at lowering interest rates and market volatility, its "normalization" will tend to

[27] Source: http://www.cboe.com/trading-tools/strategy-planning-tools/term-structure-data.

[28] Source: http://www.cboe.com/trading-tools/strategy-planning-tools/term-structure-data, accessed March 15, 2019.

increase both. Because it is at least a directional indicator of investors' return requirements, the elevated uncertainty supports my recommended range.

It also is important to recognize that the Federal Reserve's reduction in monetary stimulus is related to expectations of improved economic and financial conditions, and sustained growth in the overall economy. When increasing the Federal Funds rate on December 19, 2018, the Federal Open Market Committee noted the labor market continued to strengthen and that household spending was rising at a strong rate while business fixed investment had moderated from its rapid pace earlier in the year.[29] Although the Federal Reserve did not increase the Federal Funds rate in its January 2019 meeting, the Federal Open Market Committee observed the labor market continued to strengthen, and economic activity continued to rise at a solid rate.[30] At its March 2019 meeting, the FOMC determined it would hold the Federal Funds target rate constant, looking to current and expected economic conditions to determine future rate adjustments.[31]

Q. WHAT CONCLUSIONS DO YOU DRAW FROM YOUR ANALYSES OF THE CURRENT CAPITAL MARKET ENVIRONMENT, AND HOW DO THOSE CONCLUSIONS AFFECT YOUR ROE RECOMMENDATION?

A. From an analytical perspective, it is important that the inputs and assumptions used to arrive at an ROE determination, including assessments of capital market conditions, are consistent with the conclusion itself. Although all analyses require an element of judgment, the application of that judgment must be made in the context of the

[29] *Federal Reserve Press Release* dated December 19, 2018.
[30] *Federal Reserve Press Release* dated January 30, 2019.
[31] *Federal Reserve Press Release* dated March 20, 2019.

quantitative and qualitative information available to the analyst and the capital market environment in which the analyses were undertaken. Because the application of financial models and interpretation of their results often is the subject of differences among analysts in regulatory proceedings, it is important to review and consider a variety of data points. That approach enables us to put in context both quantitative analyses and the associated recommendations. Further, because all models produce ranges of results, it is important to consider the type of information discussed above to determine where the Company's ROE falls within those ranges. As discussed throughout my testimony, doing so supports my recommended range of 10.00 percent to 10.75 percent.

IV. COST OF EQUITY ANALYSIS

A. Regulatory Guidelines and Financial Considerations

Q. BEFORE ADDRESSING THE SPECIFIC ASPECTS OF THIS PROCEEDING, PLEASE PROVIDE AN OVERVIEW OF THE ISSUES SURROUNDING THE COST OF EQUITY IN REGULATORY PROCEEDINGS, GENERALLY.

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

The Cost of Capital (including the costs of both debt and equity) is based on the economic principle of "opportunity costs." Investing in any asset, whether debt or equity

securities, implies a forgone opportunity to invest in alternative assets. For any investment to be sensible, its expected return must be at least equal to the return expected on alternative, comparable risk investment opportunities. Because investments with like risks should offer similar returns, the opportunity cost of an investment should equal the return available on an investment of comparable risk. In that important respect, the returns required by debt and equity investors represent a cost to the Company.

Although both debt and equity have required costs, they differ in certain fundamental ways. Most noticeably, the Cost of Debt is contractually defined and can be directly observed as the interest rate or yield on debt securities.[32] The Cost of Equity, on the other hand, is neither directly observable nor a contractual obligation. Rather, equity investors have a claim on cash flows only after debt holders are paid; the uncertainty (or risk) associated with those residual cash flows determines the Cost of Equity. Because equity investors bear that additional, "residual risk", they require higher returns than debt holders. In that basic sense, equity and debt investors differ: they invest in different securities, face different risks, and require different returns.

Whereas the Cost of Debt can be directly observed, the Cost of Equity must be estimated based on market data and various financial models. As discussed throughout my Direct Testimony, each of those models is subject to specific assumptions, which may be more, or less, applicable under differing market conditions. In addition, because the Cost of Equity is premised on opportunity costs, the models typically are applied to a group of "comparable" or "proxy" companies. The choice of models (including their inputs), the selection of proxy companies, and the interpretation of the model results all

[32] The observed interest rate may be adjusted to reflect issuance costs.

require the application of reasoned judgment. That judgment should consider data and information that is not necessarily included in the models themselves. In the end, the estimated Cost of Equity should reflect the return that investors require in light of the subject company's risks, and the returns available on comparable investments.

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

A. The Court established the guiding principles for establishing a fair return for capital in two cases: (1) *Bluefield Water Works and Improvement Co. v. Public Service Comm'n.* ("*Bluefield*");[33] and (2) *Federal Power Comm'n v. Hope Natural Gas Co.* ("*Hope*").[34] In *Bluefield*, the Court stated:

> A public utility is entitled to such rates as will permit it to earn a return on the value of the property which it employs for the convenience of the public equal to that generally being made at the same time and in the same general part of the country on investments in other business undertakings which are attended by corresponding, risks and uncertainties; but it has no constitutional right to profits such as are realized or anticipated in highly profitable enterprises or speculative ventures. The return should be reasonably sufficient to assure confidence in the financial soundness of the utility and should be adequate, under efficient and economical management, to maintain and support its credit and enable it to raise the money necessary for the proper discharge of its public duties.[35]

The Court therefore recognized that: (1) a regulated company cannot remain financially sound unless the return it is allowed to earn on its invested capital is at least equal to the cost of capital (the principle relating to the demand for capital); and (2) a regulated

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[33] *Bluefield Waterworks & Improvement Co., v. Public Service Commission of West Virginia*, 262 U.S. 679, 692-93 (1923).

[34] *Federal Power Commission v. Hope Natural Gas Co.,* 320 U.S. 591, 603 (1944).

[35] *Bluefield Waterworks & Improvement Co., v. Public Service Commission of West Virginia,* 262 U.S. 679, 692-93 (1923).

company will not be able to attract capital if it does not offer investors an opportunity to earn a return on their investment equal to the return they expect to earn on other investments of the same risk (the principle relating to the supply of capital).

Q. DOES INDIANA PRECEDENT PROVIDE SIMILAR GUIDANCE?

A. Yes. In a recent order, the Commission stated (as it has in previous rate orders), that it has used the following standards and criteria to determine a fair rate of return on a petitioner's investment in its utility plant:

> (1) Return comparable to return on investments in other enterprises having corresponding risks;
> (2) Return sufficient to ensure confidence in the financial integrity of the petitioner;
> (3) Return sufficient to maintain and support the petitioner's credit [rating]; and
> (4) Return sufficient to attract capital as reasonably required by the petitioner in its utility business.[36]

Citing the State Supreme Court, the Commission noted that:

> The ratemaking process involves a balancing of all these factors and probably others; a balancing of the owner's or investor's interest with the consumer's interest. On the one side, the rates may not be so low as to confiscate the investor's interest or property; on the other side the rates may not be so high as to injure the consumer by charging an exorbitant price for service and at the same time giving the utility owner an unreasonable or excessive profit.[37]

The Commission concluded that:

> …the results of any return computation may be tempered by the Commission's duty to balance the respective interests involved in ratemaking. The end result of the Commission's Orders must be measured as much by the success with which they protect the broad

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[36] Indiana Utility Regulatory Commission, Cause No. 44075, *Petition of Indiana Michigan Power Company, an Indiana Corporation, for Authority to Increase its Rates and Charges for Electric Utility Service, For Approval of: Revised Depreciation Rates; Accounting Relief; Inclusion in Basic Rates and Charges of the Costs of Qualified Pollution Control Property; Modifications to Rate Adjustment Mechanisms; and Major Storm Reserves; and for Approval of New Schedules of Rates, Rules and Regulations*, Approved February 13, 2013, at 47.

[37] *Id*., at 47-48.

> public interest entrusted to our protection as by the effectiveness with which they allow utilities to maintain credit and attract capital.[38]

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

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

A. A return that is adequate to attract capital at reasonable terms enables the utility to provide safe, reliable service while maintaining its financial integrity. As discussed above, and in keeping with the *Hope* and *Bluefield* standards, that return should be commensurate with the returns expected elsewhere in the market for investments of equivalent risk. The consequence of the Commission's order in this case, therefore, should be to provide I&M with the opportunity to earn a return on equity that is: (1) adequate to attract capital at reasonable terms; (2) sufficient to ensure its financial integrity; and (3) commensurate with returns on investments in enterprises having corresponding risks.

To the extent the Company is provided a reasonable opportunity to earn its market-based Cost of Equity, neither customers nor shareholders should be disadvantaged. In fact, a return that is adequate to attract capital at reasonable terms enables I&M to provide safe, reliable electric utility service while maintaining its financial integrity.

[38] *Id*., at 48.

Q. HOW IS THE COST OF EQUITY ESTIMATED IN REGULATORY PROCEEDINGS?

A. As noted earlier (and as described in more detail in Appendix A), the Cost of Equity is estimated using various financial models. By their very nature, those models produce a range of results from which the ROE must be determined. That determination, which should be based on a comprehensive review of relevant data and information, does not necessarily lend itself to a strict mathematical solution. The key consideration in determining the ROE is to ensure that the overall analysis reasonably reflects investors' view of the financial markets in general and the subject company (in the context of the proxy companies), in particular.

The use of multiple models makes intuitive sense when we consider that market prices are set by the buying and selling behavior of multiple investors, whose circumstances, objectives, and constraints vary over time and across market conditions. We cannot assume a single method is the best measure of the factors motivating those decisions for all investors, at all times. Intuition suggests it is more appropriate to use as many methods as we reasonably can, and to reflect the many factors motivating investment decisions as best we can. In this instance, intuition, financial theory,[39] and

[39] As Professor Eugene Brigham explains: "Whereas debt and preferred stocks are contractual obligations which have easily determined costs, it is not at all easy to estimate [the Cost of Equity]. However, three methods can be used: (1) the Capital Asset Pricing Model (CAPM), (2) the discounted cash flow (DCF) model, and (3) the bond-yield-plus-risk-premium approach. These methods should not be regarded as mutually exclusive – no one dominates the others, and all are subject to error when used in practice. Therefore, when faced with the task of estimating a company's cost of equity, we generally use all three methods and then choose among them on the basis of our confidence in the data used for each in the specific case at hand." Eugene F. Brigham, Louis C. Gapenski, Financial Management, Theory and Practice, 7th ed., The Dryden Press, 1994, at 341.

financial practice reach a common conclusion: we should apply and reasonably consider multiple methods when estimating the Cost of Equity.

Lastly, practitioners and academics recognize that financial models simply are approximations of investor behavior, not precise quantifications of it. They appreciate that models are tools to be used in the ROE determination process, and that strict adherence to any single approach, or to the specific results of any single approach, can lead to flawed or misleading conclusions. That recognition is consistent with the *Hope* and *Bluefield* principle that it is the analytical result, as opposed to the methodology employed, that is controlling in arriving at just and reasonable rates.[40] A reasonable ROE estimate therefore appropriately considers alternative methodologies, and the reasonableness of their individual and collective results in the context of observable, relevant market information.

B. Proxy Group Selection

Q. AS A PRELIMINARY MATTER, WHY IS IT NECESSARY TO SELECT A GROUP OF PROXY COMPANIES TO DETERMINE THE COST OF EQUITY FOR I&M?

A. First, it is important to bear in mind that the Cost of Equity for a given enterprise depends on the risks attendant to the business in which it is engaged. According to financial theory, the value of a given company is equal to the aggregate market value of its constituent business units. The value of the individual business units reflects the risks and opportunities inherent in the business sectors in which those units operate. In this

[40] That finding also is consistent with the Commission's finding in Cause No. 44075, which noted the importance of the end result in balancing the interests of customers and investors.

proceeding, we are focused on estimating the Cost of Equity for the Indiana operations of I&M, whose parent is American Electric Power Company, Inc. ("AEP"). Because the ROE is a market-based concept and I&M is not a separate entity with its own stock price, it is necessary to establish a group of companies that are both publicly traded and comparable to I&M in certain fundamental respects to serve as its "proxy" in the ROE estimation process.

Even if I&M were a publicly traded entity, short-term events could bias its market value during a given period. A significant benefit of using a proxy group is that it serves to moderate the effects of anomalous, temporary events associated with any one company.

Q. DOES THE SELECTION OF A PROXY GROUP SUGGEST THAT ANALYTICAL RESULTS WILL BE TIGHTLY CLUSTERED AROUND AVERAGE (*I.E.*, MEAN) RESULTS?

A. No. For example, the Constant Growth DCF approach defines the Cost of Equity as the sum of the expected dividend yield and projected long-term growth. Despite the care taken to ensure risk comparability, market expectations with respect to future risks and growth opportunities will vary from company to company. Even within a group of similarly situated companies, it is common for analytical results to reflect a seemingly wide range. Consequently, at issue is how to estimate the Cost of Equity from within that range. Such a determination necessarily must consider a wide range of both quantitative and qualitative information.

Q. PLEASE PROVIDE A SUMMARY PROFILE OF I&M.

A. I&M, which is a wholly owned subsidiary of AEP, provides electric service to approximately 596,000 retail customers in northern and eastern Indiana and southwestern Michigan.[41] The Company's current long-term issuer credit rating from Standard & Poor's ("S&P") is A- (outlook: Stable), A3 (outlook: Stable) from Moody's Investor Service ("Moody's"), and BBB (outlook: Stable) from FitchRatings ("Fitch").[42]

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

A. A proxy group should include companies with risk profiles comparable to the subject company. In selecting the proxy group, my objective was to balance the dual objectives of selecting companies that are highly representative of the risks and prospects faced by the Company, while ensuring a sufficient number of companies in the group. Based on those two considerations, I began with the universe of companies that Value Line classifies as Electric Utilities, and applied the following screening criteria:

- I excluded companies that do not consistently pay quarterly cash dividends;
- I excluded companies that were not covered by at least two utility industry equity analysts;
- I excluded companies that do not have investment grade senior unsecured bond and/or corporate credit ratings from S&P;
- I excluded companies that were not vertically-integrated, *i.e.* utilities that own and operate regulated generation, transmission, and distribution assets;

[41] American Electric Power Company, Inc., SEC Form 10-K, for the fiscal year ended December 31, 2018, at 2.

[42] Source: Bloomberg Professional.

- I excluded companies with less than 60.00 percent of total net operating income derived from regulated utility operations over the three most recently reported fiscal years;
- I excluded companies whose regulated electric operating income over the three most recently reported fiscal years represented less than 60.00 percent of total regulated operating income, and;
- I eliminated companies that are currently known to be party to a merger or other significant transaction.

Q. DID YOU INCLUDE AEP IN YOUR ANALYSIS?

A. No. To avoid the circular logic that otherwise would occur, it is my practice to exclude the subject company, or its parent holding company, from the proxy group.

Q. WHAT COMPANIES MET THOSE SCREENING CRITERIA?

A. The criteria discussed above resulted in a proxy group of the following 21 companies:

Table 3: Proxy Group Screening Results

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

C. Cost of Equity

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

A. As noted earlier, because the Cost of Equity is not directly observable, it must be estimated based on both quantitative and qualitative information. Although several empirical models have been developed for that purpose, all are subject to limiting assumptions or other constraints. Consequently, many finance texts recommend using

multiple approaches to estimate the Cost of Equity as detailed in Appendix A.[43] When faced with the task of estimating the Cost of Equity, analysts and investors are inclined to gather and evaluate as much relevant data as reasonably can be analyzed and, therefore, rely on multiple analytical approaches.

As a practical matter, no individual model is more reliable than all others under all market conditions. Therefore, it is important to use multiple methods to mitigate the effects of assumptions and inputs associated with any single approach. As noted earlier, the use of multiple methods, and the consideration given to them, recently was addressed by FERC.

Consistent with that approach, I have considered the results of the Constant Growth DCF model, the traditional and empirical forms of the CAPM, and the Bond Yield Plus Risk Premium approach. I also have provided an Expected Earnings analysis, which I have applied as a corroborating method. FERC issued similar guidance, using the Expected Earnings analysis in its determination of the "zone of reasonableness", observing that "*investors use those models*".[44]

Q. PLEASE BRIEFLY DESCRIBE THE CONSTANT GROWTH DCF MODEL.

A. The Constant Growth DCF approach defines the Cost of Equity as the sum of (1) the expected dividend yield, and (2) expected long-term growth. As explained in Appendix A, the model often is expressed in the familiar form $k = \frac{D(1+g)}{P_0} + g$, where the expected dividend yield generally equals the expected annual

[43] *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.

[44] *Id*., at 29 (italics in original).

dividend divided by the current stock price, and the growth rate is based on analysts' expectations of earnings growth. The Constant Growth DCF formula, which falls from the longer "present value" structure,[45] requires several simplifying assumptions, including the constancy of inputs in perpetuity.

Under the model's strict assumptions, the growth rate equals the rate of capital appreciation (that is, the growth in the stock price).[46] Given that assumption, it does not matter whether the investor holds the stock in perpetuity, or whether they hold the stock for some period of time, collect the dividends, then sell at the prevailing market price. That result also requires that the ROE result reached today will remain unchanged in perpetuity. So, if market conditions are such that the model produces an unreasonably low (or high) ROE estimate today, it assumes that estimate will be the same ROE investors require every day in the future, regardless of whether or how market conditions change.

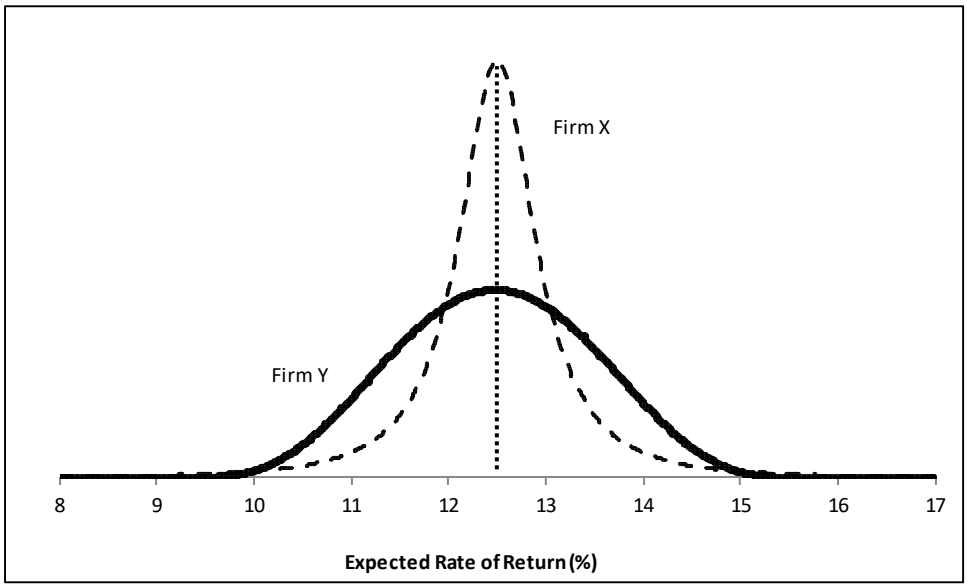
Q. PLEASE BRIEFLY DESCRIBE THE CAPITAL ASSET PRICING MODEL.

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

45 *See* Appendix A, part A.

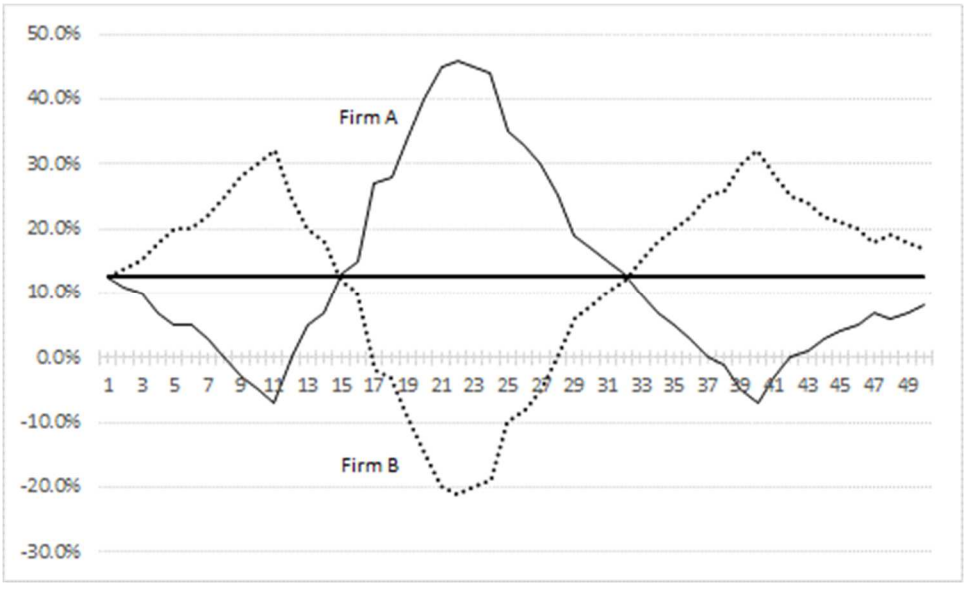
46 As discussed in Appendix A, part A, the model assumes that earnings, dividends, book value, and the stock price all grow at the same constant rate in perpetuity. Additionally, academic research has indicated that analysts forecasts of growth are superior to other measures of growth (*see* Appendix A, part A).

Chart 4: Expected Return and Risk



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

Chart 5: Relative Risk



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

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

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

The risk premium is defined as a security's Beta coefficient multiplied by the risk premium of the overall market (the "Market Risk Premium" or "MRP"). The Beta coefficient is a measure of the subject company's risk relative to the overall market, *i.e.*, the "non-diversifiable" risk. A Beta coefficient of 1.00 means the security is as risky as the overall market; a value below 1.00 represents a security with less risk than the overall market, and a value over 1.00 represents a security with more risk than the overall market.

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

Given that the correlation between the proxy group companies and the S&P 500 has declined since 2010, while the relative risk has increased, the CAPM in the form presented here may not adequately reflect the expected systematic risk, and therefore, the returns required by investors in low-Beta companies. As such, I have considered the Empirical CAPM ("ECAPM") approach, which is a variant of the CAPM approach. The ECAPM adjusts for the CAPM's tendency to under-estimate returns for companies that (like utilities) have Beta coefficients less than one, and over-estimate returns for relatively high-Beta coefficient stocks.

Q. PLEASE BRIEFLY DESCRIBE THE BOND YIELD PLUS RISK PREMIUM APPROACH.

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

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

Q. PLEASE SUMMARIZE YOUR ANALYTICAL RESULTS.

A. The results of the models described above are provided in Tables 4a and 4b, below.[47]

[47] *See* Appendix A for a more detailed description of the models, assumptions, and inputs described in Section IV.

Table 4a: Summary of DCF Results[48]

	Mean Low	Mean	Mean High
30-Day Average	8.03%	8.92%	9.97%
90-Day Average	8.13%	9.03%	10.08%
180-Day Average	8.22%	9.12%	10.17%

Table 4b: Summary of Risk Premium Results[49]

CAPM	Bloomberg Derived Market Risk Premium	Value Line Derived Market Risk Premium
Average Bloomberg Beta Coefficient		
Current 30-Year Treasury (3.03%)	8.14%	9.64%
Near Term Projected 30-Year Treasury (3.25%)	8.36%	9.86%
Average Value Line Beta Coefficient		
Current 30-Year Treasury (3.03%)	9.33%	11.18%
Near Term Projected 30-Year Treasury (3.25%)	9.55%	11.40%
ECAPM	**Bloomberg Derived Market Risk Premium**	**Value Line Derived Market Risk Premium**
Average Bloomberg Beta Coefficient		
Current 30-Year Treasury (3.03%)	9.51%	11.42%
Near Term Projected 30-Year Treasury (3.25%)	9.74%	11.64%
Average Value Line Beta Coefficient		
Current 30-Year Treasury (3.03%)	10.41%	12.57%
Near Term Projected 30-Year Treasury (3.25%)	10.63%	12.79%
Bond Yield Plus Risk Premium Approach		
Current 30-Year Treasury (3.03%)	9.93%	
Near Term Projected 30-Year Treasury (3.25%)	9.96%	
Long-Term Projected 30-Year Treasury (4.05%)	10.17%	

[48] *See* Attachment RBH-2.

[49] See Attachments RBH-5 and RBH-6.

Q. PLEASE BRIEFLY DESCRIBE THE EXPECTED EARNINGS ANALYSIS.

A. The Expected Earnings analysis is based on the principle of opportunity costs. By taking historical returns on book equity and comparing those to authorized ROEs, investors are able to directly compare returns from investments of similar risk. In addition to historical returns, Value Line also provides projected returns on book equity. I have relied solely on forward-looking projections in the Expected Earnings analysis.[50] Those results range from 6.50 percent to 14.06 percent, with an average of 10.26 percent.[51] As noted earlier, I used those results to assess the reasonableness of the DCF, CAPM, and Bond-Yield Plus Risk Premium results.[52]

D. Flotation Costs

Q. WHAT ARE FLOTATION COSTS?

A. Flotation costs are the costs associated with the sale of new issues of common stock. These costs include out-of-pocket expenditures for preparation, filing, underwriting, and other issuance costs of common stock.

Q. WHY IS IT IMPORTANT TO RECOGNIZE FLOTATION COSTS IN THE ALLOWED ROE?

A. To attract and retain new investors, a regulated utility must have the opportunity to earn a return that is both competitive and compensatory. To the extent a company is denied the opportunity to recover prudently incurred flotation costs, actual returns will fall short of expected (or required) returns, thereby diminishing its ability to attract adequate capital on reasonable terms.

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50 As described more fully in Appendix A, an adjustment is necessary to accurately reflect the average invested capital over the period in question.

51 Attachment RBH-7.

52 *See* Docket Nos. EL14-12-003 and EL15-45-000, *Order Directing Briefs.* (November 15, 2018)

Q. ARE FLOTATION COSTS PART OF THE UTILITY'S INVESTED COSTS OR PART OF THE UTILITY'S EXPENSES?

A. Flotation costs are part of the invested costs of the utility, which are properly reflected on the balance sheet under "paid in capital." They are not current expenses, and therefore are not reflected on the income statement. Rather, like investments in rate base or the issuance costs of long-term debt, flotation costs are incurred over time. As a result, the great majority of a utility's flotation cost is incurred prior to the test year, but remains part of the cost structure that exists during the test year and beyond. As such, it should be recognized for ratemaking purposes. Therefore, recovery of flotation costs is appropriate even if no new issuances are planned in the near future because failure to allow such cost recovery may deny I&M the opportunity to earn its required rate of return in the future.

Q. IS THE NEED TO CONSIDER FLOTATION COSTS ELIMINATED BECAUSE I&M IS A WHOLLY OWNED SUBSIDIARY OF AEP?

A. No, it is not. Wholly owned subsidiaries such as I&M receive equity capital from their parents, and provide returns on the capital that roll up to the parent, which is designated to attract and raise capital based on the returns of those subsidiaries. To deny recovery of issuance costs associated with capital that is invested in the subsidiaries ultimately would penalize the investors that fund the utility operations, and would inhibit the utility's ability to obtain new equity capital at a reasonable cost. This is important for companies such as I&M that are planning continued capital expenditures in the near term, and for which access to capital (at reasonable cost rates) to fund such required expenditures will be critical.

Q. DO THE DCF AND CAPM MODELS ALREADY INCORPORATE INVESTOR EXPECTATIONS OF A RETURN TO COMPENSATE FOR FLOTATION COSTS?

A. No. The models used to estimate the appropriate ROE assume no "friction" or transaction costs, as these costs are not reflected in the market price (in the case of the DCF model) or risk premium (in the case of the CAPM and the Bond Yield Plus Risk Premium model). Therefore, it is appropriate to consider flotation costs when determining where within the range of reasonable results I&M's return should fall.

Q. IS THE NEED TO CONSIDER FLOTATION COSTS RECOGNIZED BY THE ACADEMIC AND FINANCIAL COMMUNITIES?

A. Yes. The need to reimburse investors for equity issuance costs is recognized by the academic and financial communities in the same spirit that investors are reimbursed for the costs of issuing debt. For example, Dr. Morin notes that "[t]he costs of issuing [common stock] are just as real as operating and maintenance expenses or costs incurred to build utility plants, and fair regulatory treatment must permit the recovery of these costs."[53] Dr. Morin further notes that "equity capital raised in a given stock issue remains on the utility's common equity account and continues to provide benefits to ratepayers indefinitely."[54] This treatment is consistent with the philosophy of a fair rate of return. As explained by Dr. Shannon Pratt:

> Flotation costs occur when a company issues new stock. The business usually incurs several kinds of flotation or transaction costs, which reduce the actual proceeds received by the business. Some of these are direct out-of-pocket outlays, such as fees paid to underwriters, legal

[53] Roger A. Morin, New Regulatory Finance, Public Utility Reports, Inc., 2006, at 321.
[54] *Id.*, at 327.

> expenses, and prospectus preparation costs. Because of this reduction in proceeds, the business's required returns must be greater to compensate for the additional costs. Flotation costs can be accounted for either by amortizing the cost, thus reducing the net cash flow to discount, or by incorporating the cost into the cost of equity capital. Since flotation costs typically are not applied to operating cash flow, they must be incorporated into the cost of equity capital.[55]

Similarly, Morningstar has commented on the need to reflect flotation costs in the cost of capital:

> Although the cost of capital estimation techniques set forth later in this book are applicable to rate setting, certain adjustments may be necessary. One such adjustment is for flotation costs (amounts that must be paid to underwriters by the issuer to attract and retain capital).[56]

Q. HAVE YOU CALCULATED THE EFFECT OF FLOTATION COSTS ON THE RETURN ON EQUITY?

A. Yes, I have. I modified the DCF calculation to derive the dividend yield that would reimburse investors for direct issuance costs. Based on the weighted average issuance costs shown in Attachment RBH-8, a reasonable estimate of flotation costs is approximately 0.09 percent (nine basis points). Although I have calculated the effect of flotation costs, I did not make any explicit adjustments to my ROE estimates to account for flotation costs. Rather, I took it into consideration in determining where the Company's Cost of Equity falls within the range of analytical results.

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[55] Shannon P. Pratt, Roger J. Grabowski, Cost of Capital: Applications and Examples, 4th Ed. (John Wiley & Sons, Inc., 2010), at 586.

[56] Morningstar, Inc. Ibbotson SBBI 2013 Valuation Yearbook, at 25.

V. BUSINESS RISKS AND OTHER CONSIDERATIONS

Q. DO THE MEAN DCF, CAPM, AND RISK PREMIUM RESULTS FOR THE PROXY GROUP PROVIDE AN APPROPRIATE ESTIMATE FOR THE COST OF EQUITY FOR I&M?

A. No, the mean results do not necessarily provide an appropriate estimate of I&M's Cost of Equity. In my view, there are additional factors that must be taken into consideration when determining where I&M's Cost of Equity falls within the range of results, including: (1) the risks associated with the Company's generation portfolio and related environmental regulations; (2) the risk associated with customer concentration; and (3) the Company's planned capital expenditures and the effect, if any, of certain regulatory mechanisms. Those factors, which are discussed below, should be considered in terms of their overall effect on I&M's business risk and investor earnings and, therefore, its Cost of Equity.

A. Generation Portfolio & Environmental Regulations

Q. PLEASE PROVIDE AN OVERVIEW OF THE RISKS ASSOCIATED WITH I&M'S GENERATION PORTFOLIO AND CURRENT ENVIRONMENTAL REGULATIONS.

A. I&M's operations are substantially dependent on coal-fired, and nuclear generation. As shown in Figure TLT-1 included in Company witness Mr. Thomas's testimony, coal-fired generation represented approximately 46.50 percent of the Company's total generation resources and nuclear generation represented approximately 44.10 percent. In total, coal-fired and nuclear generation represent approximately 90.60 percent of I&M's generation resource mix. In general, capital-intensive generation assets, such as nuclear

and coal-fired generation facilities, are subject to certain risks including the recovery of the investors' capital in the event of a change in market structure or a plant failure, and the recovery of replacement power and repair costs in the event of extended or unplanned outage. In addition, Federal environmental regulations present the substantial risk of acquiring and investing additional capital to comply with new regulations, operating restrictions, or possibly closure.

Most recently, the U.S. Environmental Protection Agency ("EPA") unveiled a proposal to replace the Clean Power Plan with the Affordable Clean Energy ("ACE") rule. The ACE rule would allow utilities to make heat efficiency upgrades to coal-fired power plants without triggering further environmental controls and would exclude natural gas-fired power plants from emissions limits.[57] Because investors consider those risks when establishing their return requirements, the Commission likewise should consider the effect of the additional risk associated with the Company's generating portfolio in determining its authorized ROE.

As noted by Company witness Mr. Thomas, I&M faces additional environmental requirements related to its coal-fired generation, in particular, the Consent Decree that was entered between the EPA, I&M, and other parties under the New Source Review regulations of the Clean Air Act. These environmental requirements bring to focus the risks and costs associated with I&M's coal-fired generation.

In a recent report, S&P noted that power generators have addressed carbon-reduction policies that target coal-fired generating plants by implementing three

[57] *See* S&P Global Market Intelligence, "EPA's Affordable Clean Energy rule: How it would work," August 21, 2018. The EPA has pushed back its timeline for issuing regulations for ACE to the second quarter of 2019. *See* S&P Global Market Intelligence, "US EPA pushes back timeline for Clean Power Plan replacement following shutdown" February 7, 2019.

strategies: adding "scrubbers" to coal-fired plants; switching to burning natural gas; or retiring coal-fired plants outright.[58] To the extent those strategies increase costs for utilities, the companies' credit profiles may come under pressure. As noted by S&P:

> Higher costs could become a key credit issue for regulated utilities given the importance of managing customer rate increases, which has implications for relations with regulators, as well as economic and political ramifications that could heighten business risk. Any rating actions would likely not occur until there is further clarity from a utility about early plant retirements and related cost recovery. For utilities that have significant coal-fired generation, recovery mechanisms will be extremely important to continue to support operating cash flow and maintain robust financial measures.[59]

Consequently, the risks associated with the Company's generation mix and the potential cost of compliance with related environmental regulations could affect the Company's financial profile.

Q. PLEASE DESCRIBE THE COMPANY'S NUCLEAR GENERATING ASSETS.

A. I&M's generation portfolio includes approximately 2,278 megawatts ("MW") of owned operating nuclear generating capacity from its Cook Plant, as discussed in greater detail by Company witness Mr. Lies. AEP states in its 2018 SEC Form 10-K that it is exposed to nuclear generation risk:

> I&M owns the Cook Plant, which consists of two nuclear generating units for a rated capacity of 2,278 MWs, or about 7% of the generating capacity in the AEP System. AEP and I&M are, therefore, subject to the risks of nuclear generation, which include the following:
>
> - The potential harmful effects on the environment and human health due to an adverse incident/event resulting from the operation of nuclear facilities and the storage, handling and disposal of radioactive materials such as spent nuclear fuel.

[58] S&P Research, The Clean Power Plan Will Spur Further Coal Plant Closings, but How Will U.S. Utilities Recover the Costs? (Sept. 2, 2014).

[59] *Id*.

- Limitations on the amounts and types of insurance commercially available to cover losses that might arise in connection with nuclear operations.

- Uncertainties with respect to contingencies and assessment amounts triggered by a loss event (federal law requires owners of nuclear units to purchase the maximum available amount of nuclear liability insurance and potentially contribute to the coverage for losses of others).

- Uncertainties with respect to the technological and financial aspects of decommissioning nuclear plants at the end of their licensed lives.

There can be no assurance that I&M's preparations or risk mitigation measures will be adequate if and when these risks are triggered.

* * * *

Costs associated with the operation (including fuel), maintenance and retirement of nuclear plants continue to be more significant and less predictable than costs associated with other sources of generation, in large part due to changing regulatory requirements and safety standards, availability of nuclear waste disposal facilities and experience gained in the operation of nuclear facilities. Costs also may include replacement power, any unamortized investment at the end of the useful life of the Cook Plant (whether scheduled or premature), the carrying costs of that investment and retirement costs. The ability to obtain adequate and timely recovery of costs associated with the Cook Plant is not assured.[60]

Q. PLEASE EXPLAIN THE RISK ASSOCIATED WITH THE COMPANY'S NUCLEAR GENERATING ASSETS.

A. Nuclear generating resources are regulated by the U.S. Nuclear Regulatory Commission ("NRC"). I&M is subject to NRC mandates to meet licensing and safety related standards that may require increased capital spending and incremental operating costs to ensure the continued operation of this very low-cost and emission-free generating source.

[60] American Electric Power Co., Inc. SEC 10-K, for the fiscal year ended December 31, 2018, at 33-34.

With respect to the potential for new regulatory requirements, AEP's SEC Form 10-K specifically noted:

> The NRC has broad authority under federal law to impose licensing and safety-related requirements for the operation of nuclear generation facilities. In the event of non compliance, the NRC has the authority to impose fines or shut down a unit, or both, depending upon its assessment of the severity of the situation, until compliance is achieved. Revised safety requirements promulgated by the NRC could necessitate substantial capital expenditures at nuclear plants. In addition, although management has no reason to anticipate a serious nuclear incident at the Cook Plant, if an incident did occur, it could harm results of operations or financial condition. A major incident at a nuclear facility anywhere in the world could cause the NRC to limit or prohibit the operation or licensing of any domestic nuclear unit. Moreover, a major incident at any nuclear facility in the U.S. could require AEP or I&M to make material contributory payments.[61]

Q. ARE THERE EXAMPLES OF THE INCREASED RISK OF NEW REGULATORY REQUIREMENTS THAT NUCLEAR GENERATION PLANT OPERATORS FACE?

A. Yes. One example of nuclear risk is the increased oversight and regulatory requirements put in place following the March 11, 2011 earthquake and tsunami, which caused significant damage to the Fukushima Daiichi nuclear complex and threatened the public health. After the Fukushima accident, the NRC assembled a task force to assess current regulation and determine if new measures were required to ensure safety. The task force issued a report in July 2011 that included a set of recommendations for NRC consideration.

Those recommendations continue to be modified and expanded by NRC staff, and the first related regulatory requirements were issued in March 2012 with implementation

[61] American Electric Power, Inc. SEC 10-K, for the fiscal year ended December 31, 2018, at 34.

guidance issued on August 30, 2012.[62] The evolving nature of these NRC requirements put nuclear operators at risk of incurring costly future capital expenditures. For example, a 2013 survey of approximately one-half of the nuclear operators in the U.S. indicated that upgrade costs for the country's nuclear fleet could total $3.6 billion over the coming three to five years.[63]

Another example of nuclear risk is the ongoing and long-term uncertainty in regard to nuclear waste disposal, as discussed by Company Witness Mr. Lies. On June 8, 2012, the U.S. Court of Appeals vacated the NRC's rulemaking regarding storage and permanent disposal of nuclear waste. The Court of Appeals found the NRC rulemaking was deficient in that: (1) it "did not calculate the environmental effects of failing to secure permanent storage," and (2) "in determining that spent fuel can safely be stored on site at nuclear plants for sixty years after the expiration of a plant's license, the [NRC] failed to properly examine future dangers and key consequences."[64] The adjudicatory hearing that is required before a licensing decision can be made remains suspended.[65] Nuclear operators therefore face future capital expenditures related to expansion of nuclear waste storage, and may face additional costs to meet safety standards that may be required when the NRC addresses the Court of Appeal's ruling.

To the extent further mandates are promulgated by the NRC, additional spending may be required. Absent full and timely recovery, increases in the Company's capital

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62 www.nrc.gov/reactors/operating/ops-experience/japan-info.html

63 U.S. Nuclear Plant Operators Estimate $3.6 billion in Post-Fukushima Costs, Platts Nucleonics Week (June 6, 2013).

64 U.S. Court of Appeals For the District of Columbia Circuit, *On Petitions for Review of Orders of the Nuclear Regulatory Commission*, Case No. 11-1045, Decided June 8, 2012, at 3.

65 https://www.nrc.gov/waste/hlw-disposal.html

investment requirements will place additional pressure on its free cash flow and credit metrics.

Q. WHAT ARE YOUR CONCLUSIONS REGARDING THE RISK OF I&M'S GENERATING PORTFOLIO?

A. First, approximately 90.60 percent of I&M's generating portfolio consists of coal-fired and nuclear power plants that face certain inherent risks associated with capital intensive assets such as the risk of new regulations, cost uncertainty, and the ability to obtain adequate and timely cost recovery. In particular, I&M and its investors face the risk that federal environmental regulations will require the Company to invest additional capital or face closure or curtailment of generating capacity. Because investors consider these risks in establishing their return requirements, the Commission likewise should consider the effect of the additional risk associated with I&M's generating portfolio in determining its authorized ROE.

B. Customer Concentration

Q. PLEASE DISCUSS I&M'S DEGREE OF CUSTOMER CONCENTRATION.

A. As described by Company witnesses Mr. Thomas and Mr. Williamson, several wholesale contracts are scheduled to end in June 2020, which the Company has not been able to replace. Additionally, the Company has one large industrial customer that represents a significant load.

Q. HOW DOES CUSTOMER CONCENTRATION AFFECT I&M'S BUSINESS RISK?

A. I&M's concentration of load under wholesale contract poses an incremental element of business risk in two ways. First, these wholesale contracts reflect a substantial amount of

the Company's fixed costs which are otherwise subject to recovery from retail customers. Second, this potential increase in the cost burden of retail customers poses customer risk, further exacerbating the issue. Consequently, the Company's substantial capital investment plans and flat or declining retail load create a circumstance under which each dollar of invested assets produces fewer dollars of revenue. Under this scenario, the Company's ability to fund capital investments through growth-related revenue increases would be severely limited.

Q. PLEASE DESCRIBE THE TREND IN THE COMPANY'S SALES AND CUSTOMERS.

A. As discussed by Company witness Mr. Burnett, the Company has experienced a significant decrease in residential usage per customer over the last decade.[66] As a result, the Company's weather normalized residential retail sales load in Indiana has declined by 0.70 percent per year from 2005 to 2015 even though the customer count slightly increased. The decrease in residential usage per customer is largely driven by an aggressive promotion of energy efficiency technologies and Company-sponsored Demand Side Management programs.[67]

As discussed by Company witness Thomas, the Company also expects a decline in wholesale demand during the test year as several contracts with Indiana Michigan Municipal Distributors Association ("IMMDA") members expire on or before June 1, 2020.[68]

66 Direct Testimony of Chad Burnett, at 16-17.
67 *Id*., at 17.
68 Direct Testimony of Toby Thomas, at 6.

Q. WHAT EFFECT DOES DECLINING LOAD HAVE ON THE COMPANY AND ITS CUSTOMERS?

A. All else equal, flat or declining load produces lower revenues, which diminishes the Company's ability to recover its cost of service, putting upward pressure on rates and increasing the burden on customers that remain on the system. Absent the ability to offset lower revenues with cost savings, the result is an inability to earn the Company's authorized return.

C. Regulatory Mechanisms and Capital Spending

Q. HOW COMMON ARE REVENUE STABILIZATION AND COST RECOVERY MECHANISMS WITHIN THE INDUSTRY?

A. There is little question that revenue stabilization and cost recovery structures are becoming increasingly common. The increased interest in such mechanisms has generally resulted from the growing cost of maintaining system reliability, coupled with the flat or declining sales volume brought on by energy efficiency and relatively slow economic growth. Adjustment mechanisms to recover fuel costs, purchased power expenses, energy efficiency and demand-side program costs, new plant investment, and other expenses are common.[69] In addition, full or partial decoupling mechanisms have been implemented by electric utilities in 32 jurisdictions.[70] Consequently, the implementation of alternative regulation mechanisms has become an increasingly visible issue to investors.

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69 Attachment RBH-9.

70 *See for example*, *Adjustment Clauses: A State-by-State Overview*, Regulatory Research Associates, September 28, 2018; ACEEE Utility Business Model database, https://database.aceee.org/state/utility-business-model.

Q. ARE ALTERNATIVE REGULATION MECHANISMS COMMON AMONG THE PROXY GROUP COMPANIES?

A. Yes, they are. Attachment RBH-9 provides a summary of alternative regulation mechanisms and cost trackers currently in effect at each electric utility subsidiary of the proxy group companies. As Attachment RBH-9 demonstrates, recovery mechanisms are common among the proxy companies. Under the comparable earnings standard, the allowed Return on Equity should represent a return commensurate with the returns on investments of similar risk. To the extent the proxy companies have mechanisms in place to address revenue shortfalls or cost recovery, the Company's use of cost recovery mechanisms make it more comparable to its peers.

Q. DO THE COMPANY'S COST RECOVERY MECHANISMS REDUCE ITS COST OF EQUITY?

A. No, they do not. The principal analytical issue is whether the Company is so less risky than its peers as a direct result of its recovery mechanisms that investors would specifically and measurably reduce their return requirements. The fact that the Company's existing recovery mechanisms may, to a degree, stabilize the Company's revenues will not affect its Cost of Equity unless it can be demonstrated that (1) the Company is materially less risky than the proxy group by virtue of those mechanisms; and (2) investors are likely to react to the incremental effect of those mechanisms. Because revenue stabilization and cost recovery mechanisms are common among the proxy companies, there is no reason to assume that I&M would be materially less risky, and that its Cost of Equity would be lower than its peers' as a result of its recovery mechanisms.

Q. DOES THE COMPANY'S PROPOSED CUSTOMER CHARGE HAVE THE EFFECT OF REDUCING ITS COST OF EQUITY?

A. No, it does not. I understand that the Company's proposed customer charge, which would provide an incremental degree of revenue stability, is intended to reduce the extent to which volumetric rates recover fixed costs. However, Company's proposed rates result in only a modest improvement in fixed cost recovery with 88.0 percent of fixed costs still being recovered through volumetric rates.

Q. HAVE YOU ALSO CONSIDERED THE EFFECT OF THE COMPANY'S FUTURE TEST YEAR ON ITS COST OF EQUITY?

A. Yes, I have. Attachment RBH-9 demonstrates that a number of the proxy companies operate in jurisdictions that provide for future or partially forecast test years, or that permit Construction Work In Progress ("CWIP") to be included in rate base.[71] As to their prevalence, Value Line believes that the use of such regulatory mechanisms "is likely to increase as utilities request similar mechanisms in additional states."[72] Similarly, S&P has noted that it has "seen many state commissions approve alternative ratemaking techniques to traditional base rate case applications, which help utilities sustain cash flow measures, earning power, and ultimately, credit quality."[73] Consequently, the use of a forecast test year does not reduce the Company's risk relative to the proxy group.

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71 Source: Regulatory Research Associates. *See* Attachment RBH-9.

72 *See* Paul E. Debbas, CFA, *What Electric Utilities Are Doing About Regulatory Lag*, Value Line, May 23, 2012.

73 S&P RatingsDirect, *Industry Economic and Ratings Outlook: U.S. Regulated Utilities Expected To Continue On Stable Trajectory In 2013*, January 25, 2013.

Q. IS THE TIMELINESS OF RECOVERY AFFORDED BY THE COMPANY'S TRACKERS OF CONCERN TO INVESTORS?

A. Yes. Although the capital recovery mechanisms discussed above are viewed positively by the investment community,[74] of concern is the effect of the regulatory lag given the Company's proposed capital spending program. I&M currently plans to invest over $1.23 billion during the period including 2019-2020.[75] That amount includes expenditures in both transmission and distribution facilities and to maintain safe, sufficient, and reliable service. As the Company moves forward with its capital spending plan, retained earnings will be an important source of funding in mitigating the delay of capital recovery and executing its capital spending program.[76]

Q. PLEASE SUMMARIZE I&M'S CAPITAL EXPENDITURE PLANS.

A. As discussed by Company witness Mr. Lucas, the Company's capital expenditure program is substantial. I&M currently plans to invest approximately $1.23 billion of additional capital from 2019-2020, which includes the test year period (*see* Table 5, below).[77]

Table 5: I&M Capital Spending ($ millions)[78]

2019	2020	Total
$635	$597	$1,232

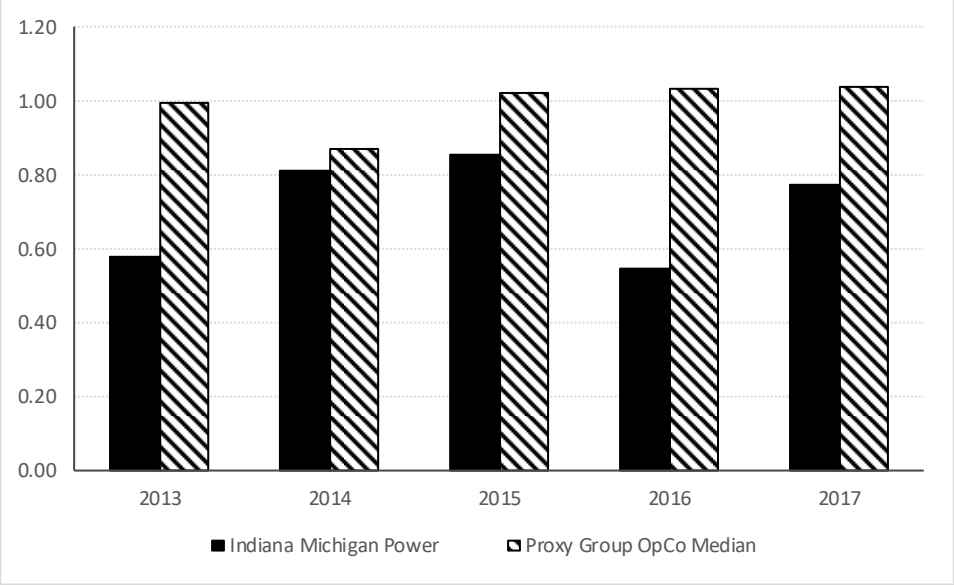
[74] *See* Moody's Investor Service, *Credit Opinion: Indiana Michigan Power Company*, April 27, 2018, at 3.
[75] *See* Attachment DAL-2, Page 1.
[76] Moody's Investor Service, *Indiana Michigan Power Company*, April 27, 2018, at 5.
[77] *See* Attachment DAL-2, Page 1.
[78] *Id*.

Because the Company will continue to make substantial investments in its utility operations, it will require efficient access to capital markets during the period that rates established in this proceeding will be in effect.

Q. PLEASE ELABORATE ON THE COMPANY'S NEED TO RELY ON RETAINED EARNINGS.

A. It is particularly important for utilities to fund capital investments with internally generated cash flow. Since 2013, however, I&M's ratio of cash flow from operating activities to capital expenditures has remained below its peers (*see* Chart 6, below). Because its cash flows have been less able to support its capital investment, the Company must access external capital, increasing the potential for negative credit consequences.

Chart 6: Historical Ratio of Cash Flow from Operating Activities to Capital Expenditures[79]



Retained earnings is an important funding mechanism in that net income is a primary source of operating cash flow, which reduces the Company's need to rely on external

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

capital.[80] As shown above, however, the Company's capital expenditures have considerably exceeded its operating cash flow.

Q. PLEASE ELABORATE ON WHY IS IT IMPORTANT FOR A UTILITY TO BE ALLOWED THE OPPORTUNITY TO EARN A RETURN THAT IS ADEQUATE TO ATTRACT CAPITAL AT REASONABLE TERMS.

A. As discussed earlier in my Direct Testimony, the allowed ROE should enable the subject utility to finance capital expenditures and working capital requirements at reasonable rates, and to maintain its financial integrity in a variety of economic and capital market conditions. The ratemaking process is based on the principle that, in order for investors and companies to commit the capital needed to provide safe and reliable utility services, the utility must have the opportunity to recover the return of, and the market-required return on, invested capital. Regulatory commissions recognize that because utility operations are capital intensive, their decisions should enable the utility to attract capital at reasonable terms; doing so balances the long-term interests of the utility and its ratepayers.

Further, the financial community carefully monitors the current and expected financial condition of utility companies, as well as the regulatory environment in which those companies operate. In that respect, the regulatory environment is one of the most important factors considered in both debt and equity investors' assessments of risk. That is especially important during periods in which the utility expects to make significant capital investments and, therefore, may require access to capital markets.

[80] Moody's Investor Service, *Indiana Michigan Power Company*, April 27, 2018, at 5.

Q. HOW DO THOSE CONSIDERATIONS APPLY TO I&M AND ITS CAPITAL SPENDING PLANS?

A. It is clear I&M's capital expenditure program is significant. It also is clear that the financial community recognizes the need for timely cost recovery for those capital expenditures. From a credit perspective, the additional pressure on cash flows associated with high levels of capital expenditures exerts corresponding pressure on credit metrics and, therefore, credit ratings. S&P has noted several long-term challenges for utilities' financial health including: heavy construction programs to address demand growth; declining capacity margins; and aging infrastructure and regulatory responsiveness to mounting requests for rate increases.[81] More recently, S&P noted that:

> We assume that capital spending will remain a focus of most utility managements and strain credit metrics. It provides growth when sales are diminished by ongoing demanded efficiency from regulators and other trends, and it is welcomed by policymakers that appreciate the economic stimulus and the benefits of safer, more reliable service. The speed with which the regulatory process turns the new spending into higher rates to begin to pay for it is an important factor in our assumptions and the forecast. Any extended lag between spending and recovery can exacerbate the negative effect on credit metrics and therefore ratings.[82]

Q. WHAT ARE YOUR CONCLUSIONS REGARDING THE EFFECT OF THE COMPANY'S CAPITAL INVESTMENT PLAN AND THE ASSOCIATED RECOVERY MECHANISMS?

A. I&M's capital expenditure plan is significantly larger than its internally generated cash, likely placing downward pressure on its free cash flow and credit profile. The

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81 *See* Standard & Poor's, *Industry Report Card: Utility Sectors in the Americas Remain Stable, While Challenges Beset European, Australian, and New Zealand Counterparts*, RatingsDirect, June 27, 2008, at 4.

82 *See* Standard & Poor's Rating Services, *Industry Top Trends 2017: Utilities*, RatingsDirect, February 16, 2017, at 4.

Company's capital recovery mechanisms are important to continue to provide retained earnings as a funding source for the Company to mitigate equity capital market risk. Although the Company's recovery mechanisms may be credit supportive, they are not necessarily credit enhancing. Consequently, the Commission's decision in this proceeding will directly affect the Company's ability to fund capital investments with operating cash flows, and the financial community's view of its financial profile.

VI. CAPITAL STRUCTURE AND COST OF DEBT

A. Capital Structure

Q. PLEASE SUMMARIZE THE COMPANY'S TEST YEAR CAPITAL STRUCTURE AND OVERALL RATE OF RETURN.

A. The Company is proposing an end of test year capital structure components and resulting overall rate of return on an investor-supplied capital basis as presented in Table 6 below:

Table 6: Summary of Overall Rate of Return (Investor-Supplied Capital)[83]

Capital Components	Ratio	Cost	Weighted Cost
Long-Term Debt	53.20%	4.54%	2.42%
Common Equity	46.80%	10.50%	4.91%
Total	**100.00%**		7.33%

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

A. In practice, the capital structure should enable the Company to maintain or enhance its financial integrity, thereby enabling access to capital at competitive rates under a variety of economic and financial market conditions. The capital structure relates to financial risk, which is a function of the percentage of debt relative to equity (that relationship is

[83] *See* Exhibit A-7, page 3.

often referred to as "financial leverage"). As the percentage of debt in the capital structure increases, so do the fixed obligations for the repayment of that debt and, therefore, the risk that cash flows may not be sufficient to meet those obligations on a timely basis. Consequently, as the degree of financial leverage increases, the risk of financial distress (*i.e.*, financial risk) also increases. Because the capital structure can affect the subject company's overall level of risk, it is an important consideration in establishing a just and reasonable rate of return. Therefore, it is important to consider the capital structure in the context of industry practice and investor requirements.

Q. PLEASE DESCRIBE YOUR ANALYSIS OF THE COMPANY'S CAPITAL STRUCTURE RELATIVE TO INDUSTRY PRACTICE.

A. As a measure of industry practice, I calculated the average capital structure for each of the utility operating companies held by the proxy companies over the last eight fiscal quarters. As shown in Attachment RBH-10, the average capital structure over that period included 53.63 percent common equity and 46.37 percent long-term debt; the average common equity ratios (on a company-specific basis) range from 46.73 percent to 62.16 percent. Based on that review, it is apparent that I&M's projected investor-supplied capital structure is within the range of those in place at the operating companies held within the proxy group.

Q. WHAT IS THE BASIS FOR USING AVERAGE CAPITAL COMPONENTS RATHER THAN A POINT-IN-TIME MEASUREMENT?

A. Measuring the capital components at a particular point in time can skew the capital structure by the specific circumstances of a particular period. Therefore, it is more

appropriate to normalize the relative relationship between the capital components over a period of time.

Q. WHAT IS YOUR CONCLUSION REGARDING AN APPROPRIATE CAPITAL STRUCTURE FOR I&M?

A. Considering the range of proxy company average equity ratios from 46.73 percent to 62.16 percent, I believe that I&M's 46.80 percent common equity ratio is reasonable, although it is somewhat below those of its peers.

B. Cost of Debt

Q. WHAT IS THE TEST YEAR COST OF DEBT PRESENTED BY THE COMPANY IN THIS PROCEEDING?

A. The Company has proposed a Cost of Debt of 4.54 percent, which is the Company's weighted average cost of debt at the end of the test year.

Q. PLEASE DISCUSS YOUR ANALYSIS OF THE COMPANY'S COST OF DEBT.

A. To test the reasonableness of the Company's proposed cost of debt I reviewed the yield on equivalent debt at the time of issuance. As shown in Attachment RBH-11, I compared the cost of each individual issuance to the Moody's BBB Utility Index at the time of the issuance.[84] The expected cost of debt, based on the Moody's A and BBB Utility Bond Index (the "Moody's Index") ranges from 4.19 percent to 4.62 percent, indicating that the Company's 4.54 percent proposed weighted average Cost of Debt is reasonable.

[84] *See also* Attachment A-7, Page 4.

VII. CONCLUSIONS AND RECOMMENDATION

Q. WHAT IS YOUR CONCLUSION REGARDING THE COMPANY'S COST OF EQUITY?

A. As discussed throughout my Direct Testimony, it is prudent and appropriate to consider multiple methodologies to arrive at an ROE recommendation for I&M. To that point, in the current capital market environment Constant Growth DCF-based models should be viewed with caution, because they do not adequately reflect changing capital market conditions and high levels of instability, whereas Risk Premium-based methods directly reflect such changes and measures of risk. As such, I have given somewhat more weight to the Risk Premium-based methods in arriving at my ROE recommendation.

As discussed in Appendix A and as shown in Attachments RBH-2 through RBH-7, I have performed several analyses to estimate I&M's Cost of Equity. In light of those results, and taking into consideration other relevant and observable market data, I believe that an ROE in the range of 10.00 percent to 10.75 percent represents the range of returns required by equity investors under current and expected market conditions. My recommendation reflects analytical results based on a proxy group of electric utilities, and takes into consideration the risk factors associated with: (1) the Company's generation portfolio and environmental regulations; (2) customer concentration; (3) the Company's planned capital expenditures and the effect, if any, of certain regulatory mechanisms; and (4) the costs of issuing common stock (that is, "flotation" costs).

Q. WHAT IS YOUR CONCLUSION REGARDING THE COMPANY'S CAPITAL STRUCTURE AND COST OF DEBT?

A. I conclude that the Company's 4.54 percent projected Cost of Debt at the end of the test year reflects prevailing market conditions at the times of issuance, and therefore is reasonable and appropriate. I also conclude that the Company's investor-supplied capital structure, which includes 46.80 percent common equity and 53.20 percent long-term debt is reasonable relative to its peers, although it does contain somewhat more financial leverage. The Company's Test Year capital structure is consistent with industry practice and supports I&M's financial integrity.

Q. DOES THIS CONCLUDE YOUR PREFILED DIRECT TESTIMONY?

A. Yes, it does.

VIII. APPENDIX A

A. Constant Growth Discounted Cash Flow Model

Q. PLEASE MORE FULLY DESCRIBE THE CONSTANT GROWTH DCF APPROACH.

A. The Constant Growth DCF approach is based on the theory that a stock's current price represents the present value of all expected future cash flows. In its simplest form, the Constant Growth DCF model expresses the Cost of Equity as the discount rate that sets the current price equal to expected cash flows:

$$\mathrm{P} = \frac{\mathrm{D}_1}{(1+\mathrm{k})} + \frac{\mathrm{D}_2}{(1+\mathrm{k})^2} + \cdots + \frac{\mathrm{D}_\infty}{(1+\mathrm{k})^\infty} \; P = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \cdots + \frac{D_\infty}{(1+k)^\infty} \qquad [4]$$

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

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

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

Q. WHAT ASSUMPTIONS ARE INHERENT IN THE CONSTANT GROWTH DCF MODEL?

A. The Constant Growth DCF model assumes: (1) earnings, book value, and dividends all grow at the same, constant rate in perpetuity; (2) a constant dividend payout ratio in perpetuity; (3) the observed P/E ratio will remain constant in perpetuity; and (4) estimated Cost of Equity will remain constant, also in perpetuity.

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

A. The dividend yield is based on each proxy company's current annualized dividend and average closing stock price over the 30-, 90-, and 180-trading day periods as of March 15, 2019, as explained more fully below.

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

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

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

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

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

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

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

A. The relationship between various growth rates and stock valuation metrics has been the subject of much academic research.[85] As noted over 40 years ago by Charles Phillips in The Economics of Regulation:

[85] *See for example*, Robert S. Harris, Using Analysts' Growth Forecasts to Estimate Shareholder Required Rate of Return, Financial Management, Spring 1986.

> For many years, it was thought that investors bought utility stocks largely on the basis of dividends. More recently, however, studies indicate that the market is valuing utility stocks with reference to total per share earnings, so that the earnings-price ratio has assumed increased emphasis in rate cases.[86]

Phillips' conclusion continues to hold true. Subsequent academic research has clearly and consistently indicated that measures of earnings and cash flow are strongly related to returns, and that analysts' forecasts of growth are superior to other measures of growth in predicting stock prices.[87] For example, Vander Weide and Carleton state that, "[our] results…are consistent with the hypothesis that investors use analysts' forecasts, rather than historically oriented growth calculations, in making stock buy-and-sell decisions."[88] Other research specifically has noted the importance of analysts' growth estimates in determining the Cost of Equity, and in the valuation of equity securities. Dr. Robert Harris noted that "a growing body of knowledge shows that analysts' earnings forecasts are indeed reflected in stock prices."[89] Citing Cragg and Malkiel, Dr. Harris notes that those authors "found that the evaluations of companies that analysts make are the sorts of ones on which market valuation is based."[90] As Brigham, Shome and Vinson noted, "evidence in the current literature indicates that (i) analysts' forecasts are superior

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86 Charles F. Phillips, Jr., The Economics of Regulation, Revised Edition, 1969, Richard D. Irwin, Inc., at 285.

87 *See for example*, Christofi, Christofi, Lori and 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.

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

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

90 *Id*.

to forecasts based solely on time series data; and (ii) investors do rely on analysts' forecasts."[91]

To that point, the research of Carleton and Vander Weide found earnings growth projections had a statistically significant relationship to stock valuation levels, whereas dividend growth rates did not.[92] Those findings suggest that investors form their investment decisions based on expectations of growth in earnings, not dividends. Consequently, earnings growth not dividend growth, is the appropriate estimate in the Constant Growth DCF model.

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

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

- The average daily closing prices for the 30-trading days, 90-trading days, and 180-trading days ended March 15, 2019, for the term P_0; and
- The annualized dividend per share as of March 15, 2019, for the term D_0.

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

- The Zacks consensus long-term earnings growth estimates;
- The First Call consensus long-term earnings growth estimates; and
- The Value Line long-term earnings growth estimates.

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91 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.

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

As explained below, I calculated a low, mean, and high DCF result for each proxy company (*see* Attachment RBH-2).

Q. HOW DID YOU CALCULATE THE MEAN HIGH AND MEAN LOW DCF RESULTS?

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

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

A. My Constant Growth DCF results are summarized in Table 7 below (*see also* Attachment RBH-2).

Table 7: Mean Constant Growth DCF Results[93]

	Mean Low	Mean	Mean High
30-Day Average	8.03%	8.92%	9.97%
90-Day Average	8.13%	9.03%	10.08%
180-Day Average	8.22%	9.12%	10.17%

As noted earlier, the Constant Growth DCF model is predicated on several assumptions, one of which is that the P/E ratio will remain constant, in perpetuity. Because utility sector P/E ratios have expanded to the point that they recently have exceeded both their

[93] *See* Attachment RBH-2.

long-term average and the market P/E ratio, the Constant Growth DCF model's results should be viewed with considerable caution. As a practical matter, the mean Constant Growth DCF results are well below a highly observable and relevant benchmark: the returns authorized for vertically integrated electric utilities.[94] As such, considering multiple methods, including the CAPM approach, and the Bond Yield Plus Risk Premium model, is more appropriate in current market conditions.

B. Capital Asset Pricing Model and Empirical Capital Asset Pricing Model

Q. PLEASE BRIEFLY DESCRIBE THE GENERAL FORM OF THE CAPM ANALYSIS.

A. The CAPM analysis is a risk premium method that estimates the Cost of Equity for a given security as a function of a risk-free return plus a risk premium (to compensate investors for the non-diversifiable or "systematic" risk of that security). As shown in Equation [6], the CAPM is defined by four components, each of which theoretically must be a forward-looking estimate:

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

where:

K_e = the required market ROE for a security;

β = the Beta coefficient of that security;

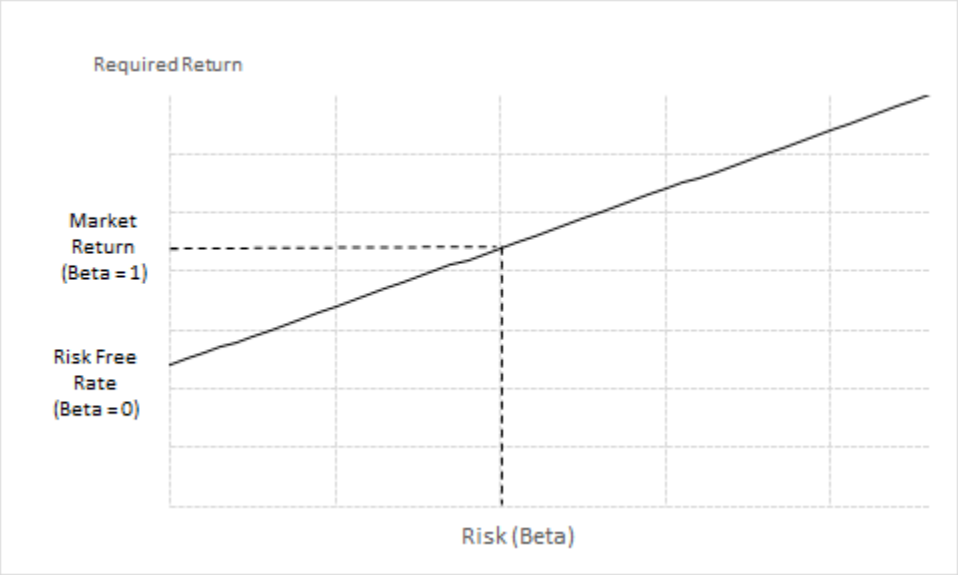
r_f = the risk-free rate of return; and

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

[94] For example, since January 2015, the average authorized ROE for vertically-integrated utilities has been 9.76 percent. Source: Regulatory Research Associates.

Equation [6] describes the Security Market Line ("SML"), or the CAPM risk-return relationship, which is graphically depicted in Chart 7 below. The intercept is the risk-free rate (r_f), which has a Beta coefficient of zero, the slope is the expected Market Risk Premium ($r_m - r_f$). By definition, r_m, the return on the market has a Beta coefficient of 1.00. Under the CAPM, the expected Equity Risk Premium for a given security is proportional to its Beta coefficient.

Chart 7: Security Market Line



In Equation [6], the term ($r_m - r_f$) represents the Market Risk Premium.[95] According to the theory underlying the CAPM, because 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:

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

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

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

Intuitively, companies with higher Beta coefficients have had more volatile returns, and have moved more closely with the overall companies with lower Beta coefficients. The implication is that a company with a Beta coefficient of 1.00 is as risky as the overall market; companies with Beta coefficients less than 1.00 are less risky, and those whose Beta coefficients are greater than 1.00 have greater risk than the overall market.

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

A. Because utility assets represent long duration investments, I used two different measures of the risk-free rate: (1) the current 30-day average yield on 30-year Treasury bonds (3.03 percent); and (2) the projected 30-year Treasury yield (3.25 percent).[96]

Q. WHY HAVE YOU RELIED ON THE 30-YEAR TREASURY YIELD FOR YOUR CAPM ANALYSIS?

A. In determining the risk-free rate, it is important to select the term (or maturity) that best matches the life of the underlying investment. Electric utilities typically are long-

[96] Blue Chip Financial Forecast, Vol. 38, No. 3, March 1, 2019, at 2.

duration investments and as such, the 30-year Treasury yield is most suitable for the purpose of calculating the Cost of Equity.

Q. PLEASE DESCRIBE YOUR *EX-ANTE* (*I.E.*, FORWARD-LOOKING) APPROACH TO ESTIMATING THE MARKET RISK PREMIUM.

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

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

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

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

A. As shown in Attachment RBH-4, I considered Beta coefficients reported by two sources, Bloomberg and Value Line. Although both services adjust their calculated (or "raw") Beta coefficients to reflect the tendency to regress to the market mean of 1.00, Value Line calculates the Beta coefficient over a five-year period, whereas Bloomberg's calculation is based on two years of data.

Q. WHAT ARE THE RESULTS OF YOUR CAPM ANALYSIS?

A. As shown in Table 8 (below) the CAPM analyses suggest an ROE range of 8.14 percent to 11.40 percent (*see* also Attachment RBH-5).

Table 8: Summary of CAPM Results[97]

	Bloomberg Derived Market Risk Premium	Value Line Derived Market Risk Premium
Average Bloomberg Beta Coefficient		
Current 30-Year Treasury (3.03%)	8.14%	9.64%
Near Term Projected 30-Year Treasury (3.25%)	8.36%	9.86%
Average Value Line Beta Coefficient		
Current 30-Year Treasury (3.03%)	9.33%	11.18%
Near Term Projected 30-Year Treasury (3.25%)	9.55%	11.40%

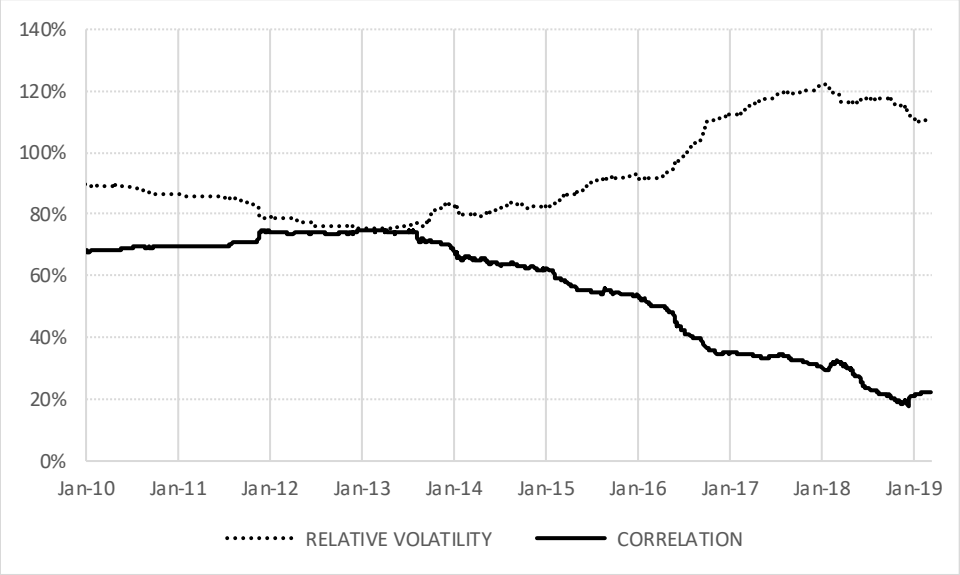
Q. DOES THE RECENT DECLINE IN THE PROXY GROUP AVERAGE BETA COEFFICIENT IMPLY A DECREASE IN RISK RELATIVE TO THE MARKET?

A. Not necessarily. Although the proxy group average Beta coefficient reported by Bloomberg has fallen from approximately 0.77 in 2014 to 0.48 in March 2019, as Chart 8

[97] *See* Attachment RBH-5.

below demonstrates, when the Beta coefficient is deconstructed into its components shown in Equation [7] above, we see that the correlation between the proxy group companies and the S&P 500 has declined, while the relative risk has increased. Given that the correlation between the proxy group companies and the S&P 500 has declined since 2014, while the relative risk has increased, the CAPM in the form presented here may not adequately reflect the expected systematic risk, and therefore, the returns required by investors in low-Beta companies such as utilities.

Chart 8: Components of Beta Coefficients Over Time[98]



Q. DID YOU CONSIDER ANOTHER FORM OF THE CAPM IN YOUR ANALYSIS?

A. Yes. I also included the ECAPM approach, which calculates the product of the adjusted Beta coefficient and the Market Risk Premium, and applies a weight of 75.00 percent to that result. The model then applies a 25.00 percent weight to the Market Risk Premium,

[98] Source: S&P Global Market Intelligence. Calculated as an index.

without any effect from the Beta coefficient.[99] The results of the two calculations are summed, along with the risk-free rate, to produce the ECAPM result, as noted in Equation [8] below:

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

where:

k_e = the required market ROE.

β = Adjusted Beta coefficient of an individual security.

r_f = the risk-free rate of return.

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

Q. WHAT IS THE BENEFIT OF THE ECAPM APPROACH?

A. The ECAPM addresses the tendency of the CAPM to under-estimate the Cost of Equity for companies, such as regulated utilities, with low Beta coefficients. As discussed below, the ECAPM recognizes the results of academic research indicating that the risk-return relationship is different (in essence, flatter) than estimated by the CAPM, and that the CAPM under-estimates the alpha, or the constant return term.[100]

Numerous tests of the CAPM have measured the extent to which security returns and Beta coefficients are related as predicted by the CAPM. The ECAPM method reflects the finding that the actual Security Market Line (SML) described by the CAPM formula is not as steeply sloped as the predicted SML.[101] Fama and French state that

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99 *See e.g.*, Roger A. Morin, *New Regulatory Finance* 189-90 (2006).

100 *Id*. 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.").

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

"[t]he returns on the low beta portfolios are too high, and the returns on the high beta portfolios are too low."[102] Similarly, Morin states:

> With few exceptions, the empirical studies agree that . . . low-beta securities earn returns somewhat higher than the CAPM would predict, and high-beta securities earn less than predicted. . . .
>
> Therefore, the empirical evidence suggests that the expected return on a security is related to its risk by the following approximation:
>
> $$K = R_F + x\ \beta(R_M - R_F) + (1\text{-}x)\ \beta(R_M - R_F)$$
>
> where x is a fraction to be determined empirically. The value of x that best explains the observed relationship Return = 0.0829 + 0.0520 β is between 0.25 and 0.30. If x = 0.25, the equation becomes:
>
> $$K = R_F + 0.25(R_M - R_F) + 0.75\ \beta(R_M - R_F)$$ [103]

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

> Some have argued that the use of the ECAPM is inconsistent with the use of adjusted betas, such as those supplied by Value Line and Bloomberg. This is because the reason for using the ECAPM is to allow for the tendency of betas to regress toward the mean value of 1.00 over time, and, since Value Line betas are already adjusted for such trend, an ECAPM analysis results in double-counting. This

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[102] 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.

[103] Roger A. Morin, *New Regulatory Finance* 175, 190 (2006).

> argument is erroneous. Fundamentally, the ECAPM is not an adjustment, increase or decrease, in beta. This is obvious from the fact that the expected return on high beta securities is actually lower than that produced by the CAPM estimate. The ECAPM is a formal recognition that the observed risk-return tradeoff is flatter than predicted by the CAPM based on myriad empirical evidence. 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. Even if the ECAPM is used, the return for low-beta securities is understated if the betas are understated. Referring back to Figure 6-1, the ECAPM is a return (vertical axis) adjustment and not a beta (horizontal axis) adjustment. Both adjustments are necessary. [104]

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

Table 9: Summary of ECAPM Results[105]

	Bloomberg Derived Market Risk Premium	**Value Line Derived Market Risk Premium**
Average Bloomberg Beta Coefficient		
Current 30-Year Treasury (3.03%)	9.51%	11.42%
Near Term Projected 30-Year Treasury (3.25%)	9.74%	11.64%
Average Value Line Beta Coefficient		
Current 30-Year Treasury (3.03%)	10.41%	12.57%
Near Term Projected 30-Year Treasury (3.25%)	10.63%	12.79%

[104] *Id.* at 191.

[105] *See* Attachment RBH-5.

C. Bond Yield Plus Risk Premium Approach

Q. PLEASE GENERALLY DESCRIBE THE BOND YIELD PLUS RISK PREMIUM APPROACH.

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

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

A. As suggested above, I first defined the Risk Premium as the difference between the authorized ROE and the then-prevailing level of the long-term (*i.e.*, 30-year) Treasury yield. I then gathered data for 1,584 electric utility rate proceedings between January 1980 and March 15, 2019. In addition to the authorized ROE, I also calculated the average period between the filing of the case and the date of the final order (the "lag period"). To reflect the prevailing level of interest rates during the pendency of the

proceedings, I calculated the average 30-year Treasury yield over the average lag period (approximately 200 days).

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

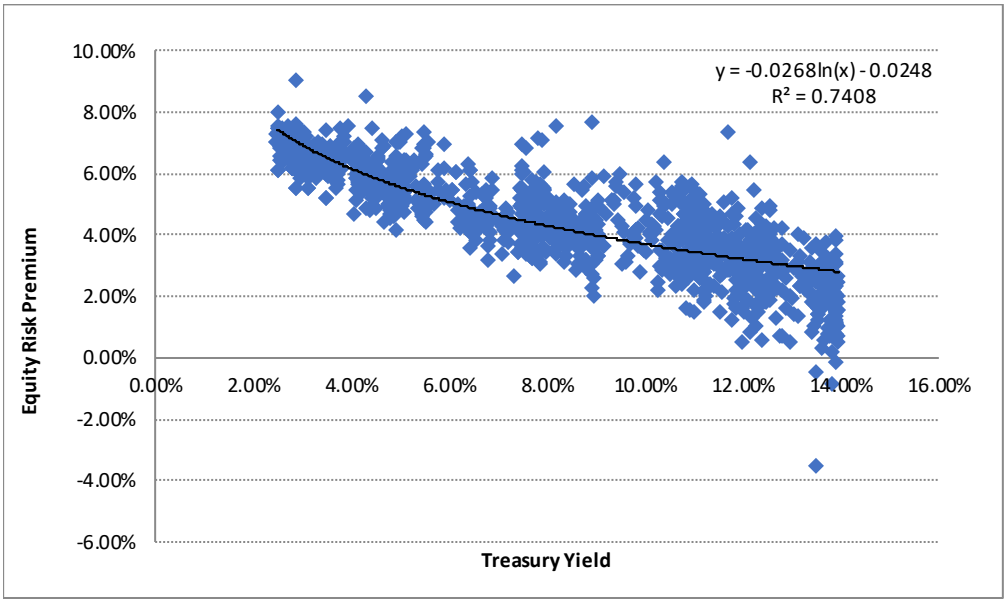
Q. HOW DID YOU MODEL THE RELATIONSHIP BETWEEN INTEREST RATES AND THE EQUITY RISK PREMIUM?

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

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

As shown on Chart 9 (below), the semi-log form is useful when measuring an absolute change in the dependent variable (in this case, the Risk Premium) relative to a proportional change in the independent variable (the 30-year Treasury yield).

Chart 9: Equity Risk Premium[106]



As Chart 9 illustrates, the Equity Risk Premium increases as interest rates fall. That finding, that there an inverse relationship between interest rates and the Equity Risk Premium is supported by published research. For example, Dr. Roger Morin notes that: "… [p]ublished studies by Brigham, Shome, and Vinson (1985), Harris (1986), Harris and Marston (1992, 1993), Carleton, Chambers, and Lakonishok (1983), Morin (2005), and McShane (2005), and others demonstrate that, beginning in 1980, risk premiums varied inversely with the level of interest rates - rising when rates fell and declining when interest rates rose."[107] Consequently, simply applying the long-term average Equity Risk Premium of 4.67 percent would significantly understate the Cost of Equity and produce results well below any reasonable estimate. Based on the regression coefficients in Chart

106 *See* Attachment RBH-6.

107 Roger A: Morin, New Regulatory Finance, Public Utilities Reports, Inc. 2006, at 128 [clarification added]

9, however, the implied ROE is between 9.93 percent and 10.17 percent (*see* Table 10 below and Attachment RBH-6).

Table 10: Summary of Bond Yield Plus Risk Premium Results[108]

	Return on Equity
Current 30-Year Treasury (3.03%)	9.93%
Near-Term Projected 30-Year Treasury (3.25%)	9.96%
Long-Term Projected 30-Year Treasury (4.05%)	10.17%

D. Expected Earnings Analysis

Q. PLEASE DESCRIBE THE EXPECTED EARNINGS ANALYSIS

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

Q. PLEASE EXPLAIN HOW THE EXPECTED EARNINGS ANALYSIS IS CONDUCTED.

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

[108] *See* Attachment RBH-6.

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

I relied on Value Line's projected Return on Common for the period 2021-2023/2022-2024, and adjusted those projected returns to account for the fact that they reflect common shares outstanding at the end of the period, rather than the average shares outstanding over the course of the year.[109] The results range from 6.50 percent to 14.06 percent, with an average value of 10.26 percent (*see* Attachment RBH-7).

[109] 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.

VERIFICATION

I, Robert B. Hevert, Partner of ScottMadden, Inc., affirm under penalties of perjury that the foregoing representations are true and correct to the best of my knowledge, information, and belief.

Date: ____May 10, 2019____

Robert B. Hevert

Attachment RBH-1
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

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

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Xcel Energy, Inc.	03/15	Public Service Company of Colorado	Docket No. 15AL-0135G	Return on Equity (gas)
Xcel Energy, Inc.	06/14	Public Service Company of Colorado	Docket No. 14AL-0660E	Return on Equity (electric)
Xcel Energy, Inc.	12/12	Public Service Company of Colorado	Docket No. 12AL-1268G	Return on Equity (gas)
Xcel Energy, Inc.	11/11	Public Service Company of Colorado	Docket No. 11AL-947E	Return on Equity (electric)
Xcel Energy, Inc.	12/10	Public Service Company of Colorado	Docket No. 10AL-963G	Return on Equity (electric)
Atmos Energy Corporation	07/09	Atmos Energy Colorado-Kansas Division	Docket No. 09AL-507G	Return on Equity (gas)
Xcel Energy, Inc.	12/06	Public Service Company of Colorado	Docket No. 06S-656G	Return on Equity (gas)
Xcel Energy, Inc.	04/06	Public Service Company of Colorado	Docket No. 06S-234EG	Return on Equity (electric)
Xcel Energy, Inc.	08/05	Public Service Company of Colorado	Docket No. 05S-369ST	Return on Equity (steam)
Xcel Energy, Inc.	05/05	Public Service Company of Colorado	Docket No. 05S-246G	Return on Equity (gas)
Connecticut Public Utilities Regulatory Authority				
Connecticut Light and Power Company	11/17	Connecticut Light and Power Company	Docket No. 17-10-46	Return on Equity
Connecticut Light and Power Company	06/14	Connecticut Light and Power Company	Docket No. 14-05-06	Return on Equity
Southern Connecticut Gas Company	09/08	Southern Connecticut Gas Company	Docket No. 08-08-17	Return on Equity
Southern Connecticut Gas Company	12/07	Southern Connecticut Gas Company	Docket No. 05-03-17PH02	Return on Equity
Connecticut Natural Gas Corporation	12/07	Connecticut Natural Gas Corporation	Docket No. 06-03-04PH02	Return on Equity
Council of the City of New Orleans				
Entergy New Orleans, LLC	09/18	Entergy New Orleans, LLC	Docket No. UD-18-07	Return on Equity
Delaware Public Service Commission				
Delmarva Power & Light Company	08/17	Delmarva Power & Light Company	Docket No. 17-0977 (Electric)	Return on Equity
Delmarva Power & Light Company	08/17	Delmarva Power & Light Company	Docket No. 17-0978 (Gas)	Return on Equity
Delmarva Power & Light Company	05/16	Delmarva Power & Light Company	Case No. 16-649 (Electric)	Return on Equity
Delmarva Power & Light Company	05/16	Delmarva Power & Light Company	Case No. 16-650 (Gas)	Return on Equity
Delmarva Power & Light Company	03/13	Delmarva Power & Light Company	Case No. 13-115	Return on Equity
Delmarva Power & Light Company	12/12	Delmarva Power & Light Company	Case No. 12-546	Return on Equity
Delmarva Power & Light Company	03/12	Delmarva Power & Light Company	Case No. 11-528	Return on Equity
District of Columbia Public Service Commission				
Potomac Electric Power Company	12/17	Potomac Electric Power Company	Formal Case No. 1150	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Potomac Electric Power Company	06/16	Potomac Electric Power Company	Formal Case No. 1139	Return on Equity
Washington Gas Light Company	02/16	Washington Gas Light Company	Formal Case No. 1137	Return on Equity
Potomac Electric Power Company	03/13	Potomac Electric Power Company	Formal Case No. 1103-2013-E	Return on Equity
Potomac Electric Power Company	07/11	Potomac Electric Power Company	Formal Case No. 1087	Return on Equity
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

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
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
Maui Electric Company, Limited	10/17	Maui Electric Company, Limited	Docket No. 2017-0150	Return on Equity
Hawaiian Electric Company, Inc.	12/16	Hawaiian Electric Company, Inc.	Docket No. 2016-0328	Return on Equity
Hawai'i Electric Light Company, Inc.	09/16	Hawai'i Electric Light Company, Inc.	Docket No. 2015-0170	Return on Equity
Maui Electric Company, Limited	12/14	Maui Electric Company, Limited	Docket No. 2014-0318	Return on Equity
Hawaiian Electric Company, Inc.	06/14	Hawaiian Electric Company, Inc.	Docket No. 2013-0373	Return on Equity
Hawai'i Electric Light Company, Inc.	08/12	Hawai'i Electric Light Company, Inc.	Docket No. 2012-0099	Return on Equity
Illinois Commerce Commission				
Ameren Illinois Company d/b/a Ameren Illinois	01/18	Ameren Illinois Company d/b/a Ameren Illinois	Docket No. 18-0463	Return on Equity
Ameren Illinois Company d/b/a Ameren Illinois	01/15	Ameren Illinois Company d/b/a Ameren Illinois	Docket No. 15-0142	Return on Equity
Liberty Utilities (Midstates Natural Gas) Corp. d/b/a Liberty Utilities	04/14	Liberty Utilities (Midstates Natural Gas) Corp. d/b/a Liberty Utilities	Docket No. 14-0371	Return on Equity
Ameren Illinois Company d/b/a Ameren Illinois	01/13	Ameren Illinois Company d/b/a Ameren Illinois	Docket No. 13-0192	Return on Equity
Ameren Illinois Company d/b/a Ameren Illinois	02/11	Ameren Illinois Company d/b/a Ameren Illinois	Docket No. 11-0279	Return on Equity (electric)
Ameren Illinois Company d/b/a Ameren Illinois	02/11	Ameren Illinois Company d/b/a Ameren Illinois	Docket No. 11-0282	Return on Equity (gas)
Indiana Utility Regulatory Commission				
Indiana Michigan Power Company	7/17	Indiana Michigan Power Company	Cause No. 44967	Return on Equity
Duke Energy Indiana, Inc.	12/15	Duke Energy Indiana, Inc.	Cause No. 44720	Return on Equity
Duke Energy Indiana, Inc.	12/14	Duke Energy Indiana, Inc.	Cause No. 44526	Return on Equity
Northern Indiana Public Service Company	05/09	Northern Indiana Public Service Company	Cause No. 43894	Assessment of Valuation Approaches
Kansas Corporation Commission				
Empire District Electric Company	02/19	Empire District Electric Company	Docket No. 19-EPDE-223-RTS	Return on Equity

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.	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

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

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	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

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	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)

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

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
EnergyNorth Natural Gas d/b/a National Grid NH	02/10	EnergyNorth Natural Gas d/b/a National Grid NH	Docket No. DG 10-017	Return on Equity
Unitil Energy Systems, Inc., EnergyNorth Natural Gas, Inc. d/b/a National Grid NH, Granite State Electric Company d/b/a National Grid, and Northern Utilities, Inc. – New Hampshire Division	08/08	Unitil Energy Systems, Inc., EnergyNorth Natural Gas, Inc. d/b/a National Grid NH, Granite State Electric Company d/b/a National Grid, and Northern Utilities, Inc. – New Hampshire Division	Docket No. DG 07-072	Carrying Charge Rate on Cash Working Capital
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

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
New Mexico Public Regulation Commission				
Public Service Company of New Mexico	12/16	Public Service Company of New Mexico	Case No. 16-00276-UT	Return on Equity (electric)
Public Service Company of New Mexico	08/15	Public Service Company of New Mexico	Case No. 15-00261-UT	Return on Equity (electric)
Public Service Company of New Mexico	12/14	Public Service Company of New Mexico	Case No. 14-00332-UT	Return on Equity (electric)
Public Service Company of New Mexico	12/14	Public Service Company of New Mexico	Case No. 13-00390-UT	Cost of Capital and Financial Integrity
Southwestern Public Service Company	02/11	Southwestern Public Service Company	Case No. 10-00395-UT	Return on Equity (electric)
Public Service Company of New Mexico	06/10	Public Service Company of New Mexico	Case No. 10-00086-UT	Return on Equity (electric)
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

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
North Carolina Utilities Commission				
Piedmont Natural Gas Company, Inc.	04/19	Piedmont Natural Gas Company, Inc.	Docket No. G-9, Sub 743	Return on Equity
Virginia Electric and Power Company d/b/a Dominion North Carolina Power	03/19	Virginia Electric and Power Company d/b/a Dominion North Carolina Power	Docket No. E-22, Sub 562	Return on Equity
Duke Energy Carolinas, LLC	08/17	Duke Energy Carolinas, LLC	Docket No. E-7, Sub 1146	Return on Equity
Duke Energy Progress, LLC	06/17	Duke Energy Progress, LLC	Docket No. E-2, Sub 1142	Return on Equity
Public Service Company of North Carolina, Inc.	03/16	Public Service Company of North Carolina, Inc.	Docket No. G-5, Sub 565	Return on Equity
Dominion North Carolina Power	03/16	Dominion North Carolina Power	Docket No. E-22, Sub 532	Return on Equity
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

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Pennsylvania Public Utility Commission				
Pike County Light & Power Company	01/14	Pike County Light & Power Company	Docket No. R-2013-2397237	Return on Equity (electric & gas)
Veolia Energy Philadelphia, Inc.	12/13	Veolia Energy Philadelphia, Inc.	Docket No. R-2013-2386293	Return on Equity (steam)
Rhode Island Public Utilities Commission				
The Narragansett Electric Company d/b/a National Grid	02/19	The Narragansett Electric Company d/b/a National Grid	Docket No. 4929	Support for financial remuneration under new power purchase agreement
The Narragansett Electric Company d/b/a National Grid	11/17	The Narragansett Electric Company d/b/a National Grid	Docket No. 4770	Return on Equity (electric & gas)
The Narragansett Electric Company d/b/a National Grid	04/12	The Narragansett Electric Company d/b/a National Grid	Docket No. 4323	Return on Equity (electric & gas)
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)

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Otter Tail Power Company	10/08	Otter Tail Power Company	Docket No. EL08-030	Return on Equity (electric)
Texas Public Utility Commission				
CenterPoint Energy Houston Electric LLC	04/19	CenterPoint Energy Houston Electric LLC	Docket No. 49421	Return on Equity
Texas-New Mexico Power Company	05/18	Texas-New Mexico Power Company	Docket No. 48401	Return on Equity
Entergy Texas, Inc.	05/18	Entergy Texas, Inc.	Docket No. 48371	Return on Equity
Southwestern Public Service Company	08/17	Southwestern Public Service Company	Docket No. 47527	Return on Equity
Oncor Electric Delivery Company, LLC	03/17	Oncor Electric Delivery Company, LLC	Docket No. 46957	Return on Equity
El Paso Electric Company	02/17	El Paso Electric Company	Docket No. 46831	Return on Equity
Southwestern Electric Power Company	12/16	Southwestern Electric Power Company	Docket No. 46449	Return on Equity (electric)
Sharyland Utilities, L.P.	04/16	Sharyland Utilities, L.P.	Docket No. 45414	Return on Equity
Southwestern Public Service Company	02/16	Southwestern Public Service Company	Docket No. 44524	Return on Equity (electric)
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

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Atmos Energy Corporation – Mid-Texas Division	06/18	Atmos Energy Corporation – Mid-Texas Division	GUD 10742	Return on Equity
CenterPoint Energy Resources Corp. D/B/A CenterPoint Energy Entex And CenterPoint Energy Texas Gas	11/17	CenterPoint Energy Resources Corp. D/B/A CenterPoint Energy Entex And CenterPoint Energy Texas Gas	GUD 10669	Return on Equity
Atmos Pipeline - Texas	01/17	Atmos Pipeline - Texas	GUD 10580	Return on Equity
CenterPoint Energy Resources Corp. D/B/A CenterPoint Energy Entex And CenterPoint Energy Texas Gas	12/16	CenterPoint Energy Resources Corp. D/B/A CenterPoint Energy Entex And CenterPoint Energy Texas Gas	GUD 10567	Return on Equity
CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Entex and CenterPoint Energy Texas Gas	03/15	CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Entex and CenterPoint Energy Texas Gas	GUD 10432	Return on Equity
CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Entex and CenterPoint Energy Texas Gas	07/12	CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Entex and CenterPoint Energy Texas Gas	GUD 10182	Return on Equity
Atmos Energy Corporation – West Texas Division	06/12	Atmos Energy Corporation – West Texas Division	GUD 10174	Return on Equity
Atmos Energy Corporation – Mid-Texas Division	06/12	Atmos Energy Corporation – Mid-Texas Division	GUD 10170	Return on Equity
CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Entex and CenterPoint Energy Texas Gas	12/10	CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Entex and CenterPoint Energy Texas Gas	GUD 10038	Return on Equity
Atmos Pipeline – Texas	09/10	Atmos Pipeline - Texas	GUD 10000	Return on Equity
CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Entex and CenterPoint Energy Texas Gas	07/09	CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Entex and CenterPoint Energy Texas Gas	GUD 9902	Return on Equity
CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Texas Gas	03/08	CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Texas Gas	GUD 9791	Return on Equity
Utah Public Service Commission				
Questar Gas Company	12/07	Questar Gas Company	Docket No. 07-057-13	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Vermont Public Service Board				
Central Vermont Public Service Corporation; Green Mountain Power	02/12	Central Vermont Public Service Corporation; Green Mountain Power	Docket No. 7770	Merger Policy
Central Vermont Public Service Corporation	12/10	Central Vermont Public Service Corporation	Docket No. 7627	Return on Equity (electric)
Green Mountain Power	04/06	Green Mountain Power	Docket Nos. 7175 and 7176	Return on Equity (electric)
Vermont Gas Systems, Inc.	12/05	Vermont Gas Systems	Docket Nos. 7109 and 7160	Return on Equity (gas)
Virginia State Corporation Commission				
Virginia Electric and Power Company	03/19	Virginia Electric and Power Company	Case No. PUR-2019-00050	Return on Equity
Virginia Electric and Power Company	03/17	Virginia Electric and Power Company	Case No. PUR-2017-00038	Return on Equity
Virginia Natural Gas, Inc.	03/17	Virginia Natural Gas, Inc.	Case No. PUE-2016-00143	Return on Equity
Virginia Electric and Power Company	10/16	Virginia Electric and Power Company	Case No. PUE-2016-00112; PUE-2016-00113; PUE-2016-00136	Return on Equity
Washington Gas Light Company	06/16	Washington Gas Light Company	Case No. PUE-2016-00001	Return on Equity
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

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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 with Half Year Growth Adjustment
30 Day Average Stock Price

Company	Ticker	[1] Annualized Dividend	[2] Average Stock Price	[3] Dividend Yield	[4] Expected Dividend Yield	[5] Zacks Earnings Growth	[6] First Call Earnings Growth	[7] Value Line Earnings Growth	[8] Average Earnings Growth	[9] Low ROE	[10] Mean ROE	[11] High ROE
ALLETE, Inc.	ALE	$2.35	$80.27	2.93%	3.01%	NA	6.00%	5.00%	5.50%	8.00%	8.51%	9.02%
Alliant Energy Corporation	LNT	$1.42	$45.56	3.12%	3.22%	6.00%	7.25%	6.50%	6.58%	9.21%	9.80%	10.48%
Ameren Corporation	AEE	$1.90	$70.76	2.68%	2.78%	6.80%	7.70%	6.50%	7.00%	9.27%	9.78%	10.49%
Avangrid, Inc.	AGR	$1.76	$49.39	3.56%	3.74%	7.70%	9.20%	12.00%	9.63%	11.40%	13.37%	15.78%
Black Hills Corporation	BKH	$2.02	$70.59	2.86%	2.93%	4.70%	3.63%	6.50%	4.94%	6.54%	7.88%	9.45%
CMS Energy Corporation	CMS	$1.53	$53.59	2.86%	2.95%	6.00%	6.89%	7.00%	6.63%	8.94%	9.58%	9.96%
DTE Energy Company	DTE	$3.78	$121.33	3.12%	3.19%	6.00%	4.16%	5.00%	5.05%	7.34%	8.25%	9.21%
Duke Energy Corporation	DUK	$3.71	$89.40	4.15%	4.25%	5.00%	4.50%	5.50%	5.00%	8.74%	9.25%	9.76%
El Paso Electric Company	EE	$1.44	$55.16	2.61%	2.66%	2.70%	5.10%	3.00%	3.60%	5.35%	6.26%	7.78%
Evergy, Inc.	EVRG	$1.90	$57.00	3.33%	3.44%	6.70%	6.25%	NMF	6.48%	9.69%	9.92%	10.14%
Hawaiian Electric Industries, Inc.	HE	$1.28	$38.43	3.33%	3.43%	6.20%	7.80%	3.50%	5.83%	6.89%	9.26%	11.26%
NextEra Energy, Inc.	NEE	$5.00	$185.69	2.69%	2.80%	7.70%	7.46%	9.00%	8.05%	10.25%	10.85%	11.81%
NorthWestern Corporation	NWE	$2.30	$67.21	3.42%	3.47%	3.10%	2.74%	2.50%	2.78%	5.97%	6.25%	6.58%
OGE Energy Corp.	OGE	$1.46	$41.97	3.48%	3.58%	4.80%	NA	6.50%	5.65%	8.36%	9.23%	10.09%
Otter Tail Corporation	OTTR	$1.40	$49.90	2.81%	2.90%	NA	9.00%	5.00%	7.00%	7.88%	9.90%	11.93%
Pinnacle West Capital Corporation	PNW	$2.95	$91.67	3.22%	3.30%	4.80%	4.56%	6.00%	5.12%	7.85%	8.42%	9.31%
PNM Resources, Inc.	PNM	$1.16	$44.14	2.63%	2.70%	4.60%	4.10%	7.50%	5.40%	6.78%	8.10%	10.23%
Portland General Electric Company	POR	$1.45	$49.89	2.91%	2.97%	4.00%	4.90%	4.00%	4.30%	6.96%	7.27%	7.88%
Southern Company	SO	$2.40	$49.84	4.82%	4.90%	4.50%	2.16%	3.50%	3.39%	7.03%	8.28%	9.42%
WEC Energy Group, Inc.	WEC	$2.36	$75.56	3.12%	3.20%	4.40%	4.59%	6.00%	5.00%	7.59%	8.20%	9.22%
Xcel Energy Inc.	XEL	$1.62	$54.41	2.98%	3.07%	5.90%	6.60%	5.50%	6.00%	8.56%	9.07%	9.68%
Proxy Group Mean				3.17%	3.26%	5.35%	5.73%	5.80%	5.66%	8.03%	8.92%	9.97%
Proxy Group Median				3.12%	3.19%	5.00%	5.55%	5.75%	5.50%	7.88%	9.07%	9.76%

Notes:
[1] Source: Bloomberg Professional
[2] Source: Bloomberg Professional, equals indicated number of trading day average as of March 15, 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 with Half Year Growth Adjustment
90 Day Average Stock Price

Company	Ticker	[1] Annualized Dividend	[2] Average Stock Price	[3] Dividend Yield	[4] Expected Dividend Yield	[5] Zacks Earnings Growth	[6] First Call Earnings Growth	[7] Value Line Earnings Growth	[8] Average Earnings Growth	[9] Low ROE	[10] Mean ROE	[11] High ROE
ALLETE, Inc.	ALE	$2.35	$78.18	3.01%	3.09%	NA	6.00%	5.00%	5.50%	8.08%	8.59%	9.10%
Alliant Energy Corporation	LNT	$1.42	$44.33	3.20%	3.31%	6.00%	7.25%	6.50%	6.58%	9.30%	9.89%	10.57%
Ameren Corporation	AEE	$1.90	$68.43	2.78%	2.87%	6.80%	7.70%	6.50%	7.00%	9.37%	9.87%	10.58%
Avangrid, Inc.	AGR	$1.76	$49.63	3.55%	3.72%	7.70%	9.20%	12.00%	9.63%	11.38%	13.35%	15.76%
Black Hills Corporation	BKH	$2.02	$66.38	3.04%	3.12%	4.70%	3.63%	6.50%	4.94%	6.73%	8.06%	9.64%
CMS Energy Corporation	CMS	$1.53	$51.67	2.96%	3.06%	6.00%	6.89%	7.00%	6.63%	9.05%	9.69%	10.06%
DTE Energy Company	DTE	$3.78	$117.08	3.23%	3.31%	6.00%	4.16%	5.00%	5.05%	7.46%	8.36%	9.33%
Duke Energy Corporation	DUK	$3.71	$87.56	4.24%	4.34%	5.00%	4.50%	5.50%	5.00%	8.83%	9.34%	9.85%
El Paso Electric Company	EE	$1.44	$53.94	2.67%	2.72%	2.70%	5.10%	3.00%	3.60%	5.41%	6.32%	7.84%
Evergy, Inc.	EVRG	$1.90	$57.64	3.30%	3.40%	6.70%	6.25%	NMF	6.48%	9.65%	9.88%	10.11%
Hawaiian Electric Industries, Inc.	HE	$1.28	$37.58	3.41%	3.51%	6.20%	7.80%	3.50%	5.83%	6.97%	9.34%	11.34%
NextEra Energy, Inc.	NEE	$5.00	$179.34	2.79%	2.90%	7.70%	7.46%	9.00%	8.05%	10.35%	10.95%	11.91%
NorthWestern Corporation	NWE	$2.30	$63.69	3.61%	3.66%	3.10%	2.74%	2.50%	2.78%	6.16%	6.44%	6.77%
OGE Energy Corp.	OGE	$1.46	$40.33	3.62%	3.72%	4.80%	NA	6.50%	5.65%	8.51%	9.37%	10.24%
Otter Tail Corporation	OTTR	$1.40	$48.82	2.87%	2.97%	NA	9.00%	5.00%	7.00%	7.94%	9.97%	12.00%
Pinnacle West Capital Corporation	PNW	$2.95	$88.79	3.32%	3.41%	4.80%	4.56%	6.00%	5.12%	7.96%	8.53%	9.42%
PNM Resources, Inc.	PNM	$1.16	$42.64	2.72%	2.79%	4.60%	4.10%	7.50%	5.40%	6.88%	8.19%	10.32%
Portland General Electric Company	POR	$1.45	$47.89	3.03%	3.09%	4.00%	4.90%	4.00%	4.30%	7.09%	7.39%	8.00%
Southern Company	SO	$2.40	$47.46	5.06%	5.14%	4.50%	2.16%	3.50%	3.39%	7.27%	8.53%	9.67%
WEC Energy Group, Inc.	WEC	$2.36	$72.33	3.26%	3.34%	4.40%	4.59%	6.00%	5.00%	7.73%	8.34%	9.36%
Xcel Energy Inc.	XEL	$1.62	$51.95	3.12%	3.21%	5.90%	6.60%	5.50%	6.00%	8.70%	9.21%	9.82%
Proxy Group Mean				3.27%	3.37%	5.35%	5.73%	5.80%	5.66%	8.13%	9.03%	10.08%
Proxy Group Median				3.20%	3.31%	5.00%	5.55%	5.75%	5.50%	7.96%	9.21%	9.85%

Notes:
[1] Source: Bloomberg Professional
[2] Source: Bloomberg Professional, equals indicated number of trading day average as of March 15, 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 with Half Year Growth Adjustment
180 Day Average Stock Price

Company	Ticker	[1] Annualized Dividend	[2] Average Stock Price	[3] Dividend Yield	[4] Expected Dividend Yield	[5] Zacks Earnings Growth	[6] First Call Earnings Growth	[7] Value Line Earnings Growth	[8] Average Earnings Growth	[9] Low ROE	[10] Mean ROE	[11] High ROE
ALLETE, Inc.	ALE	$2.35	$77.34	3.04%	3.12%	NA	6.00%	5.00%	5.50%	8.11%	8.62%	9.13%
Alliant Energy Corporation	LNT	$1.42	$43.68	3.25%	3.36%	6.00%	7.25%	6.50%	6.58%	9.35%	9.94%	10.62%
Ameren Corporation	AEE	$1.90	$65.93	2.88%	2.98%	6.80%	7.70%	6.50%	7.00%	9.48%	9.98%	10.69%
Avangrid, Inc.	AGR	$1.76	$49.67	3.54%	3.71%	7.70%	9.20%	12.00%	9.63%	11.38%	13.35%	15.76%
Black Hills Corporation	BKH	$2.02	$63.29	3.19%	3.27%	4.70%	3.63%	6.50%	4.94%	6.88%	8.21%	9.80%
CMS Energy Corporation	CMS	$1.53	$50.31	3.04%	3.14%	6.00%	6.89%	7.00%	6.63%	9.13%	9.77%	10.15%
DTE Energy Company	DTE	$3.78	$113.55	3.33%	3.41%	6.00%	4.16%	5.00%	5.05%	7.56%	8.47%	9.43%
Duke Energy Corporation	DUK	$3.71	$84.29	4.40%	4.51%	5.00%	4.50%	5.50%	5.00%	9.00%	9.51%	10.02%
El Paso Electric Company	EE	$1.44	$57.17	2.52%	2.56%	2.70%	5.10%	3.00%	3.60%	5.25%	6.16%	7.68%
Evergy, Inc.	EVRG	$1.90	$57.02	3.33%	3.44%	6.70%	6.25%	NMF	6.48%	9.69%	9.91%	10.14%
Hawaiian Electric Industries, Inc.	HE	$1.28	$36.49	3.51%	3.61%	6.20%	7.80%	3.50%	5.83%	7.07%	9.44%	11.44%
NextEra Energy, Inc.	NEE	$5.00	$174.90	2.86%	2.97%	7.70%	7.46%	9.00%	8.05%	10.43%	11.03%	11.99%
NorthWestern Corporation	NWE	$2.30	$61.51	3.74%	3.79%	3.10%	2.74%	2.50%	2.78%	6.29%	6.57%	6.90%
OGE Energy Corp.	OGE	$1.46	$38.40	3.80%	3.91%	4.80%	NA	6.50%	5.65%	8.69%	9.56%	10.43%
Otter Tail Corporation	OTTR	$1.40	$48.32	2.90%	3.00%	NA	9.00%	5.00%	7.00%	7.97%	10.00%	12.03%
Pinnacle West Capital Corporation	PNW	$2.95	$84.87	3.48%	3.57%	4.80%	4.56%	6.00%	5.12%	8.12%	8.69%	9.58%
PNM Resources, Inc.	PNM	$1.16	$40.91	2.84%	2.91%	4.60%	4.10%	7.50%	5.40%	6.99%	8.31%	10.44%
Portland General Electric Company	POR	$1.45	$46.70	3.11%	3.17%	4.00%	4.90%	4.00%	4.30%	7.17%	7.47%	8.08%
Southern Company	SO	$2.40	$46.55	5.16%	5.24%	4.50%	2.16%	3.50%	3.39%	7.37%	8.63%	9.77%
WEC Energy Group, Inc.	WEC	$2.36	$69.74	3.38%	3.47%	4.40%	4.59%	6.00%	5.00%	7.86%	8.47%	9.49%
Xcel Energy Inc.	XEL	$1.62	$49.73	3.26%	3.36%	5.90%	6.60%	5.50%	6.00%	8.85%	9.36%	9.97%
Proxy Group Mean				3.36%	3.45%	5.35%	5.73%	5.80%	5.66%	8.22%	9.12%	10.17%
Proxy Group Median				3.26%	3.36%	5.00%	5.55%	5.75%	5.50%	8.11%	9.36%	10.02%

Notes:
[1] Source: Bloomberg Professional
[2] Source: Bloomberg Professional, equals indicated number of trading day average as of March 15, 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 Est. Required Market Return	Year Treasury (30-day average)	Implied Market Risk Premium
13.64%	3.03%	10.61%

Company	Ticker	[4] Market Capitalization	[5] Weight in Index	[6] Estimated Dividend Yield	[7] Long-Term Growth Est.	[8] DCF Result	[9] Weighted DCF Result
Agilent Technologies Inc	A	25,751	N/A	0.83%	N/A	N/A	N/A
American Airlines Group Inc	AAL	14,114	0.06%	1.29%	9.54%	10.89%	0.0062%
Advance Auto Parts Inc	AAP	11,097	0.04%	0.15%	15.47%	15.64%	0.0070%
Apple Inc	AAPL	877,608	3.54%	1.58%	9.40%	11.05%	0.3908%
AbbVie Inc	ABBV	119,983	0.48%	5.31%	8.81%	14.36%	0.0694%
AmerisourceBergen Corp	ABC	16,925	0.07%	2.00%	8.70%	10.79%	0.0074%
ABIOMED Inc	ABMD	15,024	0.06%	0.00%	29.00%	29.00%	0.0176%
Abbott Laboratories	ABT	140,272	0.57%	1.53%	11.69%	13.30%	0.0752%
Accenture PLC	ACN	106,225	0.43%	1.76%	10.27%	12.12%	0.0519%
Adobe Inc	ADBE	125,747	0.51%	0.00%	17.16%	17.16%	0.0869%
Analog Devices Inc	ADI	40,290	0.16%	1.90%	11.98%	13.98%	0.0227%
Archer-Daniels-Midland Co	ADM	24,185	0.10%	3.29%	1.40%	4.71%	0.0046%
Automatic Data Processing Inc	ADP	67,658	0.27%	1.87%	14.00%	16.00%	0.0436%
Alliance Data Systems Corp	ADS	9,137	0.04%	1.44%	-1.33%	0.10%	0.0000%
Autodesk Inc	ADSK	33,570	0.14%	0.00%	51.81%	51.81%	0.0701%
Ameren Corp	AEE	17,868	0.07%	2.67%	6.35%	9.11%	0.0066%
American Electric Power Co Inc	AEP	41,342	0.17%	3.21%	6.12%	9.43%	0.0157%
AES Corp/VA	AES	12,129	0.05%	3.04%	7.67%	10.82%	0.0053%
Aflac Inc	AFL	37,479	0.15%	2.19%	3.43%	5.66%	0.0085%
Allergan PLC	AGN	50,308	0.20%	1.98%	5.45%	7.48%	0.0152%
American International Group Inc	AIG	38,292	0.15%	3.09%	11.00%	14.26%	0.0220%
Apartment Investment & Management Co	AIV	7,326	0.03%	4.09%	8.77%	13.03%	0.0038%
Assurant Inc	AIZ	6,091	N/A	2.53%	N/A	N/A	N/A
Arthur J Gallagher & Co	AJG	14,776	0.06%	2.14%	10.17%	12.41%	0.0074%
Akamai Technologies Inc	AKAM	11,828	0.05%	0.00%	15.40%	15.40%	0.0073%
Albemarle Corp	ALB	9,033	0.04%	1.61%	12.19%	13.89%	0.0051%
Align Technology Inc	ALGN	20,184	0.08%	0.00%	23.19%	23.19%	0.0189%
Alaska Air Group Inc	ALK	6,889	0.03%	2.45%	25.37%	28.13%	0.0078%
Allstate Corp/The	ALL	31,483	0.13%	2.04%	9.00%	11.13%	0.0141%
Allegion PLC	ALLE	8,351	0.03%	1.20%	10.22%	11.48%	0.0039%
Alexion Pharmaceuticals Inc	ALXN	30,412	0.12%	0.00%	15.78%	15.78%	0.0193%
Applied Materials Inc	AMAT	38,346	0.15%	2.10%	9.23%	11.42%	0.0177%
Advanced Micro Devices Inc	AMD	23,413	0.09%	0.00%	15.67%	15.67%	0.0148%
AMETEK Inc	AME	18,386	0.07%	0.71%	8.98%	9.72%	0.0072%
Affiliated Managers Group Inc	AMG	5,692	0.02%	1.27%	4.98%	6.28%	0.0014%
Amgen Inc	AMGN	119,004	0.48%	2.98%	5.83%	8.89%	0.0426%
Ameriprise Financial Inc	AMP	17,474	0.07%	2.94%	11.80%	14.92%	0.0105%
American Tower Corp	AMT	83,361	0.34%	1.95%	18.21%	20.34%	0.0683%
Amazon.com Inc	AMZN	841,116	3.39%	0.00%	37.60%	37.60%	1.2744%
Arista Networks Inc	ANET	22,474	0.09%	0.00%	21.64%	21.64%	0.0196%
ANSYS Inc	ANSS	15,111	0.06%	0.00%	10.37%	10.37%	0.0063%
Anthem Inc	ANTM	77,948	0.31%	1.02%	12.54%	13.62%	0.0428%
Aon PLC	AON	40,800	0.16%	1.01%	10.57%	11.63%	0.0191%
AO Smith Corp	AOS	8,615	0.03%	1.68%	9.33%	11.09%	0.0039%
Apache Corp	APA	12,933	0.05%	5.13%	-5.19%	-0.19%	-0.0001%
Anadarko Petroleum Corp	APC	22,256	0.09%	2.64%	19.98%	22.88%	0.0205%
Air Products & Chemicals Inc	APD	40,599	0.16%	2.48%	12.30%	14.93%	0.0244%
Amphenol Corp	APH	28,443	0.11%	0.93%	10.85%	11.83%	0.0136%
Aptiv PLC	APTV	21,137	0.09%	1.12%	10.66%	11.84%	0.0101%
Alexandria Real Estate Equities Inc	ARE	15,841	0.06%	2.83%	4.80%	7.69%	0.0049%
Arconic Inc	ARNC	9,209	0.04%	0.53%	14.35%	14.91%	0.0055%
Atmos Energy Corp	ATO	11,866	0.05%	2.07%	6.50%	8.64%	0.0041%
Activision Blizzard Inc	ATVI	34,090	0.14%	0.82%	6.65%	7.50%	0.0103%
AvalonBay Communities Inc	AVB	27,559	0.11%	3.06%	5.61%	8.76%	0.0097%
Broadcom Inc	AVGO	114,985	0.46%	3.47%	14.11%	17.82%	0.0826%
Avery Dennison Corp	AVY	9,255	0.04%	1.91%	5.75%	7.72%	0.0029%
American Water Works Co Inc	AWK	19,125	0.08%	1.86%	8.45%	10.39%	0.0080%
American Express Co	AXP	95,215	0.38%	1.42%	12.22%	13.72%	0.0526%
AutoZone Inc	AZO	23,948	0.10%	0.00%	13.08%	13.08%	0.0126%
Boeing Co/The	BA	214,124	0.86%	2.13%	15.15%	17.44%	0.1505%
Bank of America Corp	BAC	282,421	1.14%	2.34%	9.45%	11.90%	0.1354%
Baxter International Inc	BAX	39,435	0.16%	1.09%	12.20%	13.36%	0.0212%
BB&T Corp	BBT	38,168	0.15%	3.41%	9.85%	13.42%	0.0206%
Best Buy Co Inc	BBY	18,738	0.08%	2.84%	10.65%	13.64%	0.0103%
Becton Dickinson and Co	BDX	68,321	0.28%	1.25%	12.41%	13.73%	0.0378%
Franklin Resources Inc	BEN	16,977	0.07%	3.10%	10.00%	13.25%	0.0091%

Company	Ticker	Market Capitalization	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est.	DCF Result	Weighted DCF Result
Brown-Forman Corp	BF/B	24,125	0.10%	1.29%	9.91%	11.27%	0.0110%
Brighthouse Financial Inc	BHF	4,617	0.02%	0.00%	11.14%	11.14%	0.0021%
Baker Hughes a GE Co	BHGE	28,864	0.12%	2.28%	40.82%	43.56%	0.0507%
Biogen Inc	BIIB	64,888	0.26%	0.00%	5.08%	5.08%	0.0133%
Bank of New York Mellon Corp/The	BK	50,721	0.20%	2.27%	7.33%	9.69%	0.0198%
Booking Holdings Inc	BKNG	78,870	0.32%	0.00%	12.50%	12.50%	0.0397%
BlackRock Inc	BLK	68,934	0.28%	3.06%	8.53%	11.72%	0.0325%
Ball Corp	BLL	19,215	0.08%	0.70%	6.50%	7.22%	0.0056%
Bristol-Myers Squibb Co	BMY	81,568	0.33%	3.30%	11.02%	14.50%	0.0477%
Broadridge Financial Solutions Inc	BR	11,979	0.05%	1.84%	10.00%	11.93%	0.0058%
Berkshire Hathaway Inc	BRK/B	503,471	2.03%	0.00%	-1.60%	-1.60%	-0.0325%
Boston Scientific Corp	BSX	55,730	0.22%	0.00%	33.46%	33.46%	0.0751%
BorgWarner Inc	BWA	7,850	0.03%	1.80%	5.78%	7.63%	0.0024%
Boston Properties Inc	BXP	20,510	0.08%	2.93%	6.24%	9.26%	0.0077%
Citigroup Inc	C	152,577	0.61%	3.00%	11.23%	14.40%	0.0886%
Conagra Brands Inc	CAG	11,213	0.05%	3.64%	8.00%	11.79%	0.0053%
Cardinal Health Inc	CAH	14,981	0.06%	3.92%	4.77%	8.78%	0.0053%
Caterpillar Inc	CAT	76,357	0.31%	2.64%	13.35%	16.17%	0.0497%
Chubb Ltd	CB	62,500	0.25%	2.23%	10.60%	12.95%	0.0326%
Cboe Global Markets Inc	CBOE	10,832	0.04%	1.35%	13.46%	14.90%	0.0065%
CBRE Group Inc	CBRE	17,007	0.07%	0.00%	8.55%	8.55%	0.0059%
CBS Corp	CBS	17,796	0.07%	1.63%	15.05%	16.81%	0.0121%
Crown Castle International Corp	CCI	51,959	0.21%	3.66%	16.20%	20.16%	0.0422%
Carnival Corp	CCL	38,927	0.16%	3.64%	10.93%	14.77%	0.0232%
Cadence Design Systems Inc	CDNS	17,150	0.07%	0.00%	10.35%	10.35%	0.0072%
Celanese Corp	CE	12,942	0.05%	2.33%	7.05%	9.46%	0.0049%
Celgene Corp	CELG	62,113	0.25%	0.00%	20.70%	20.70%	0.0518%
Cerner Corp	CERN	18,784	0.08%	0.00%	13.20%	13.20%	0.0100%
CF Industries Holdings Inc	CF	9,595	0.04%	2.80%	19.75%	22.83%	0.0088%
Citizens Financial Group Inc	CFG	16,514	0.07%	3.75%	16.69%	20.76%	0.0138%
Church & Dwight Co Inc	CHD	16,574	0.07%	1.37%	7.68%	9.11%	0.0061%
CH Robinson Worldwide Inc	CHRW	12,180	0.05%	2.28%	9.07%	11.45%	0.0056%
Charter Communications Inc	CHTR	89,394	0.36%	0.00%	41.16%	41.16%	0.1483%
Cigna Corp	CI	63,261	0.25%	0.02%	11.80%	11.82%	0.0301%
Cincinnati Financial Corp	CINF	13,967	N/A	2.72%	N/A	N/A	N/A
Colgate-Palmolive Co	CL	57,905	0.23%	2.57%	6.07%	8.72%	0.0203%
Clorox Co/The	CLX	20,592	0.08%	2.42%	4.91%	7.39%	0.0061%
Comerica Inc	CMA	12,992	0.05%	3.20%	13.20%	16.61%	0.0087%
Comcast Corp	CMCSA	183,166	0.74%	2.07%	11.03%	13.21%	0.0975%
CME Group Inc	CME	60,875	0.25%	3.31%	12.23%	15.74%	0.0386%
Chipotle Mexican Grill Inc	CMG	17,674	0.07%	0.00%	20.31%	20.31%	0.0145%
Cummins Inc	CMI	24,767	0.10%	2.94%	6.66%	9.70%	0.0097%
CMS Energy Corp	CMS	15,737	0.06%	2.76%	6.61%	9.45%	0.0060%
Centene Corp	CNC	24,439	0.10%	0.00%	13.68%	13.68%	0.0135%
CenterPoint Energy Inc	CNP	15,449	0.06%	3.80%	6.44%	10.36%	0.0065%
Capital One Financial Corp	COF	39,456	0.16%	1.96%	4.77%	6.78%	0.0108%
Cabot Oil & Gas Corp	COG	10,978	0.04%	1.09%	27.91%	29.16%	0.0129%
Cooper Cos Inc/The	COO	14,577	0.06%	0.02%	5.23%	5.25%	0.0031%
ConocoPhillips	COP	76,674	0.31%	1.83%	6.00%	7.89%	0.0244%
Costco Wholesale Corp	COST	102,756	0.41%	1.01%	10.09%	11.15%	0.0462%
Coty Inc	COTY	8,181	0.03%	4.59%	8.76%	13.56%	0.0045%
Campbell Soup Co	CPB	10,843	0.04%	3.92%	1.85%	5.80%	0.0025%
Capri Holdings Ltd	CPRI	6,922	0.03%	0.00%	6.73%	6.73%	0.0019%
Copart Inc	CPRT	13,471	0.05%	0.00%	20.00%	20.00%	0.0109%
salesforce.com Inc	CRM	124,524	0.50%	0.00%	24.13%	24.13%	0.1211%
Cisco Systems Inc	CSCO	234,188	0.94%	2.56%	6.84%	9.49%	0.0895%
CSX Corp	CSX	59,386	0.24%	1.25%	10.47%	11.79%	0.0282%
Cintas Corp	CTAS	21,489	0.09%	0.98%	12.02%	13.05%	0.0113%
CenturyLink Inc	CTL	13,055	0.05%	10.02%	2.50%	12.64%	0.0066%
Cognizant Technology Solutions Corp	CTSH	41,482	0.17%	1.09%	11.40%	12.55%	0.0210%
Citrix Systems Inc	CTXS	13,289	0.05%	0.00%	11.85%	11.85%	0.0063%
CVS Health Corp	CVS	72,118	0.29%	3.55%	8.22%	11.92%	0.0346%
Chevron Corp	CVX	238,097	0.96%	3.77%	6.93%	10.83%	0.1039%
Concho Resources Inc	CXO	20,772	0.08%	0.28%	18.60%	18.90%	0.0158%
Dominion Energy Inc	D	61,586	0.25%	4.76%	5.60%	10.49%	0.0260%
Delta Air Lines Inc	DAL	34,755	0.14%	2.82%	11.99%	14.98%	0.0210%
Deere & Co	DE	50,370	0.20%	1.88%	10.39%	12.37%	0.0251%
Discover Financial Services	DFS	24,025	0.10%	2.26%	9.83%	12.20%	0.0118%
Dollar General Corp	DG	29,940	0.12%	1.13%	12.85%	14.05%	0.0169%
Quest Diagnostics Inc	DGX	11,875	0.05%	2.37%	8.05%	10.51%	0.0050%
DR Horton Inc	DHI	15,221	0.06%	1.48%	13.10%	14.68%	0.0090%
Danaher Corp	DHR	91,832	0.37%	0.53%	9.01%	9.56%	0.0354%
Walt Disney Co/The	DIS	171,380	0.69%	1.55%	3.76%	5.33%	0.0368%
Discovery Inc	DISCA	19,134	0.08%	0.00%	12.30%	12.30%	0.0095%
DISH Network Corp	DISH	15,239	0.06%	0.00%	-11.00%	-11.00%	-0.0068%
Digital Realty Trust Inc	DLR	25,167	0.10%	3.72%	17.36%	21.41%	0.0217%
Dollar Tree Inc	DLTR	23,764	0.10%	0.00%	9.41%	9.41%	0.0090%
Dover Corp	DOV	13,167	0.05%	2.19%	10.97%	13.28%	0.0070%

Company	Ticker	Market Capitalization	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est.	DCF Result	Weighted DCF Result
Duke Realty Corp	DRE	10,982	0.04%	2.82%	4.50%	7.38%	0.0033%
Darden Restaurants Inc	DRI	13,668	0.06%	2.71%	10.31%	13.17%	0.0073%
DTE Energy Co	DTE	22,715	0.09%	3.06%	5.53%	8.68%	0.0079%
Duke Energy Corp	DUK	65,903	0.27%	4.19%	5.04%	9.34%	0.0248%
DaVita Inc	DVA	8,907	0.04%	0.00%	19.15%	19.15%	0.0069%
Devon Energy Corp	DVN	12,991	0.05%	1.14%	5.82%	6.99%	0.0037%
DowDuPont Inc	DWDP	124,643	0.50%	2.84%	6.17%	9.10%	0.0457%
DXC Technology Co	DXC	17,639	0.07%	1.16%	6.70%	7.90%	0.0056%
Electronic Arts Inc	EA	29,654	0.12%	0.00%	11.87%	11.87%	0.0142%
eBay Inc	EBAY	33,210	0.13%	0.70%	10.67%	11.41%	0.0153%
Ecolab Inc	ECL	50,222	0.20%	1.07%	13.43%	14.57%	0.0295%
Consolidated Edison Inc	ED	27,240	0.11%	3.49%	3.07%	6.61%	0.0073%
Equifax Inc	EFX	13,400	0.05%	1.44%	7.16%	8.65%	0.0047%
Edison International	EIX	20,826	0.08%	3.88%	5.51%	9.50%	0.0080%
Estee Lauder Cos Inc/The	EL	58,776	0.24%	1.02%	12.04%	13.12%	0.0311%
Eastman Chemical Co	EMN	10,992	0.04%	3.02%	6.73%	9.85%	0.0044%
Emerson Electric Co	EMR	41,382	0.17%	2.92%	8.95%	12.00%	0.0200%
EOG Resources Inc	EOG	51,538	0.21%	0.97%	9.90%	10.92%	0.0227%
Equinix Inc	EQIX	36,966	0.15%	2.24%	18.39%	20.83%	0.0310%
Equity Residential	EQR	27,656	0.11%	2.99%	6.71%	9.79%	0.0109%
Eversource Energy	ES	22,737	0.09%	2.99%	5.76%	8.83%	0.0081%
Essex Property Trust Inc	ESS	19,011	0.08%	2.69%	6.59%	9.36%	0.0072%
E*TRADE Financial Corp	ETFC	12,074	0.05%	1.02%	12.08%	13.16%	0.0064%
Eaton Corp PLC	ETN	34,184	0.14%	3.56%	9.23%	12.95%	0.0178%
Entergy Corp	ETR	17,946	0.07%	3.89%	-0.89%	2.99%	0.0022%
Evergy Inc	EVRG	14,685	0.06%	3.34%	6.67%	10.12%	0.0060%
Edwards Lifesciences Corp	EW	37,346	0.15%	0.00%	14.00%	14.00%	0.0211%
Exelon Corp	EXC	48,487	0.20%	2.89%	4.12%	7.07%	0.0138%
Expeditors International of Washington I	EXPD	13,049	0.05%	1.25%	7.70%	9.00%	0.0047%
Expedia Group Inc	EXPE	17,892	0.07%	1.07%	17.20%	18.37%	0.0132%
Extra Space Storage Inc	EXR	12,702	0.05%	3.58%	4.39%	8.05%	0.0041%
Ford Motor Co	F	33,632	0.14%	6.81%	-0.70%	6.08%	0.0082%
Diamondback Energy Inc	FANG	16,831	0.07%	0.63%	22.91%	23.62%	0.0160%
Fastenal Co	FAST	17,822	0.07%	2.73%	14.85%	17.79%	0.0128%
Facebook Inc	FB	473,705	1.91%	0.00%	21.88%	21.88%	0.4177%
Fortune Brands Home & Security Inc	FBHS	6,457	0.03%	1.83%	9.97%	11.88%	0.0031%
Freeport-McMoRan Inc	FCX	17,896	0.07%	1.84%	-12.55%	-10.83%	-0.0078%
FedEx Corp	FDX	46,461	0.19%	1.44%	14.25%	15.80%	0.0296%
FirstEnergy Corp	FE	21,858	0.09%	3.69%	-0.02%	3.67%	0.0032%
F5 Networks Inc	FFIV	9,136	0.04%	0.00%	8.41%	8.41%	0.0031%
Fidelity National Information Services I	FIS	35,160	0.14%	1.29%	8.10%	9.44%	0.0134%
Fiserv Inc	FISV	33,803	0.14%	0.00%	7.40%	7.40%	0.0101%
Fifth Third Bancorp	FITB	18,369	0.07%	3.42%	3.95%	7.44%	0.0055%
Foot Locker Inc	FL	6,658	0.03%	2.61%	7.31%	10.01%	0.0027%
FLIR Systems Inc	FLIR	6,800	N/A	1.36%	N/A	N/A	N/A
Fluor Corp	FLR	5,269	0.02%	2.23%	20.49%	22.94%	0.0049%
Flowserve Corp	FLS	5,800	0.02%	1.82%	13.05%	14.99%	0.0035%
FleetCor Technologies Inc	FLT	20,543	0.08%	0.00%	16.50%	16.50%	0.0137%
FMC Corp	FMC	10,165	0.04%	1.85%	9.87%	11.81%	0.0048%
Twenty-First Century Fox Inc	FOXA	96,347	0.39%	0.77%	2.66%	3.44%	0.0133%
First Republic Bank/CA	FRC	17,258	0.07%	0.73%	12.39%	13.17%	0.0092%
Federal Realty Investment Trust	FRT	9,867	0.04%	3.13%	5.91%	9.13%	0.0036%
TechnipFMC PLC	FTI	10,312	0.04%	2.27%	15.43%	17.88%	0.0074%
Fortinet Inc	FTNT	14,207	0.06%	0.00%	22.10%	22.10%	0.0127%
Fortive Corp	FTV	27,620	0.11%	0.37%	13.89%	14.28%	0.0159%
General Dynamics Corp	GD	48,940	0.20%	2.32%	10.09%	12.53%	0.0247%
General Electric Co	GE	86,703	0.35%	0.40%	1.60%	2.00%	0.0070%
Gilead Sciences Inc	GILD	83,712	0.34%	3.82%	-1.48%	2.31%	0.0078%
General Mills Inc	GIS	28,352	0.11%	4.15%	6.33%	10.62%	0.0121%
Corning Inc	GLW	27,159	0.11%	2.31%	10.39%	12.82%	0.0140%
General Motors Co	GM	53,659	0.22%	4.02%	6.03%	10.17%	0.0220%
Alphabet Inc	GOOGL	825,305	3.33%	0.00%	15.22%	15.22%	0.5063%
Genuine Parts Co	GPC	15,623	0.06%	2.89%	6.34%	9.32%	0.0059%
Global Payments Inc	GPN	21,171	0.09%	0.03%	17.00%	17.03%	0.0145%
Gap Inc/The	GPS	9,646	0.04%	3.87%	8.70%	12.74%	0.0050%
Garmin Ltd	GRMN	15,718	0.06%	2.70%	7.28%	10.07%	0.0064%
Goldman Sachs Group Inc/The	GS	75,909	0.31%	1.71%	6.74%	8.51%	0.0260%
WW Grainger Inc	GWW	16,524	0.07%	1.92%	12.47%	14.51%	0.0097%
Halliburton Co	HAL	24,405	0.10%	2.52%	30.08%	32.98%	0.0324%
Hasbro Inc	HAS	10,913	0.04%	3.14%	10.85%	14.16%	0.0062%
Huntington Bancshares Inc/OH	HBAN	14,451	0.06%	4.31%	8.20%	12.69%	0.0074%
Hanesbrands Inc	HBI	6,373	0.03%	3.55%	3.72%	7.33%	0.0019%
HCA Healthcare Inc	HCA	45,349	0.18%	1.03%	11.56%	12.64%	0.0231%
HCP Inc	HCP	14,878	0.06%	4.76%	2.57%	7.40%	0.0044%
Home Depot Inc/The	HD	205,834	0.83%	2.94%	10.72%	13.82%	0.1146%
Hess Corp	HES	17,652	0.07%	1.74%	-9.23%	-7.57%	-0.0054%
HollyFrontier Corp	HFC	8,914	0.04%	2.60%	7.07%	9.76%	0.0035%
Hartford Financial Services Group Inc/Th	HIG	17,549	0.07%	2.54%	9.50%	12.16%	0.0086%

Company	Ticker	Market Capitalization	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est.	DCF Result	Weighted DCF Result
Huntington Ingalls Industries Inc	HII	8,489	0.03%	1.65%	40.00%	41.98%	0.0144%
Hilton Worldwide Holdings Inc	HLT	25,115	0.10%	0.76%	13.26%	14.07%	0.0142%
Harley-Davidson Inc	HOG	5,839	0.02%	4.25%	8.60%	13.03%	0.0031%
Hologic Inc	HOLX	12,742	0.05%	0.00%	3.10%	3.10%	0.0016%
Honeywell International Inc	HON	113,152	0.46%	2.14%	7.88%	10.10%	0.0461%
Helmerich & Payne Inc	HP	5,968	0.02%	5.22%	96.36%	104.09%	0.0250%
Hewlett Packard Enterprise Co	HPE	22,022	0.09%	2.86%	6.09%	9.03%	0.0080%
HP Inc	HPQ	30,578	0.12%	3.18%	3.08%	6.31%	0.0078%
H&R Block Inc	HRB	4,950	0.02%	4.12%	10.00%	14.33%	0.0029%
Hormel Foods Corp	HRL	22,798	0.09%	1.96%	5.80%	7.82%	0.0072%
Harris Corp	HRS	18,954	0.08%	1.68%	7.00%	8.74%	0.0067%
Henry Schein Inc	HSIC	8,977	0.04%	0.00%	7.11%	7.11%	0.0026%
Host Hotels & Resorts Inc	HST	14,187	0.06%	4.41%	2.70%	7.17%	0.0041%
Hershey Co/The	HSY	23,102	0.09%	2.66%	7.20%	9.96%	0.0093%
Humana Inc	HUM	37,998	0.15%	0.70%	14.11%	14.86%	0.0228%
International Business Machines Corp	IBM	124,074	0.50%	4.67%	0.72%	5.41%	0.0270%
Intercontinental Exchange Inc	ICE	42,427	0.17%	1.44%	10.09%	11.60%	0.0198%
IDEXX Laboratories Inc	IDXX	18,595	0.07%	0.00%	16.24%	16.24%	0.0122%
International Flavors & Fragrances Inc	IFF	13,285	0.05%	2.28%	4.00%	6.32%	0.0034%
Illumina Inc	ILMN	45,546	0.18%	0.00%	27.09%	27.09%	0.0497%
Incyte Corp	INCY	18,151	0.07%	0.00%	47.53%	47.53%	0.0348%
IHS Markit Ltd	INFO	21,776	0.09%	0.00%	11.21%	11.21%	0.0098%
Intel Corp	INTC	244,322	0.98%	2.32%	8.54%	10.96%	0.1079%
Intuit Inc	INTU	66,875	0.27%	0.70%	16.03%	16.79%	0.0452%
International Paper Co	IP	18,215	0.07%	4.43%	6.08%	10.64%	0.0078%
Interpublic Group of Cos Inc/The	IPG	8,599	0.03%	4.22%	11.49%	15.95%	0.0055%
IPG Photonics Corp	IPGP	8,135	0.03%	0.00%	7.89%	7.89%	0.0026%
IQVIA Holdings Inc	IQV	27,825	0.11%	0.00%	16.28%	16.28%	0.0182%
Ingersoll-Rand PLC	IR	25,694	0.10%	2.05%	9.92%	12.07%	0.0125%
Iron Mountain Inc	IRM	10,003	0.04%	7.07%	5.62%	12.89%	0.0052%
Intuitive Surgical Inc	ISRG	64,396	0.26%	0.00%	12.82%	12.82%	0.0333%
Gartner Inc	IT	13,012	0.05%	0.00%	14.02%	14.02%	0.0074%
Illinois Tool Works Inc	ITW	46,979	0.19%	2.80%	7.27%	10.17%	0.0193%
Invesco Ltd	IVZ	7,852	0.03%	6.29%	6.34%	12.83%	0.0041%
JB Hunt Transport Services Inc	JBHT	11,233	0.05%	0.98%	18.78%	19.85%	0.0090%
Johnson Controls International plc	JCI	32,703	0.13%	3.03%	7.63%	10.77%	0.0142%
Jacobs Engineering Group Inc	JEC	10,298	0.04%	0.77%	13.96%	14.78%	0.0061%
Jefferies Financial Group Inc	JEF	5,874	N/A	2.57%	N/A	N/A	N/A
Jack Henry & Associates Inc	JKHY	10,592	0.04%	1.14%	11.00%	12.20%	0.0052%
Johnson & Johnson	JNJ	366,397	1.48%	2.76%	7.34%	10.20%	0.1506%
Juniper Networks Inc	JNPR	9,338	0.04%	2.81%	8.76%	11.69%	0.0044%
JPMorgan Chase & Co	JPM	348,870	1.41%	3.18%	6.77%	10.05%	0.1413%
Nordstrom Inc	JWN	7,305	0.03%	3.55%	10.55%	14.29%	0.0042%
Kellogg Co	K	18,654	0.08%	4.34%	3.05%	7.46%	0.0056%
KeyCorp	KEY	17,533	0.07%	4.26%	13.17%	17.72%	0.0125%
Keysight Technologies Inc	KEYS	16,163	0.07%	0.00%	17.00%	17.00%	0.0111%
Kraft Heinz Co/The	KHC	39,132	0.16%	4.99%	2.44%	7.48%	0.0118%
Kimco Realty Corp	KIM	7,442	0.03%	6.39%	3.26%	9.75%	0.0029%
KLA-Tencor Corp	KLAC	19,577	0.08%	2.51%	8.58%	11.20%	0.0088%
Kimberly-Clark Corp	KMB	41,359	0.17%	3.42%	6.09%	9.60%	0.0160%
Kinder Morgan Inc/DE	KMI	44,979	0.18%	5.01%	10.00%	15.26%	0.0277%
CarMax Inc	KMX	10,386	0.04%	0.00%	12.92%	12.92%	0.0054%
Coca-Cola Co/The	KO	193,665	0.78%	3.62%	6.72%	10.46%	0.0816%
Kroger Co/The	KR	19,433	0.08%	2.40%	6.75%	9.22%	0.0072%
Kohl's Corp	KSS	11,225	0.05%	3.94%	10.40%	14.55%	0.0066%
Kansas City Southern	KSU	11,517	0.05%	1.33%	8.97%	10.36%	0.0048%
Loews Corp	L	14,874	N/A	0.59%	N/A	N/A	N/A
L Brands Inc	LB	7,313	0.03%	4.52%	10.72%	15.48%	0.0046%
Leggett & Platt Inc	LEG	5,636	0.02%	3.58%	10.00%	13.76%	0.0031%
Lennar Corp	LEN	15,088	0.06%	0.34%	12.74%	13.10%	0.0080%
Laboratory Corp of America Holdings	LH	15,220	0.06%	0.00%	7.08%	7.08%	0.0043%
Linde PLC	LIN	97,284	N/A	1.77%	N/A	N/A	N/A
LKQ Corp	LKQ	8,763	0.04%	0.00%	13.05%	13.05%	0.0046%
L3 Technologies Inc	LLL	16,424	0.07%	1.65%	5.00%	6.69%	0.0044%
Eli Lilly & Co	LLY	128,330	0.52%	2.03%	13.81%	15.98%	0.0826%
Lockheed Martin Corp	LMT	83,681	0.34%	3.02%	7.61%	10.74%	0.0362%
Lincoln National Corp	LNC	12,813	0.05%	2.38%	9.00%	11.49%	0.0059%
Alliant Energy Corp	LNT	11,190	0.05%	3.00%	6.29%	9.38%	0.0042%
Lowe's Cos Inc	LOW	80,408	0.32%	2.08%	15.80%	18.04%	0.0584%
Lam Research Corp	LRCX	27,832	0.11%	2.23%	-0.42%	1.81%	0.0020%
Southwest Airlines Co	LUV	28,392	0.11%	1.35%	9.97%	11.39%	0.0130%
Lamb Weston Holdings Inc	LW	10,183	0.04%	1.13%	11.02%	12.21%	0.0050%
LyondellBasell Industries NV	LYB	32,291	0.13%	4.67%	6.80%	11.63%	0.0151%
Macy's Inc	M	7,291	0.03%	6.36%	1.67%	8.08%	0.0024%
Mastercard Inc	MA	237,159	0.96%	0.50%	19.66%	20.21%	0.1931%
Mid-America Apartment Communities Inc	MAA	12,262	0.05%	3.58%	7.00%	10.70%	0.0053%
Macerich Co/The	MAC	6,018	0.02%	7.10%	-0.09%	7.01%	0.0017%
Marriott International Inc/MD	MAR	41,548	0.17%	1.38%	10.81%	12.27%	0.0205%

Company	Ticker	Market Capitalization	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est.	DCF Result	Weighted DCF Result
Masco Corp	MAS	11,479	0.05%	1.22%	12.50%	13.79%	0.0064%
Mattel Inc	MAT	4,998	0.02%	0.00%	10.00%	10.00%	0.0020%
McDonald's Corp	MCD	141,836	0.57%	2.53%	8.52%	11.16%	0.0638%
Microchip Technology Inc	MCHP	20,403	0.08%	1.69%	12.39%	14.19%	0.0117%
McKesson Corp	MCK	22,877	0.09%	1.24%	8.08%	9.37%	0.0086%
Moody's Corp	MCO	33,361	0.13%	1.11%	8.00%	9.16%	0.0123%
Mondelez International Inc	MDLZ	69,031	0.28%	2.19%	7.33%	9.59%	0.0267%
Medtronic PLC	MDT	125,787	0.51%	2.12%	7.70%	9.90%	0.0502%
MetLife Inc	MET	43,374	0.17%	3.86%	9.27%	13.31%	0.0233%
MGM Resorts International	MGM	13,971	0.06%	1.96%	12.99%	15.08%	0.0085%
Mohawk Industries Inc	MHK	9,297	0.04%	0.00%	7.59%	7.59%	0.0028%
McCormick & Co Inc/MD	MKC	18,474	0.07%	1.63%	6.10%	7.78%	0.0058%
Martin Marietta Materials Inc	MLM	12,080	0.05%	1.01%	13.29%	14.37%	0.0070%
Marsh & McLennan Cos Inc	MMC	47,122	0.19%	1.87%	12.27%	14.26%	0.0271%
3M Co	MMM	119,812	0.48%	2.76%	7.70%	10.56%	0.0510%
Monster Beverage Corp	MNST	32,736	0.13%	0.00%	15.40%	15.40%	0.0203%
Altria Group Inc	MO	106,374	0.43%	5.79%	5.57%	11.51%	0.0493%
Mosaic Co/The	MOS	11,067	0.04%	0.67%	8.40%	9.10%	0.0041%
Marathon Petroleum Corp	MPC	40,662	0.16%	3.55%	16.14%	19.98%	0.0327%
Merck & Co Inc	MRK	210,550	0.85%	2.70%	8.76%	11.58%	0.0982%
Marathon Oil Corp	MRO	14,136	0.06%	1.16%	0.45%	1.61%	0.0009%
Morgan Stanley	MS	74,042	0.30%	3.02%	8.99%	12.15%	0.0362%
MSCI Inc	MSCI	16,051	0.06%	1.22%	9.25%	10.53%	0.0068%
Microsoft Corp	MSFT	889,286	3.58%	1.54%	11.68%	13.31%	0.4770%
Motorola Solutions Inc	MSI	23,047	0.09%	1.65%	4.10%	5.78%	0.0054%
M&T Bank Corp	MTB	23,887	0.10%	2.49%	7.98%	10.57%	0.0102%
Mettler-Toledo International Inc	MTD	17,600	0.07%	0.00%	12.67%	12.67%	0.0090%
Micron Technology Inc	MU	44,326	0.18%	0.36%	-3.30%	-2.94%	-0.0053%
Maxim Integrated Products Inc	MXIM	14,802	0.06%	3.40%	8.93%	12.48%	0.0074%
Mylan NV	MYL	14,493	0.06%	0.00%	4.86%	4.86%	0.0028%
Noble Energy Inc	NBL	11,171	0.05%	1.91%	16.07%	18.13%	0.0082%
Norwegian Cruise Line Holdings Ltd	NCLH	12,095	0.05%	0.37%	12.25%	12.64%	0.0062%
Nasdaq Inc	NDAQ	13,821	0.06%	2.23%	9.11%	11.45%	0.0064%
NextEra Energy Inc	NEE	91,445	0.37%	2.61%	4.90%	7.57%	0.0279%
Newmont Mining Corp	NEM	17,653	0.07%	1.69%	5.55%	7.29%	0.0052%
Netflix Inc	NFLX	157,813	0.64%	0.00%	32.07%	32.07%	0.2039%
NiSource Inc	NI	10,389	0.04%	2.92%	5.75%	8.75%	0.0037%
NIKE Inc	NKE	136,606	0.55%	0.98%	18.34%	19.41%	0.1068%
Nektar Therapeutics	NKTR	6,186	N/A	0.00%	N/A	N/A	N/A
Nielsen Holdings PLC	NLSN	9,579	N/A	4.78%	N/A	N/A	N/A
Northrop Grumman Corp	NOC	46,035	0.19%	1.92%	8.89%	10.90%	0.0202%
National Oilwell Varco Inc	NOV	10,153	0.04%	0.78%	77.76%	78.84%	0.0323%
NRG Energy Inc	NRG	11,709	0.05%	0.29%	38.22%	38.56%	0.0182%
Norfolk Southern Corp	NSC	48,014	0.19%	1.90%	13.78%	15.81%	0.0306%
NetApp Inc	NTAP	16,809	0.07%	2.34%	13.23%	15.73%	0.0107%
Northern Trust Corp	NTRS	20,740	0.08%	2.59%	10.65%	13.38%	0.0112%
Nucor Corp	NUE	17,874	0.07%	2.71%	0.85%	3.57%	0.0026%
NVIDIA Corp	NVDA	102,905	0.41%	0.39%	7.86%	8.27%	0.0343%
Newell Brands Inc	NWL	6,579	0.03%	5.90%	-5.93%	-0.20%	-0.0001%
News Corp	NWSA	7,414	0.03%	1.68%	-9.13%	-7.52%	-0.0022%
Realty Income Corp	O	21,642	0.09%	3.83%	4.39%	8.30%	0.0072%
ONEOK Inc	OKE	27,516	0.11%	5.37%	12.82%	18.54%	0.0206%
Omnicom Group Inc	OMC	16,882	0.07%	3.43%	3.78%	7.27%	0.0049%
Oracle Corp	ORCL	189,997	0.77%	1.57%	7.54%	9.17%	0.0702%
O'Reilly Automotive Inc	ORLY	29,001	0.12%	0.00%	14.83%	14.83%	0.0173%
Occidental Petroleum Corp	OXY	49,073	0.20%	4.79%	-0.50%	4.27%	0.0084%
Paychex Inc	PAYX	28,451	0.11%	2.88%	9.25%	12.26%	0.0141%
People's United Financial Inc	PBCT	6,555	0.03%	4.11%	2.00%	6.15%	0.0016%
PACCAR Inc	PCAR	23,455	0.09%	4.08%	5.90%	10.10%	0.0095%
Public Service Enterprise Group Inc	PEG	30,164	0.12%	3.14%	6.73%	9.97%	0.0121%
PepsiCo Inc	PEP	162,419	0.65%	3.30%	5.48%	8.87%	0.0580%
Pfizer Inc	PFE	231,954	0.93%	3.45%	5.45%	8.99%	0.0841%
Principal Financial Group Inc	PFG	14,520	0.06%	4.27%	4.16%	8.52%	0.0050%
Procter & Gamble Co/The	PG	256,262	1.03%	2.84%	6.51%	9.44%	0.0974%
Progressive Corp/The	PGR	42,981	0.17%	1.92%	9.80%	11.82%	0.0205%
Parker-Hannifin Corp	PH	22,092	0.09%	1.77%	9.52%	11.36%	0.0101%
PulteGroup Inc	PHM	7,447	0.03%	1.63%	7.17%	8.85%	0.0027%
Packaging Corp of America	PKG	9,089	0.04%	3.21%	8.25%	11.59%	0.0042%
PerkinElmer Inc	PKI	10,420	0.04%	0.31%	15.95%	16.28%	0.0068%
Prologis Inc	PLD	45,158	0.18%	2.83%	6.87%	9.79%	0.0178%
Philip Morris International Inc	PM	141,234	0.57%	5.17%	8.62%	14.01%	0.0798%
PNC Financial Services Group Inc/The	PNC	58,906	0.24%	3.15%	7.37%	10.63%	0.0252%
Pentair PLC	PNR	7,304	0.03%	1.70%	10.29%	12.08%	0.0036%
Pinnacle West Capital Corp	PNW	10,783	0.04%	3.13%	5.18%	8.38%	0.0036%
PPG Industries Inc	PPG	25,978	0.10%	1.76%	7.49%	9.32%	0.0098%
PPL Corp	PPL	23,583	0.10%	5.08%	2.53%	7.67%	0.0073%
Perrigo Co PLC	PRGO	6,542	0.03%	1.55%	1.00%	2.56%	0.0007%
Prudential Financial Inc	PRU	39,256	0.16%	4.23%	9.00%	13.42%	0.0212%

Company	Ticker	Market Capitalization	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est.	DCF Result	Weighted DCF Result
Public Storage	PSA	37,974	0.15%	3.75%	5.15%	9.00%	0.0138%
Phillips 66	PSX	44,818	0.18%	3.49%	5.70%	9.29%	0.0168%
PVH Corp	PVH	8,369	0.03%	0.14%	11.03%	11.17%	0.0038%
Quanta Services Inc	PWR	5,298	0.02%	0.11%	22.00%	22.12%	0.0047%
Pioneer Natural Resources Co	PXD	22,843	0.09%	0.31%	26.85%	27.20%	0.0250%
PayPal Holdings Inc	PYPL	118,177	0.48%	0.00%	23.55%	23.55%	0.1121%
QUALCOMM Inc	QCOM	68,503	0.28%	4.47%	11.71%	16.43%	0.0454%
Qorvo Inc	QRVO	8,553	0.03%	0.00%	11.83%	11.83%	0.0041%
Royal Caribbean Cruises Ltd	RCL	24,512	0.10%	2.38%	11.72%	14.24%	0.0141%
Everest Re Group Ltd	RE	8,910	0.04%	2.52%	10.00%	12.65%	0.0045%
Regency Centers Corp	REG	10,858	0.04%	3.57%	4.67%	8.33%	0.0036%
Regeneron Pharmaceuticals Inc	REGN	45,292	0.18%	0.00%	13.88%	13.88%	0.0253%
Regions Financial Corp	RF	16,019	0.06%	3.85%	10.88%	14.94%	0.0096%
Robert Half International Inc	RHI	7,851	0.03%	1.83%	9.25%	11.16%	0.0035%
Red Hat Inc	RHT	32,132	0.13%	0.00%	18.40%	18.40%	0.0238%
Raymond James Financial Inc	RJF	11,550	0.05%	1.58%	17.00%	18.71%	0.0087%
Ralph Lauren Corp	RL	9,496	0.04%	2.02%	6.84%	8.93%	0.0034%
ResMed Inc	RMD	14,383	0.06%	1.49%	12.50%	14.09%	0.0082%
Rockwell Automation Inc	ROK	21,438	0.09%	2.17%	8.94%	11.21%	0.0097%
Rollins Inc	ROL	13,252	0.05%	1.94%	10.00%	12.04%	0.0064%
Roper Technologies Inc	ROP	33,798	0.14%	0.56%	11.33%	11.92%	0.0162%
Ross Stores Inc	ROST	33,316	0.13%	1.18%	10.38%	11.61%	0.0156%
Republic Services Inc	RSG	25,289	0.10%	1.92%	13.01%	15.06%	0.0153%
Raytheon Co	RTN	50,224	0.20%	2.09%	9.37%	11.55%	0.0234%
SBA Communications Corp	SBAC	21,499	0.09%	0.00%	25.05%	25.05%	0.0217%
Starbucks Corp	SBUX	87,885	0.35%	2.12%	13.22%	15.47%	0.0548%
Charles Schwab Corp/The	SCHW	60,580	0.24%	1.36%	19.78%	21.28%	0.0519%
Sealed Air Corp	SEE	7,050	0.03%	1.46%	6.04%	7.55%	0.0021%
Sherwin-Williams Co/The	SHW	39,948	0.16%	1.01%	10.99%	12.05%	0.0194%
SVB Financial Group	SIVB	12,961	0.05%	0.01%	11.00%	11.01%	0.0058%
JM Smucker Co/The	SJM	12,009	0.05%	3.14%	3.20%	6.39%	0.0031%
Schlumberger Ltd	SLB	58,751	0.24%	4.72%	33.69%	39.20%	0.0928%
SL Green Realty Corp	SLG	7,714	0.03%	3.77%	-0.59%	3.17%	0.0010%
Snap-on Inc	SNA	8,654	0.03%	2.42%	7.93%	10.45%	0.0036%
Synopsys Inc	SNPS	16,340	0.07%	0.00%	14.50%	14.50%	0.0095%
Southern Co/The	SO	53,653	0.22%	4.76%	3.38%	8.21%	0.0178%
Simon Property Group Inc	SPG	54,406	0.22%	4.71%	5.21%	10.04%	0.0220%
S&P Global Inc	SPGI	50,511	0.20%	1.10%	11.05%	12.21%	0.0249%
Sempra Energy	SRE	34,151	0.14%	3.12%	10.10%	13.38%	0.0184%
SunTrust Banks Inc	STI	28,280	0.11%	3.32%	8.04%	11.49%	0.0131%
State Street Corp	STT	26,544	0.11%	2.88%	8.69%	11.70%	0.0125%
Seagate Technology PLC	STX	13,315	0.05%	5.28%	3.37%	8.74%	0.0047%
Constellation Brands Inc	STZ	32,419	0.13%	1.74%	11.12%	12.95%	0.0169%
Stanley Black & Decker Inc	SWK	19,905	0.08%	2.04%	10.50%	12.64%	0.0101%
Skyworks Solutions Inc	SWKS	14,580	0.06%	1.85%	8.87%	10.80%	0.0063%
Synchrony Financial	SYF	23,646	0.10%	2.70%	1.55%	4.28%	0.0041%
Stryker Corp	SYK	72,312	0.29%	1.16%	8.54%	9.76%	0.0284%
Symantec Corp	SYMC	14,715	0.06%	1.32%	7.50%	8.87%	0.0053%
Sysco Corp	SYY	34,027	0.14%	2.28%	12.83%	15.26%	0.0209%
AT&T Inc	T	223,418	0.90%	6.67%	4.92%	11.75%	0.1058%
Molson Coors Brewing Co	TAP	13,172	0.05%	3.36%	0.26%	3.63%	0.0019%
TransDigm Group Inc	TDG	23,268	0.09%	0.00%	11.07%	11.07%	0.0104%
TE Connectivity Ltd	TEL	28,362	0.11%	2.12%	11.18%	13.42%	0.0153%
Teleflex Inc	TFX	13,940	0.06%	0.45%	12.45%	12.93%	0.0073%
Target Corp	TGT	39,582	0.16%	3.44%	6.44%	9.99%	0.0159%
Tiffany & Co	TIF	11,770	0.05%	2.22%	10.53%	12.86%	0.0061%
TJX Cos Inc/The	TJX	63,840	0.26%	1.68%	11.57%	13.34%	0.0343%
Torchmark Corp	TMK	9,162	0.04%	0.82%	7.53%	8.38%	0.0031%
Thermo Fisher Scientific Inc	TMO	104,974	0.42%	0.28%	12.00%	12.30%	0.0520%
Tapestry Inc	TPR	9,337	0.04%	4.22%	10.58%	15.02%	0.0057%
TripAdvisor Inc	TRIP	7,126	0.03%	0.00%	11.39%	11.39%	0.0033%
T Rowe Price Group Inc	TROW	24,248	0.10%	2.93%	5.40%	8.41%	0.0082%
Travelers Cos Inc/The	TRV	35,342	0.14%	2.39%	17.72%	20.32%	0.0289%
Tractor Supply Co	TSCO	10,850	0.04%	1.49%	11.06%	12.64%	0.0055%
Tyson Foods Inc	TSN	23,823	N/A	2.41%	N/A	N/A	N/A
Total System Services Inc	TSS	16,692	0.07%	0.56%	12.14%	12.74%	0.0086%
Take-Two Interactive Software Inc	TTWO	10,586	0.04%	3.31%	10.30%	13.78%	0.0059%
Twitter Inc	TWTR	23,940	0.10%	0.00%	37.35%	37.35%	0.0360%
Texas Instruments Inc	TXN	103,943	0.42%	2.83%	10.48%	13.46%	0.0564%
Textron Inc	TXT	12,109	0.05%	0.16%	11.26%	11.42%	0.0056%
Under Armour Inc	UAA	9,379	0.04%	0.00%	33.97%	33.97%	0.0128%
United Continental Holdings Inc	UAL	21,789	0.09%	0.00%	14.17%	14.17%	0.0124%
UDR Inc	UDR	12,438	0.05%	3.02%	5.54%	8.64%	0.0043%
Universal Health Services Inc	UHS	12,187	0.05%	0.30%	10.88%	11.19%	0.0055%
Ulta Beauty Inc	ULTA	20,072	0.08%	0.00%	21.20%	21.20%	0.0171%
UnitedHealth Group Inc	UNH	241,228	0.97%	1.49%	13.99%	15.58%	0.1515%
Unum Group	UNM	7,808	0.03%	2.94%	9.00%	12.07%	0.0038%
Union Pacific Corp	UNP	119,275	0.48%	2.14%	13.86%	16.14%	0.0776%

Company	Ticker	Market Capitalization	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est.	DCF Result	Weighted DCF Result
United Parcel Service Inc	UPS	94,212	0.38%	3.50%	8.93%	12.58%	0.0478%
United Rentals Inc	URI	9,562	0.04%	0.00%	17.76%	17.76%	0.0068%
US Bancorp	USB	83,326	0.34%	3.04%	6.70%	9.84%	0.0330%
United Technologies Corp	UTX	108,585	0.44%	2.37%	9.80%	12.28%	0.0537%
Visa Inc	V	312,067	1.26%	0.64%	15.59%	16.28%	0.2048%
Varian Medical Systems Inc	VAR	12,400	0.05%	0.00%	16.10%	16.10%	0.0080%
VF Corp	VFC	33,539	0.14%	2.13%	-25.52%	-23.67%	-0.0320%
Viacom Inc	VIAB	11,572	0.05%	2.88%	4.93%	7.88%	0.0037%
Valero Energy Corp	VLO	35,531	0.14%	4.22%	19.17%	23.79%	0.0341%
Vulcan Materials Co	VMC	14,843	0.06%	1.09%	15.13%	16.31%	0.0098%
Vornado Realty Trust	VNO	12,821	0.05%	3.86%	0.74%	4.61%	0.0024%
Verisk Analytics Inc	VRSK	21,000	0.08%	0.66%	9.57%	10.26%	0.0087%
VeriSign Inc	VRSN	21,743	0.09%	0.00%	8.80%	8.80%	0.0077%
Vertex Pharmaceuticals Inc	VRTX	48,087	0.19%	0.00%	49.41%	49.41%	0.0957%
Ventas Inc	VTR	22,323	0.09%	5.12%	2.08%	7.25%	0.0065%
Verizon Communications Inc	VZ	241,270	0.97%	4.18%	2.30%	6.52%	0.0634%
Wabtec Corp	WAB	11,550	0.05%	0.00%	14.00%	14.00%	0.0065%
Waters Corp	WAT	17,518	0.07%	0.00%	11.48%	11.48%	0.0081%
Walgreens Boots Alliance Inc	WBA	59,088	0.24%	2.85%	9.43%	12.42%	0.0296%
WellCare Health Plans Inc	WCG	12,003	0.05%	0.00%	17.08%	17.08%	0.0083%
Western Digital Corp	WDC	13,990	0.06%	4.16%	2.72%	6.93%	0.0039%
WEC Energy Group Inc	WEC	24,883	0.10%	2.98%	4.89%	7.95%	0.0080%
Welltower Inc	WELL	30,277	0.12%	4.56%	6.73%	11.44%	0.0140%
Wells Fargo & Co	WFC	230,095	0.93%	3.59%	11.26%	15.05%	0.1396%
Whirlpool Corp	WHR	8,473	0.03%	3.57%	5.75%	9.42%	0.0032%
Willis Towers Watson PLC	WLTW	22,419	0.09%	1.45%	13.97%	15.52%	0.0140%
Waste Management Inc	WM	42,789	0.17%	2.00%	7.69%	9.76%	0.0168%
Williams Cos Inc/The	WMB	33,375	0.13%	5.53%	3.90%	9.54%	0.0128%
Walmart Inc	WMT	285,936	1.15%	2.17%	4.07%	6.28%	0.0724%
Westrock Co	WRK	9,589	0.04%	4.83%	4.73%	9.67%	0.0037%
Western Union Co/The	WU	7,999	0.03%	4.24%	3.89%	8.21%	0.0026%
Weyerhaeuser Co	WY	19,059	0.08%	5.30%	8.70%	14.23%	0.0109%
Wynn Resorts Ltd	WYNN	12,463	0.05%	2.61%	31.10%	34.12%	0.0171%
Cimarex Energy Co	XEC	7,105	0.03%	1.09%	66.37%	67.82%	0.0194%
Xcel Energy Inc	XEL	29,053	0.12%	2.85%	5.89%	8.83%	0.0103%
Xilinx Inc	XLNX	31,435	0.13%	1.16%	9.33%	10.54%	0.0133%
Exxon Mobil Corp	XOM	339,419	1.37%	4.21%	15.81%	20.35%	0.2783%
DENTSPLY SIRONA Inc	XRAY	10,958	0.04%	0.71%	8.57%	9.31%	0.0041%
Xerox Corp	XRX	7,262	0.03%	3.24%	-0.10%	3.14%	0.0009%
Xylem Inc/NY	XYL	13,779	0.06%	1.25%	14.00%	15.34%	0.0085%
Yum! Brands Inc	YUM	30,917	0.12%	1.67%	13.12%	14.89%	0.0186%
Zimmer Biomet Holdings Inc	ZBH	25,742	0.10%	0.79%	4.74%	5.56%	0.0058%
Zions Bancorp NA	ZION	9,152	0.04%	2.67%	6.78%	9.53%	0.0035%
Zoetis Inc	ZTS	46,398	0.19%	0.63%	15.36%	16.04%	0.0300%
Total Market Capitalization:		24,817,828					13.64%

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 Est. Required Market Return	Year Treasury (30-day average)	Implied Market Risk Premium
16.75%	3.03%	13.72%

Company	Ticker	[4] Market Capitalization	[5] Weight in Index	[6] Estimated Dividend Yield	[7] Long-Term Growth Est.	[8] DCF Result	[9] Weighted DCF Result
Agilent Technologies Inc	A	25,036	0.11%	0.84%	9.50%	10.38%	0.0118%
American Airlines Group Inc	AAL	14,839	0.07%	1.24%	1.00%	2.25%	0.0015%
Advance Auto Parts Inc	AAP	11,235	0.05%	0.16%	13.00%	13.17%	0.0067%
Apple Inc	AAPL	815,891	3.70%	1.87%	17.50%	19.53%	0.7234%
AbbVie Inc	ABBV	117,686	0.53%	5.47%	14.50%	20.37%	0.1088%
AmerisourceBergen Corp	ABC	16,108	0.07%	2.10%	8.00%	10.18%	0.0074%
ABIOMED Inc	ABMD	14,302	0.06%	0.00%	24.50%	24.50%	0.0159%
Abbott Laboratories	ABT	134,886	0.61%	1.67%	10.00%	11.75%	0.0720%
Accenture PLC	ACN	103,265	0.47%	1.89%	9.50%	11.48%	0.0538%
Adobe Inc	ADBE	124,578	0.57%	0.00%	22.00%	22.00%	0.1244%
Analog Devices Inc	ADI	38,923	0.18%	2.04%	10.50%	12.65%	0.0223%
Archer-Daniels-Midland Co	ADM	23,615	0.11%	3.32%	9.50%	12.98%	0.0139%
Automatic Data Processing Inc	ADP	65,613	0.30%	2.23%	15.00%	17.40%	0.0518%
Alliance Data Systems Corp	ADS	9,044	0.04%	1.52%	13.50%	15.12%	0.0062%
Autodesk Inc	ADSK	33,458	N/A	0.00%	N/A	N/A	N/A
Ameren Corp	AEE	17,413	0.08%	2.75%	6.50%	9.34%	0.0074%
American Electric Power Co Inc	AEP	40,175	0.18%	3.39%	4.00%	7.46%	0.0136%
AES Corp/VA	AES	11,703	N/A	3.11%	N/A	N/A	N/A
Aflac Inc	AFL	36,730	0.17%	2.30%	8.50%	10.90%	0.0182%
Allergan PLC	AGN	48,220	0.22%	2.07%	4.50%	6.62%	0.0145%
American International Group Inc	AIG	36,987	0.17%	3.06%	52.00%	55.86%	0.0938%
Apartment Investment & Management Co	AIV	7,526	0.03%	3.26%	5.50%	8.85%	0.0030%
Assurant Inc	AIZ	6,259	0.03%	2.39%	7.50%	9.98%	0.0028%
Arthur J Gallagher & Co	AJG	14,373	0.07%	2.20%	17.00%	19.39%	0.0126%
Akamai Technologies Inc	AKAM	11,972	0.05%	0.00%	17.50%	17.50%	0.0095%
Albemarle Corp	ALB	8,983	0.04%	1.74%	8.50%	10.31%	0.0042%
Align Technology Inc	ALGN	18,774	0.09%	0.00%	28.50%	28.50%	0.0243%
Alaska Air Group Inc	ALK	6,902	0.03%	2.50%	3.50%	6.04%	0.0019%
Allstate Corp/The	ALL	32,168	0.15%	2.15%	11.50%	13.77%	0.0201%
Allegion PLC	ALLE	8,325	0.04%	1.23%	10.50%	11.79%	0.0045%
Alexion Pharmaceuticals Inc	ALXN	28,595	0.13%	0.00%	24.50%	24.50%	0.0318%
Applied Materials Inc	AMAT	35,669	0.16%	2.13%	19.00%	21.33%	0.0345%
Advanced Micro Devices Inc	AMD	22,190	N/A	0.00%	N/A	N/A	N/A
AMETEK Inc	AME	18,321	0.08%	0.71%	10.50%	11.25%	0.0094%
Affiliated Managers Group Inc	AMG	6,062	0.03%	1.54%	6.50%	8.09%	0.0022%
Amgen Inc	AMGN	114,247	0.52%	3.22%	7.00%	10.33%	0.0536%
Ameriprise Financial Inc	AMP	17,465	0.08%	2.88%	16.00%	19.11%	0.0151%
American Tower Corp	AMT	80,111	0.36%	1.96%	9.50%	11.55%	0.0420%
Amazon.com Inc	AMZN	795,090	3.61%	0.00%	57.00%	57.00%	2.0570%
Arista Networks Inc	ANET	20,826	0.09%	0.00%	19.00%	19.00%	0.0180%
ANSYS Inc	ANSS	15,022	0.07%	0.00%	13.00%	13.00%	0.0089%
Anthem Inc	ANTM	75,010	0.34%	1.10%	18.00%	19.20%	0.0654%
Aon PLC	AON	39,207	0.18%	0.98%	9.50%	10.53%	0.0187%
AO Smith Corp	AOS	8,529	0.04%	1.74%	12.50%	14.35%	0.0056%
Apache Corp	APA	12,695	N/A	3.01%	N/A	N/A	N/A
Anadarko Petroleum Corp	APC	21,356	N/A	2.78%	N/A	N/A	N/A
Air Products & Chemicals Inc	APD	39,457	0.18%	2.58%	9.50%	12.20%	0.0219%
Amphenol Corp	APH	28,135	0.13%	0.99%	10.00%	11.04%	0.0141%
Aptiv PLC	APTV	21,356	0.10%	1.07%	11.00%	12.13%	0.0118%
Alexandria Real Estate Equities Inc	ARE	13,640	N/A	2.84%	N/A	N/A	N/A
Arconic Inc	ARNC	8,853	N/A	1.31%	N/A	N/A	N/A
Atmos Energy Corp	ATO	11,626	0.05%	2.18%	7.50%	9.76%	0.0052%
Activision Blizzard Inc	ATVI	31,603	0.14%	0.92%	14.50%	15.49%	0.0222%
AvalonBay Communities Inc	AVB	26,997	0.12%	3.12%	5.50%	8.71%	0.0107%
Broadcom Inc	AVGO	109,656	0.50%	3.99%	47.50%	52.44%	0.2610%
Avery Dennison Corp	AVY	9,379	0.04%	2.04%	11.50%	13.66%	0.0058%
American Water Works Co Inc	AWK	18,358	0.08%	1.91%	10.00%	12.01%	0.0100%
American Express Co	AXP	92,112	0.42%	1.53%	9.00%	10.60%	0.0443%
AutoZone Inc	AZO	23,717	0.11%	0.00%	12.50%	12.50%	0.0135%
Boeing Co/The	BA	239,862	1.09%	1.95%	17.50%	19.62%	0.2136%
Bank of America Corp	BAC	281,453	1.28%	2.10%	13.00%	15.24%	0.1946%
Baxter International Inc	BAX	39,847	0.18%	1.02%	12.50%	13.58%	0.0246%
BB&T Corp	BBT	37,808	0.17%	3.27%	10.00%	13.43%	0.0231%
Best Buy Co Inc	BBY	18,398	0.08%	3.25%	12.00%	15.45%	0.0129%
Becton Dickinson and Co	BDX	66,370	0.30%	1.27%	10.00%	11.33%	0.0341%
Franklin Resources Inc	BEN	15,979	0.07%	3.43%	9.00%	12.58%	0.0091%

Company	Ticker	Market Capitalization	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est.	DCF Result	Weighted DCF Result
Brown-Forman Corp	BF/B	23,939	0.11%	1.33%	15.50%	16.93%	0.0184%
Brighthouse Financial Inc	BHF	N/A	N/A	0.00%	N/A	N/A	N/A
Baker Hughes a GE Co	BHGE	10,733	N/A	2.76%	N/A	N/A	N/A
Biogen Inc	BIIB	63,526	0.29%	0.00%	6.50%	6.50%	0.0187%
Bank of New York Mellon Corp/The	BK	50,655	0.23%	2.19%	9.00%	11.29%	0.0260%
Booking Holdings Inc	BKNG	80,430	0.37%	0.00%	14.00%	14.00%	0.0511%
BlackRock Inc	BLK	67,219	0.31%	3.12%	9.00%	12.26%	0.0374%
Ball Corp	BLL	18,332	0.08%	0.73%	22.00%	22.81%	0.0190%
Bristol-Myers Squibb Co	BMY	84,075	0.38%	3.18%	13.50%	16.89%	0.0645%
Broadridge Financial Solutions Inc	BR	11,410	0.05%	2.04%	11.00%	13.15%	0.0068%
Berkshire Hathaway Inc	BRK/B	-	N/A	0.00%	N/A	N/A	N/A
Boston Scientific Corp	BSX	54,781	0.25%	0.00%	17.00%	17.00%	0.0423%
BorgWarner Inc	BWA	8,044	0.04%	1.76%	8.00%	9.83%	0.0036%
Boston Properties Inc	BXP	20,442	0.09%	2.94%	3.50%	6.49%	0.0060%
Citigroup Inc	C	151,168	0.69%	3.20%	8.50%	11.84%	0.0812%
Conagra Brands Inc	CAG	10,864	0.05%	3.80%	4.50%	8.39%	0.0041%
Cardinal Health Inc	CAH	14,155	0.06%	4.11%	10.00%	14.32%	0.0092%
Caterpillar Inc	CAT	78,366	0.36%	2.59%	17.00%	19.81%	0.0705%
Chubb Ltd	CB	61,179	0.28%	2.20%	8.50%	10.79%	0.0300%
Cboe Global Markets Inc	CBOE	10,351	0.05%	1.34%	17.00%	18.45%	0.0087%
CBRE Group Inc	CBRE	16,996	0.08%	0.00%	10.50%	10.50%	0.0081%
CBS Corp	CBS	18,428	0.08%	1.47%	10.50%	12.05%	0.0101%
Crown Castle International Corp	CCI	50,107	0.23%	3.81%	10.50%	14.51%	0.0330%
Carnival Corp	CCL	38,766	0.18%	3.61%	13.50%	17.35%	0.0305%
Cadence Design Systems Inc	CDNS	16,581	0.08%	0.00%	12.50%	12.50%	0.0094%
Celanese Corp	CE	13,764	0.06%	2.36%	10.00%	12.48%	0.0078%
Celgene Corp	CELG	59,910	0.27%	0.00%	14.50%	14.50%	0.0394%
Cerner Corp	CERN	18,250	0.08%	0.00%	7.50%	7.50%	0.0062%
CF Industries Holdings Inc	CF	9,336	0.04%	3.23%	48.50%	52.51%	0.0223%
Citizens Financial Group Inc	CFG	16,556	0.08%	3.67%	12.50%	16.40%	0.0123%
Church & Dwight Co Inc	CHD	16,203	0.07%	1.39%	10.00%	11.46%	0.0084%
CH Robinson Worldwide Inc	CHRW	12,071	0.05%	2.29%	9.50%	11.90%	0.0065%
Charter Communications Inc	CHTR	76,627	0.35%	0.00%	16.00%	16.00%	0.0556%
Cigna Corp	CI	39,893	0.18%	0.02%	15.50%	15.52%	0.0281%
Cincinnati Financial Corp	CINF	13,763	0.06%	2.65%	7.00%	9.74%	0.0061%
Colgate-Palmolive Co	CL	56,383	0.26%	2.57%	10.50%	13.20%	0.0338%
Clorox Co/The	CLX	20,124	0.09%	2.44%	7.50%	10.03%	0.0092%
Comerica Inc	CMA	13,740	0.06%	3.24%	15.50%	18.99%	0.0118%
Comcast Corp	CMCSA	173,707	0.79%	2.19%	12.00%	14.32%	0.1129%
CME Group Inc	CME	58,626	0.27%	1.74%	4.50%	6.28%	0.0167%
Chipotle Mexican Grill Inc	CMG	16,940	0.08%	0.00%	16.50%	16.50%	0.0127%
Cummins Inc	CMI	24,764	0.11%	2.96%	8.00%	11.08%	0.0125%
CMS Energy Corp	CMS	15,382	0.07%	2.87%	7.00%	9.97%	0.0070%
Centene Corp	CNC	23,276	0.11%	0.00%	15.50%	15.50%	0.0164%
CenterPoint Energy Inc	CNP	15,051	0.07%	3.86%	12.50%	16.60%	0.0113%
Capital One Financial Corp	COF	38,499	0.17%	1.97%	10.00%	12.07%	0.0211%
Cabot Oil & Gas Corp	COG	10,902	N/A	1.12%	N/A	N/A	N/A
Cooper Cos Inc/The	COO	14,218	0.06%	0.02%	14.50%	14.52%	0.0094%
ConocoPhillips	COP	78,227	N/A	1.80%	N/A	N/A	N/A
Costco Wholesale Corp	COST	95,506	0.43%	1.12%	8.50%	9.67%	0.0419%
Coty Inc	COTY	8,158	0.04%	4.60%	9.00%	13.81%	0.0051%
Campbell Soup Co	CPB	10,812	N/A	3.90%	N/A	N/A	N/A
Capri Holdings Ltd	CPRI	6,630	0.03%	0.00%	7.50%	7.50%	0.0023%
Copart Inc	CPRT	13,210	0.06%	0.00%	13.00%	13.00%	0.0078%
salesforce.com Inc	CRM	119,034	0.54%	0.00%	65.00%	65.00%	0.3512%
Cisco Systems Inc	CSCO	226,907	1.03%	2.73%	8.00%	10.84%	0.1116%
CSX Corp	CSX	60,815	0.28%	1.33%	16.50%	17.94%	0.0495%
Cintas Corp	CTAS	21,291	0.10%	1.11%	15.50%	16.70%	0.0161%
CenturyLink Inc	CTL	13,086	0.06%	8.26%	0.50%	8.78%	0.0052%
Cognizant Technology Solutions Corp	CTSH	41,951	0.19%	1.11%	10.00%	11.17%	0.0213%
Citrix Systems Inc	CTXS	13,852	0.06%	1.36%	7.50%	8.91%	0.0056%
CVS Health Corp	CVS	53,355	0.24%	3.82%	8.00%	11.97%	0.0290%
Chevron Corp	CVX	233,000	1.06%	3.90%	25.00%	29.39%	0.3108%
Concho Resources Inc	CXO	20,519	0.09%	0.49%	30.00%	30.56%	0.0285%
Dominion Energy Inc	D	49,859	0.23%	4.82%	6.50%	11.48%	0.0260%
Delta Air Lines Inc	DAL	34,000	0.15%	3.01%	9.50%	12.65%	0.0195%
Deere & Co	DE	50,328	0.23%	1.92%	14.00%	16.05%	0.0367%
Discover Financial Services	DFS	23,624	0.11%	2.29%	8.00%	10.38%	0.0111%
Dollar General Corp	DG	31,252	0.14%	0.98%	13.00%	14.04%	0.0199%
Quest Diagnostics Inc	DGX	11,236	0.05%	2.55%	8.50%	11.16%	0.0057%
DR Horton Inc	DHI	15,139	0.07%	1.48%	8.00%	9.54%	0.0066%
Danaher Corp	DHR	87,222	0.40%	0.51%	10.50%	11.04%	0.0437%
Walt Disney Co/The	DIS	171,015	0.78%	1.54%	7.00%	8.59%	0.0667%
Discovery Inc	DISCA	14,878	0.07%	0.00%	17.00%	17.00%	0.0115%
DISH Network Corp	DISH	15,052	0.07%	0.00%	-2.00%	-2.00%	-0.0014%
Digital Realty Trust Inc	DLR	23,146	0.11%	3.84%	6.50%	10.46%	0.0110%
Dollar Tree Inc	DLTR	24,549	0.11%	0.00%	17.50%	17.50%	0.0195%
Dover Corp	DOV	13,195	0.06%	2.13%	13.00%	15.27%	0.0091%

Company	Ticker	Market Capitalization	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est.	DCF Result	Weighted DCF Result
Duke Realty Corp	DRE	10,563	0.05%	2.97%	7.00%	10.07%	0.0048%
Darden Restaurants Inc	DRI	13,392	0.06%	2.97%	12.00%	15.15%	0.0092%
DTE Energy Co	DTE	22,286	0.10%	3.18%	5.00%	8.26%	0.0084%
Duke Energy Corp	DUK	63,871	0.29%	4.26%	5.50%	9.88%	0.0286%
DaVita Inc	DVA	8,389	0.04%	0.00%	9.50%	9.50%	0.0036%
Devon Energy Corp	DVN	13,275	0.06%	1.28%	19.00%	20.40%	0.0123%
DowDuPont Inc	DWDP	125,071	N/A	3.08%	N/A	N/A	N/A
DXC Technology Co	DXC	17,375	0.08%	1.18%	14.00%	15.26%	0.0120%
Electronic Arts Inc	EA	29,907	0.14%	0.00%	11.50%	11.50%	0.0156%
eBay Inc	EBAY	34,870	0.16%	1.55%	14.50%	16.16%	0.0256%
Ecolab Inc	ECL	48,993	0.22%	1.09%	9.00%	10.14%	0.0225%
Consolidated Edison Inc	ED	26,752	0.12%	3.59%	3.00%	6.64%	0.0081%
Equifax Inc	EFX	13,110	0.06%	1.44%	7.50%	8.99%	0.0054%
Edison International	EIX	20,265	0.09%	3.96%	4.50%	8.55%	0.0079%
Estee Lauder Cos Inc/The	EL	56,233	0.26%	1.12%	12.50%	13.69%	0.0349%
Eastman Chemical Co	EMN	11,188	0.05%	3.10%	9.50%	12.75%	0.0065%
Emerson Electric Co	EMR	41,443	0.19%	2.93%	14.00%	17.14%	0.0322%
EOG Resources Inc	EOG	52,968	N/A	1.01%	N/A	N/A	N/A
Equinix Inc	EQIX	34,137	0.15%	2.44%	25.50%	28.25%	0.0438%
Equity Residential	EQR	27,024	0.12%	2.94%	-15.00%	-12.28%	-0.0151%
Eversource Energy	ES	21,989	0.10%	3.08%	5.50%	8.66%	0.0086%
Essex Property Trust Inc	ESS	18,646	0.08%	2.76%	0.50%	3.27%	0.0028%
E*TRADE Financial Corp	ETFC	12,127	0.06%	1.19%	26.00%	27.34%	0.0151%
Eaton Corp PLC	ETN	34,642	0.16%	3.55%	9.00%	12.71%	0.0200%
Entergy Corp	ETR	17,418	0.08%	3.99%	0.50%	4.50%	0.0036%
Evergy Inc	EVRG	14,143	N/A	3.50%	N/A	N/A	N/A
Edwards Lifesciences Corp	EW	35,748	0.16%	0.00%	15.00%	15.00%	0.0243%
Exelon Corp	EXC	46,948	0.21%	2.99%	7.50%	10.60%	0.0226%
Expeditors International of Washington I	EXPD	12,830	0.06%	1.21%	8.50%	9.76%	0.0057%
Expedia Group Inc	EXPE	18,378	0.08%	1.04%	20.00%	21.14%	0.0176%
Extra Space Storage Inc	EXR	12,214	0.06%	3.67%	5.00%	8.76%	0.0049%
Ford Motor Co	F	33,733	0.15%	7.08%	0.50%	7.60%	0.0116%
Diamondback Energy Inc	FANG	9,646	N/A	0.77%	N/A	N/A	N/A
Fastenal Co	FAST	17,660	0.08%	2.80%	11.50%	14.46%	0.0116%
Facebook Inc	FB	482,697	2.19%	0.00%	26.00%	26.00%	0.5696%
Fortune Brands Home & Security Inc	FBHS	6,510	0.03%	1.91%	13.50%	15.54%	0.0046%
Freeport-McMoRan Inc	FCX	17,837	N/A	1.95%	N/A	N/A	N/A
FedEx Corp	FDX	45,124	0.20%	1.71%	7.50%	9.27%	0.0190%
FirstEnergy Corp	FE	20,857	0.09%	3.78%	6.50%	10.40%	0.0098%
F5 Networks Inc	FFIV	9,549	0.04%	0.00%	12.00%	12.00%	0.0052%
Fidelity National Information Services I	FIS	34,653	0.16%	1.33%	15.50%	16.93%	0.0266%
Fiserv Inc	FISV	34,089	0.15%	0.00%	13.50%	13.50%	0.0209%
Fifth Third Bancorp	FITB	17,439	0.08%	3.53%	7.00%	10.65%	0.0084%
Foot Locker Inc	FL	7,044	0.03%	2.45%	8.00%	10.55%	0.0034%
FLIR Systems Inc	FLIR	6,781	0.03%	1.36%	13.50%	14.95%	0.0046%
Fluor Corp	FLR	5,079	0.02%	2.31%	8.50%	10.91%	0.0025%
Flowserve Corp	FLS	5,624	0.03%	1.76%	7.50%	9.33%	0.0024%
FleetCor Technologies Inc	FLT	20,167	0.09%	0.00%	14.50%	14.50%	0.0133%
FMC Corp	FMC	10,479	0.05%	2.06%	22.50%	24.79%	0.0118%
Twenty-First Century Fox Inc	FOXA	93,942	0.43%	0.71%	12.50%	13.25%	0.0565%
First Republic Bank/CA	FRC	16,728	0.08%	0.71%	11.50%	12.25%	0.0093%
Federal Realty Investment Trust	FRT	9,674	0.04%	3.10%	3.50%	6.65%	0.0029%
TechnipFMC PLC	FTI	N/A	N/A	0.00%	N/A	N/A	N/A
Fortinet Inc	FTNT	14,046	0.06%	0.00%	39.50%	39.50%	0.0252%
Fortive Corp	FTV	28,355	N/A	0.35%	N/A	N/A	N/A
General Dynamics Corp	GD	48,022	0.22%	2.45%	6.00%	8.52%	0.0186%
General Electric Co	GE	82,197	N/A	0.42%	N/A	N/A	N/A
Gilead Sciences Inc	GILD	80,914	0.37%	4.03%	-6.50%	-2.60%	-0.0096%
General Mills Inc	GIS	27,687	0.13%	4.27%	3.00%	7.33%	0.0092%
Corning Inc	GLW	26,768	0.12%	2.36%	15.50%	18.04%	0.0219%
General Motors Co	GM	53,256	0.24%	4.10%	3.00%	7.16%	0.0173%
Alphabet Inc	GOOGL	N/A	N/A	0.00%	N/A	N/A	N/A
Genuine Parts Co	GPC	15,681	0.07%	2.85%	8.50%	11.47%	0.0082%
Global Payments Inc	GPN	20,544	0.09%	0.03%	20.00%	20.03%	0.0187%
Gap Inc/The	GPS	10,207	0.05%	3.63%	7.00%	10.76%	0.0050%
Garmin Ltd	GRMN	15,727	0.07%	2.55%	10.50%	13.18%	0.0094%
Goldman Sachs Group Inc/The	GS	71,853	0.33%	1.66%	9.50%	11.24%	0.0367%
WW Grainger Inc	GWW	16,766	0.08%	1.83%	9.50%	11.42%	0.0087%
Halliburton Co	HAL	24,467	N/A	2.58%	N/A	N/A	N/A
Hasbro Inc	HAS	10,986	0.05%	3.14%	8.00%	11.27%	0.0056%
Huntington Bancshares Inc/OH	HBAN	14,532	0.07%	4.24%	12.50%	17.01%	0.0112%
Hanesbrands Inc	HBI	6,611	0.03%	3.27%	4.00%	7.34%	0.0022%
HCA Healthcare Inc	HCA	43,444	0.20%	1.26%	12.00%	13.34%	0.0263%
HCP Inc	HCP	14,271	0.06%	5.00%	35.50%	41.39%	0.0268%
Home Depot Inc/The	HD	206,419	0.94%	2.98%	12.50%	15.67%	0.1468%
Hess Corp	HES	16,771	N/A	1.77%	N/A	N/A	N/A
HollyFrontier Corp	HFC	8,693	0.04%	2.73%	22.50%	25.54%	0.0101%
Hartford Financial Services Group Inc/Th	HIG	17,231	0.08%	2.50%	13.00%	15.66%	0.0122%

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Huntington Ingalls Industries Inc	HII	8,441	0.04%	1.71%	7.00%	8.77%	0.0034%
Hilton Worldwide Holdings Inc	HLT	24,624	0.11%	0.72%	9.00%	9.75%	0.0109%
Harley-Davidson Inc	HOG	6,100	0.03%	4.00%	9.00%	13.18%	0.0036%
Hologic Inc	HOLX	12,513	0.06%	0.00%	18.50%	18.50%	0.0105%
Honeywell International Inc	HON	112,879	0.51%	2.15%	9.00%	11.25%	0.0576%
Helmerich & Payne Inc	HP	5,969	0.03%	5.21%	56.50%	63.18%	0.0171%
Hewlett Packard Enterprise Co	HPE	21,593	0.10%	2.87%	7.50%	10.48%	0.0103%
HP Inc	HPQ	28,971	0.13%	3.40%	9.50%	13.06%	0.0172%
H&R Block Inc	HRB	4,966	0.02%	4.26%	8.50%	12.94%	0.0029%
Hormel Foods Corp	HRL	23,204	0.11%	1.93%	9.00%	11.02%	0.0116%
Harris Corp	HRS	18,989	0.09%	1.70%	13.50%	15.31%	0.0132%
Henry Schein Inc	HSIC	8,750	0.04%	0.00%	8.50%	8.50%	0.0034%
Host Hotels & Resorts Inc	HST	14,324	N/A	4.28%	N/A	N/A	N/A
Hershey Co/The	HSY	23,474	0.11%	2.58%	6.50%	9.16%	0.0098%
Humana Inc	HUM	36,826	0.17%	0.82%	13.50%	14.38%	0.0240%
International Business Machines Corp	IBM	123,014	N/A	4.82%	N/A	N/A	N/A
Intercontinental Exchange Inc	ICE	42,054	0.19%	1.49%	12.50%	14.08%	0.0269%
IDEXX Laboratories Inc	IDXX	17,646	0.08%	0.00%	15.00%	15.00%	0.0120%
International Flavors & Fragrances Inc	IFF	11,420	0.05%	2.43%	8.00%	10.53%	0.0055%
Illumina Inc	ILMN	42,933	0.19%	0.00%	15.50%	15.50%	0.0302%
Incyte Corp	INCY	17,648	N/A	0.00%	N/A	N/A	N/A
IHS Markit Ltd	INFO	21,020	0.10%	0.00%	15.50%	15.50%	0.0148%
Intel Corp	INTC	240,066	1.09%	2.40%	12.50%	15.05%	0.1640%
Intuit Inc	INTU	63,593	0.29%	0.77%	14.50%	15.33%	0.0442%
International Paper Co	IP	18,371	0.08%	4.36%	15.50%	20.20%	0.0168%
Interpublic Group of Cos Inc/The	IPG	8,741	0.04%	4.21%	11.50%	15.95%	0.0063%
IPG Photonics Corp	IPGP	7,835	0.04%	0.00%	10.50%	10.50%	0.0037%
IQVIA Holdings Inc	IQV	27,239	0.12%	0.00%	12.50%	12.50%	0.0155%
Ingersoll-Rand PLC	IR	25,639	0.12%	2.03%	13.50%	15.67%	0.0182%
Iron Mountain Inc	IRM	9,981	0.05%	7.00%	6.50%	13.73%	0.0062%
Intuitive Surgical Inc	ISRG	60,887	0.28%	0.00%	15.00%	15.00%	0.0415%
Gartner Inc	IT	12,879	0.06%	0.00%	13.50%	13.50%	0.0079%
Illinois Tool Works Inc	ITW	46,701	0.21%	2.84%	10.00%	12.98%	0.0275%
Invesco Ltd	IVZ	7,675	0.03%	6.43%	4.00%	10.56%	0.0037%
JB Hunt Transport Services Inc	JBHT	11,125	0.05%	1.02%	11.50%	12.58%	0.0064%
Johnson Controls International plc	JCI	32,556	0.15%	2.92%	6.00%	9.01%	0.0133%
Jacobs Engineering Group Inc	JEC	10,124	0.05%	0.94%	13.00%	14.00%	0.0064%
Jefferies Financial Group Inc	JEF	6,257	0.03%	2.65%	20.50%	23.42%	0.0067%
Jack Henry & Associates Inc	JKHY	10,109	0.05%	1.22%	11.50%	12.79%	0.0059%
Johnson & Johnson	JNJ	370,919	1.68%	2.71%	10.50%	13.35%	0.2248%
Juniper Networks Inc	JNPR	8,989	0.04%	2.93%	5.00%	8.00%	0.0033%
JPMorgan Chase & Co	JPM	342,418	1.55%	3.15%	9.50%	12.80%	0.1989%
Nordstrom Inc	JWN	7,558	0.03%	3.31%	7.00%	10.43%	0.0036%
Kellogg Co	K	18,842	0.09%	4.16%	5.50%	9.77%	0.0084%
KeyCorp	KEY	17,273	0.08%	4.07%	13.00%	17.33%	0.0136%
Keysight Technologies Inc	KEYS	15,893	0.07%	0.00%	16.00%	16.00%	0.0115%
Kraft Heinz Co/The	KHC	38,874	0.18%	5.02%	9.50%	14.76%	0.0260%
Kimco Realty Corp	KIM	7,402	0.03%	6.56%	-0.50%	6.04%	0.0020%
KLA-Tencor Corp	KLAC	17,351	0.08%	2.62%	10.50%	13.26%	0.0104%
Kimberly-Clark Corp	KMB	39,737	0.18%	3.58%	10.50%	14.27%	0.0257%
Kinder Morgan Inc/DE	KMI	44,881	0.20%	4.03%	34.50%	39.23%	0.0799%
CarMax Inc	KMX	10,259	0.05%	0.00%	11.50%	11.50%	0.0054%
Coca-Cola Co/The	KO	192,712	0.87%	3.67%	6.50%	10.29%	0.0900%
Kroger Co/The	KR	20,437	0.09%	2.42%	5.00%	7.48%	0.0069%
Kohl's Corp	KSS	11,380	0.05%	3.89%	11.00%	15.10%	0.0078%
Kansas City Southern	KSU	11,306	0.05%	1.29%	12.00%	13.37%	0.0069%
Loews Corp	L	14,746	0.07%	0.53%	16.50%	17.07%	0.0114%
L Brands Inc	LB	7,230	0.03%	4.56%	-4.50%	-0.04%	0.0000%
Leggett & Platt Inc	LEG	5,780	0.03%	3.43%	9.00%	12.58%	0.0033%
Lennar Corp	LEN	15,418	0.07%	0.34%	12.00%	12.36%	0.0086%
Laboratory Corp of America Holdings	LH	14,785	0.07%	0.00%	8.50%	8.50%	0.0057%
Linde PLC	LIN	-	N/A	2.09%	N/A	N/A	N/A
LKQ Corp	LKQ	8,846	0.04%	0.00%	10.50%	10.50%	0.0042%
L3 Technologies Inc	LLL	16,349	0.07%	1.64%	7.00%	8.70%	0.0065%
Eli Lilly & Co	LLY	133,835	0.61%	2.04%	12.00%	14.16%	0.0860%
Lockheed Martin Corp	LMT	85,146	0.39%	2.97%	14.00%	17.18%	0.0664%
Lincoln National Corp	LNC	12,432	0.06%	2.52%	10.50%	13.15%	0.0074%
Alliant Energy Corp	LNT	10,904	0.05%	3.07%	6.50%	9.67%	0.0048%
Lowe's Cos Inc	LOW	81,172	0.37%	2.09%	13.00%	15.23%	0.0561%
Lam Research Corp	LRCX	25,736	0.12%	2.63%	13.00%	15.80%	0.0185%
Southwest Airlines Co	LUV	28,973	0.13%	1.22%	11.50%	12.79%	0.0168%
Lamb Weston Holdings Inc	LW	10,329	N/A	1.14%	N/A	N/A	N/A
LyondellBasell Industries NV	LYB	33,727	0.15%	4.59%	5.50%	10.22%	0.0156%
Macy's Inc	M	7,164	0.03%	6.48%	5.00%	11.64%	0.0038%
Mastercard Inc	MA	230,194	1.04%	0.59%	16.00%	16.64%	0.1738%
Mid-America Apartment Communities Inc	MAA	11,930	0.05%	3.66%	-4.50%	-0.92%	-0.0005%
Macerich Co/The	MAC	5,999	0.03%	7.10%	8.00%	15.38%	0.0042%
Marriott International Inc/MD	MAR	41,693	0.19%	1.34%	12.50%	13.92%	0.0263%

Company	Ticker	Market Capitalization	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est.	DCF Result	Weighted DCF Result
Masco Corp	MAS	11,453	0.05%	1.23%	14.50%	15.82%	0.0082%
Mattel Inc	MAT	5,001	0.02%	0.00%	22.00%	22.00%	0.0050%
McDonald's Corp	MCD	139,163	0.63%	2.62%	9.50%	12.24%	0.0773%
Microchip Technology Inc	MCHP	20,012	0.09%	1.78%	15.00%	16.91%	0.0154%
McKesson Corp	MCK	21,558	0.10%	1.39%	9.00%	10.45%	0.0102%
Moody's Corp	MCO	32,451	0.15%	1.18%	11.50%	12.75%	0.0188%
Mondelez International Inc	MDLZ	68,206	0.31%	2.31%	9.50%	11.92%	0.0369%
Medtronic PLC	MDT	122,101	0.55%	2.33%	7.50%	9.92%	0.0550%
MetLife Inc	MET	43,728	0.20%	3.93%	7.00%	11.07%	0.0220%
MGM Resorts International	MGM	14,070	0.06%	1.97%	31.00%	33.28%	0.0212%
Mohawk Industries Inc	MHK	9,669	0.04%	0.00%	4.50%	4.50%	0.0020%
McCormick & Co Inc/MD	MKC	17,858	0.08%	1.68%	10.00%	11.76%	0.0095%
Martin Marietta Materials Inc	MLM	12,313	0.06%	0.99%	13.00%	14.05%	0.0079%
Marsh & McLennan Cos Inc	MMC	45,238	0.21%	1.85%	9.00%	10.93%	0.0224%
3M Co	MMM	116,376	0.53%	2.88%	9.00%	12.01%	0.0634%
Monster Beverage Corp	MNST	34,056	0.15%	0.00%	15.00%	15.00%	0.0232%
Altria Group Inc	MO	102,586	0.47%	5.85%	10.50%	16.66%	0.0776%
Mosaic Co/The	MOS	10,762	0.05%	0.72%	12.00%	12.76%	0.0062%
Marathon Petroleum Corp	MPC	26,537	0.12%	3.60%	13.50%	17.34%	0.0209%
Merck & Co Inc	MRK	213,896	0.97%	2.74%	5.50%	8.32%	0.0807%
Marathon Oil Corp	MRO	14,129	N/A	1.31%	N/A	N/A	N/A
Morgan Stanley	MS	71,051	0.32%	2.92%	11.00%	14.08%	0.0454%
MSCI Inc	MSCI	16,129	0.07%	1.44%	19.50%	21.08%	0.0154%
Microsoft Corp	MSFT	848,126	3.85%	1.67%	15.00%	16.80%	0.6465%
Motorola Solutions Inc	MSI	22,807	0.10%	1.64%	12.50%	14.24%	0.0147%
M&T Bank Corp	MTB	23,713	0.11%	2.39%	13.00%	15.55%	0.0167%
Mettler-Toledo International Inc	MTD	17,043	0.08%	0.00%	10.00%	10.00%	0.0077%
Micron Technology Inc	MU	42,370	0.19%	0.00%	7.50%	7.50%	0.0144%
Maxim Integrated Products Inc	MXIM	14,318	0.06%	3.51%	11.50%	15.21%	0.0099%
Mylan NV	MYL	13,829	0.06%	0.00%	14.00%	14.00%	0.0088%
Noble Energy Inc	NBL	10,863	N/A	1.94%	N/A	N/A	N/A
Norwegian Cruise Line Holdings Ltd	NCLH	12,114	0.05%	0.00%	16.50%	16.50%	0.0091%
Nasdaq Inc	NDAQ	14,095	0.06%	2.05%	9.50%	11.65%	0.0075%
NextEra Energy Inc	NEE	89,820	0.41%	2.66%	9.00%	11.78%	0.0480%
Newmont Mining Corp	NEM	17,695	0.08%	1.69%	5.00%	6.73%	0.0054%
Netflix Inc	NFLX	153,764	0.70%	0.00%	47.00%	47.00%	0.3280%
NiSource Inc	NI	9,900	0.04%	2.94%	15.00%	18.16%	0.0082%
NIKE Inc	NKE	134,455	0.61%	1.03%	16.00%	17.11%	0.1044%
Nektar Therapeutics	NKTR	6,199	N/A	0.00%	N/A	N/A	N/A
Nielsen Holdings PLC	NLSN	9,276	0.04%	5.36%	5.00%	10.49%	0.0044%
Northrop Grumman Corp	NOC	47,163	0.21%	1.74%	9.50%	11.32%	0.0242%
National Oilwell Varco Inc	NOV	10,189	0.05%	0.75%	41.50%	42.41%	0.0196%
NRG Energy Inc	NRG	11,957	N/A	0.29%	N/A	N/A	N/A
Norfolk Southern Corp	NSC	48,671	0.22%	1.93%	13.50%	15.56%	0.0344%
NetApp Inc	NTAP	15,675	0.07%	2.52%	20.50%	23.28%	0.0166%
Northern Trust Corp	NTRS	19,921	0.09%	2.67%	10.00%	12.80%	0.0116%
Nucor Corp	NUE	18,525	0.08%	2.71%	21.50%	24.50%	0.0206%
NVIDIA Corp	NVDA	91,049	0.41%	0.43%	23.00%	23.48%	0.0970%
Newell Brands Inc	NWL	7,597	0.03%	5.94%	9.50%	15.72%	0.0054%
News Corp	NWSA	7,545	N/A	1.55%	N/A	N/A	N/A
Realty Income Corp	O	19,742	0.09%	3.90%	4.50%	8.49%	0.0076%
ONEOK Inc	OKE	27,104	0.12%	5.46%	18.50%	24.47%	0.0301%
Omnicom Group Inc	OMC	16,687	0.08%	3.49%	7.00%	10.61%	0.0080%
Oracle Corp	ORCL	190,971	0.87%	1.45%	9.50%	11.02%	0.0955%
O'Reilly Automotive Inc	ORLY	29,200	0.13%	0.00%	13.00%	13.00%	0.0172%
Occidental Petroleum Corp	OXY	49,567	N/A	4.78%	N/A	N/A	N/A
Paychex Inc	PAYX	27,363	0.12%	3.26%	11.00%	14.44%	0.0179%
People's United Financial Inc	PBCT	5,854	0.03%	4.15%	11.00%	15.38%	0.0041%
PACCAR Inc	PCAR	23,479	0.11%	4.92%	7.00%	12.09%	0.0129%
Public Service Enterprise Group Inc	PEG	29,736	0.13%	3.22%	4.50%	7.79%	0.0105%
PepsiCo Inc	PEP	163,933	0.74%	3.20%	7.50%	10.82%	0.0805%
Pfizer Inc	PFE	239,254	1.09%	3.48%	14.00%	17.72%	0.1925%
Principal Financial Group Inc	PFG	14,180	0.06%	4.32%	6.50%	10.96%	0.0071%
Procter & Gamble Co/The	PG	246,531	1.12%	2.92%	10.50%	13.57%	0.1519%
Progressive Corp/The	PGR	42,111	0.19%	0.55%	20.00%	20.61%	0.0394%
Parker-Hannifin Corp	PH	22,040	0.10%	1.78%	14.00%	15.90%	0.0159%
PulteGroup Inc	PHM	7,629	0.03%	1.60%	15.50%	17.22%	0.0060%
Packaging Corp of America	PKG	9,227	0.04%	3.24%	9.50%	12.89%	0.0054%
PerkinElmer Inc	PKI	10,358	0.05%	0.30%	11.50%	11.82%	0.0056%
Prologis Inc	PLD	36,998	0.17%	3.05%	9.00%	12.19%	0.0205%
Philip Morris International Inc	PM	135,197	0.61%	5.24%	7.50%	12.94%	0.0794%
PNC Financial Services Group Inc/The	PNC	58,207	0.26%	3.02%	9.50%	12.66%	0.0335%
Pentair PLC	PNR	7,248	0.03%	1.73%	5.50%	7.28%	0.0024%
Pinnacle West Capital Corp	PNW	10,388	0.05%	3.28%	6.00%	9.38%	0.0044%
PPG Industries Inc	PPG	26,349	0.12%	1.75%	4.50%	6.29%	0.0075%
PPL Corp	PPL	23,081	0.10%	5.24%	3.00%	8.32%	0.0087%
Perrigo Co PLC	PRGO	6,324	0.03%	1.81%	0.50%	2.31%	0.0007%
Prudential Financial Inc	PRU	38,652	0.18%	4.25%	6.50%	10.89%	0.0191%

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Public Storage	PSA	37,234	0.17%	4.06%	7.00%	11.20%	0.0189%
Phillips 66	PSX	44,476	0.20%	3.61%	12.50%	16.34%	0.0330%
PVH Corp	PVH	8,370	0.04%	0.14%	11.00%	11.15%	0.0042%
Quanta Services Inc	PWR	5,204	0.02%	0.46%	19.50%	20.00%	0.0047%
Pioneer Natural Resources Co	PXD	23,237	0.11%	0.37%	75.00%	75.51%	0.0796%
PayPal Holdings Inc	PYPL	113,335	0.51%	0.00%	18.50%	18.50%	0.0952%
QUALCOMM Inc	QCOM	65,376	0.30%	5.00%	10.50%	15.76%	0.0468%
Qorvo Inc	QRVO	8,407	N/A	0.00%	N/A	N/A	N/A
Royal Caribbean Cruises Ltd	RCL	24,181	0.11%	2.42%	11.00%	13.55%	0.0149%
Everest Re Group Ltd	RE	8,867	0.04%	2.61%	10.00%	12.74%	0.0051%
Regency Centers Corp	REG	10,933	0.05%	3.66%	14.00%	17.92%	0.0089%
Regeneron Pharmaceuticals Inc	REGN	44,647	0.20%	0.00%	12.00%	12.00%	0.0243%
Regions Financial Corp	RF	16,907	0.08%	3.76%	13.50%	17.51%	0.0134%
Robert Half International Inc	RHI	7,943	0.04%	1.90%	9.00%	10.99%	0.0040%
Red Hat Inc	RHT	31,873	0.14%	0.00%	17.50%	17.50%	0.0253%
Raymond James Financial Inc	RJF	11,314	0.05%	1.74%	12.00%	13.84%	0.0071%
Ralph Lauren Corp	RL	9,695	0.04%	2.03%	7.00%	9.10%	0.0040%
ResMed Inc	RMD	14,398	0.07%	1.47%	14.50%	16.08%	0.0105%
Rockwell Automation Inc	ROK	20,991	0.10%	2.25%	10.50%	12.87%	0.0123%
Rollins Inc	ROL	13,083	0.06%	1.05%	13.50%	14.62%	0.0087%
Roper Technologies Inc	ROP	33,020	0.15%	0.58%	14.50%	15.12%	0.0227%
Ross Stores Inc	ROST	34,289	0.16%	1.10%	11.50%	12.66%	0.0197%
Republic Services Inc	RSG	25,475	0.12%	1.98%	12.00%	14.10%	0.0163%
Raytheon Co	RTN	50,822	0.23%	1.93%	10.00%	12.03%	0.0277%
SBA Communications Corp	SBAC	21,354	0.10%	0.00%	35.50%	35.50%	0.0344%
Starbucks Corp	SBUX	87,789	0.40%	2.21%	13.50%	15.86%	0.0632%
Charles Schwab Corp/The	SCHW	59,503	0.27%	1.55%	16.00%	17.67%	0.0477%
Sealed Air Corp	SEE	6,984	0.03%	1.44%	19.00%	20.58%	0.0065%
Sherwin-Williams Co/The	SHW	38,766	0.18%	1.09%	13.00%	14.16%	0.0249%
SVB Financial Group	SIVB	12,737	0.06%	0.00%	21.50%	21.50%	0.0124%
JM Smucker Co/The	SJM	11,679	0.05%	3.37%	4.50%	7.95%	0.0042%
Schlumberger Ltd	SLB	58,840	0.27%	4.71%	26.00%	31.32%	0.0837%
SL Green Realty Corp	SLG	8,495	0.04%	3.81%	6.50%	10.43%	0.0040%
Snap-on Inc	SNA	9,017	0.04%	2.37%	8.00%	10.46%	0.0043%
Synopsys Inc	SNPS	15,414	0.07%	0.00%	10.50%	10.50%	0.0073%
Southern Co/The	SO	50,440	0.23%	4.91%	3.50%	8.50%	0.0195%
Simon Property Group Inc	SPG	54,574	0.25%	4.85%	3.00%	7.92%	0.0196%
S&P Global Inc	SPGI	49,297	0.22%	1.16%	13.00%	14.24%	0.0319%
Sempra Energy	SRE	33,346	0.15%	3.25%	9.50%	12.90%	0.0195%
SunTrust Banks Inc	STI	28,471	0.13%	3.39%	13.50%	17.12%	0.0221%
State Street Corp	STT	25,950	0.12%	2.75%	9.00%	11.87%	0.0140%
Seagate Technology PLC	STX	12,795	0.06%	5.58%	9.00%	14.83%	0.0086%
Constellation Brands Inc	STZ	31,828	0.14%	1.91%	11.00%	13.02%	0.0188%
Stanley Black & Decker Inc	SWK	19,825	0.09%	2.06%	10.00%	12.16%	0.0109%
Skyworks Solutions Inc	SWKS	13,841	0.06%	1.91%	11.00%	13.02%	0.0082%
Synchrony Financial	SYF	22,639	0.10%	2.67%	11.00%	13.82%	0.0142%
Stryker Corp	SYK	69,995	0.32%	1.11%	15.00%	16.19%	0.0514%
Symantec Corp	SYMC	13,988	0.06%	1.37%	9.50%	10.94%	0.0069%
Sysco Corp	SYY	33,825	0.15%	2.37%	13.00%	15.52%	0.0238%
AT&T Inc	T	217,866	0.99%	6.85%	5.50%	12.54%	0.1240%
Molson Coors Brewing Co	TAP	12,957	0.06%	2.73%	11.00%	13.88%	0.0082%
TransDigm Group Inc	TDG	22,604	0.10%	0.00%	6.50%	6.50%	0.0067%
TE Connectivity Ltd	TEL	28,825	0.13%	2.17%	9.50%	11.77%	0.0154%
Teleflex Inc	TFX	13,222	0.06%	0.47%	12.00%	12.50%	0.0075%
Target Corp	TGT	39,746	0.18%	3.36%	7.00%	10.48%	0.0189%
Tiffany & Co	TIF	11,518	0.05%	2.49%	12.00%	14.64%	0.0077%
TJX Cos Inc/The	TJX	63,815	0.29%	1.55%	13.00%	14.65%	0.0424%
Torchmark Corp	TMK	9,114	0.04%	0.79%	10.00%	10.83%	0.0045%
Thermo Fisher Scientific Inc	TMO	100,970	0.46%	0.30%	10.50%	10.82%	0.0496%
Tapestry Inc	TPR	9,912	0.04%	3.95%	13.00%	17.21%	0.0077%
TripAdvisor Inc	TRIP	7,025	0.03%	0.00%	10.50%	10.50%	0.0033%
T Rowe Price Group Inc	TROW	23,355	0.11%	3.16%	11.50%	14.84%	0.0157%
Travelers Cos Inc/The	TRV	34,819	0.16%	2.34%	6.50%	8.92%	0.0141%
Tractor Supply Co	TSCO	11,263	0.05%	1.48%	10.50%	12.06%	0.0062%
Tyson Foods Inc	TSN	23,464	0.11%	2.34%	7.00%	9.42%	0.0100%
Total System Services Inc	TSS	16,969	0.08%	0.56%	11.50%	12.09%	0.0093%
Take-Two Interactive Software Inc	TTWO	9,999	0.05%	0.00%	29.50%	29.50%	0.0134%
Twitter Inc	TWTR	22,903	N/A	0.00%	N/A	N/A	N/A
Texas Instruments Inc	TXN	99,193	0.45%	2.94%	12.50%	15.62%	0.0703%
Textron Inc	TXT	12,609	0.06%	0.15%	15.00%	15.16%	0.0087%
Under Armour Inc	UAA	9,706	0.04%	0.00%	11.50%	11.50%	0.0051%
United Continental Holdings Inc	UAL	22,508	0.10%	0.00%	8.50%	8.50%	0.0087%
UDR Inc	UDR	11,961	0.05%	2.89%	-2.50%	0.35%	0.0002%
Universal Health Services Inc	UHS	11,982	0.05%	0.31%	10.50%	10.83%	0.0059%
Ulta Beauty Inc	ULTA	18,162	0.08%	0.00%	20.00%	20.00%	0.0165%
UnitedHealth Group Inc	UNH	227,232	1.03%	1.52%	13.50%	15.12%	0.1560%
Unum Group	UNM	7,892	0.04%	2.88%	9.50%	12.52%	0.0045%
Union Pacific Corp	UNP	121,646	0.55%	2.13%	14.50%	16.78%	0.0927%

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United Parcel Service Inc	UPS	91,793	0.42%	3.63%	8.50%	12.28%	0.0512%
United Rentals Inc	URI	10,110	0.05%	0.00%	17.00%	17.00%	0.0078%
US Bancorp	USB	82,256	0.37%	3.04%	7.00%	10.15%	0.0379%
United Technologies Corp	UTX	99,690	0.45%	2.36%	9.50%	11.97%	0.0542%
Visa Inc	V	295,275	1.34%	0.74%	14.50%	15.29%	0.2050%
Varian Medical Systems Inc	VAR	12,124	0.06%	0.00%	9.50%	9.50%	0.0052%
VF Corp	VFC	33,615	0.15%	2.40%	12.00%	14.54%	0.0222%
Viacom Inc	VIAB	11,742	0.05%	2.75%	4.00%	6.81%	0.0036%
Valero Energy Corp	VLO	34,222	0.16%	4.47%	9.00%	13.67%	0.0212%
Vulcan Materials Co	VMC	15,033	0.07%	1.09%	18.00%	19.19%	0.0131%
Vornado Realty Trust	VNO	12,861	0.06%	3.91%	-5.50%	-1.70%	-0.0010%
Verisk Analytics Inc	VRSK	20,862	0.09%	0.79%	9.50%	10.33%	0.0098%
VeriSign Inc	VRSN	21,305	0.10%	0.00%	12.00%	12.00%	0.0116%
Vertex Pharmaceuticals Inc	VRTX	45,655	N/A	0.00%	N/A	N/A	N/A
Ventas Inc	VTR	21,965	0.10%	5.24%	3.50%	8.83%	0.0088%
Verizon Communications Inc	VZ	232,633	1.06%	4.30%	4.50%	8.90%	0.0939%
Wabtec Corp	WAB	6,736	0.03%	0.69%	10.00%	10.72%	0.0033%
Waters Corp	WAT	18,052	0.08%	0.00%	11.00%	11.00%	0.0090%
Walgreens Boots Alliance Inc	WBA	56,409	0.26%	2.94%	10.00%	13.09%	0.0335%
WellCare Health Plans Inc	WCG	11,784	0.05%	0.00%	23.00%	23.00%	0.0123%
Western Digital Corp	WDC	13,674	0.06%	4.26%	1.50%	5.79%	0.0036%
WEC Energy Group Inc	WEC	24,242	0.11%	3.12%	6.00%	9.21%	0.0101%
Welltower Inc	WELL	27,917	0.13%	4.74%	8.50%	13.44%	0.0170%
Wells Fargo & Co	WFC	234,070	1.06%	3.68%	6.00%	9.79%	0.1040%
Whirlpool Corp	WHR	8,797	0.04%	3.35%	8.00%	11.48%	0.0046%
Willis Towers Watson PLC	WLTW	22,101	N/A	1.53%	N/A	N/A	N/A
Waste Management Inc	WM	42,584	0.19%	2.06%	9.00%	11.15%	0.0216%
Williams Cos Inc/The	WMB	32,612	0.15%	5.64%	19.00%	25.18%	0.0373%
Walmart Inc	WMT	283,118	1.29%	2.18%	7.00%	9.26%	0.1189%
Westrock Co	WRK	9,547	0.04%	4.87%	14.50%	19.72%	0.0085%
Western Union Co/The	WU	7,858	0.04%	4.52%	7.00%	11.68%	0.0042%
Weyerhaeuser Co	WY	18,175	0.08%	5.59%	17.50%	23.58%	0.0195%
Wynn Resorts Ltd	WYNN	12,903	0.06%	2.53%	20.00%	22.78%	0.0133%
Cimarex Energy Co	XEC	6,825	0.03%	1.12%	32.50%	33.80%	0.0105%
Xcel Energy Inc	XEL	28,498	0.13%	2.92%	5.50%	8.50%	0.0110%
Xilinx Inc	XLNX	30,357	0.14%	1.20%	11.00%	12.27%	0.0169%
Exxon Mobil Corp	XOM	339,398	1.54%	4.19%	14.00%	18.48%	0.2847%
DENTSPLY SIRONA Inc	XRAY	10,729	0.05%	0.73%	3.00%	3.74%	0.0018%
Xerox Corp	XRX	7,414	0.03%	3.31%	2.50%	5.85%	0.0020%
Xylem Inc/NY	XYL	13,535	0.06%	1.28%	15.50%	16.88%	0.0104%
Yum! Brands Inc	YUM	30,217	0.14%	1.74%	10.00%	11.83%	0.0162%
Zimmer Biomet Holdings Inc	ZBH	24,764	0.11%	0.79%	4.50%	5.31%	0.0060%
Zions Bancorp NA	ZION	9,361	0.04%	2.46%	15.00%	17.64%	0.0075%
Zoetis Inc	ZTS	44,515	0.20%	0.71%	13.50%	14.26%	0.0288%
Total Market Capitalization:		22,031,880					16.75%

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

Bloomberg and Value Line Beta Coefficients

Company	Ticker	[1] Bloomberg	[2] Value Line
ALLETE, Inc.	ALE	0.448	0.650
Alliant Energy Corporation	LNT	0.528	0.650
Ameren Corporation	AEE	0.436	0.600
Avangrid, Inc.	AGR	0.468	0.400
Black Hills Corporation	BKH	0.534	0.750
CMS Energy Corporation	CMS	0.466	0.550
DTE Energy Company	DTE	0.503	0.550
Duke Energy Corporation	DUK	0.431	0.500
El Paso Electric Company	EE	0.503	0.650
Evergy, Inc.	EVRG	0.414	0.523
Hawaiian Electric Industries, Inc.	HE	0.468	0.600
NextEra Energy, Inc.	NEE	0.553	0.600
NorthWestern Corporation	NWE	0.481	0.550
OGE Energy Corp.	OGE	0.557	0.850
Otter Tail Corporation	OTTR	0.521	0.700
Pinnacle West Capital Corporation	PNW	0.418	0.550
PNM Resources, Inc.	PNM	0.501	0.650
Portland General Electric Company	POR	0.463	0.600
Southern Company	SO	0.472	0.500
WEC Energy Group, Inc.	WEC	0.474	0.550
Xcel Energy Inc.	XEL	0.479	0.500
Mean		0.482	0.594

Notes:
[1] Source: Bloomberg Professional
[2] Source: Value Line

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

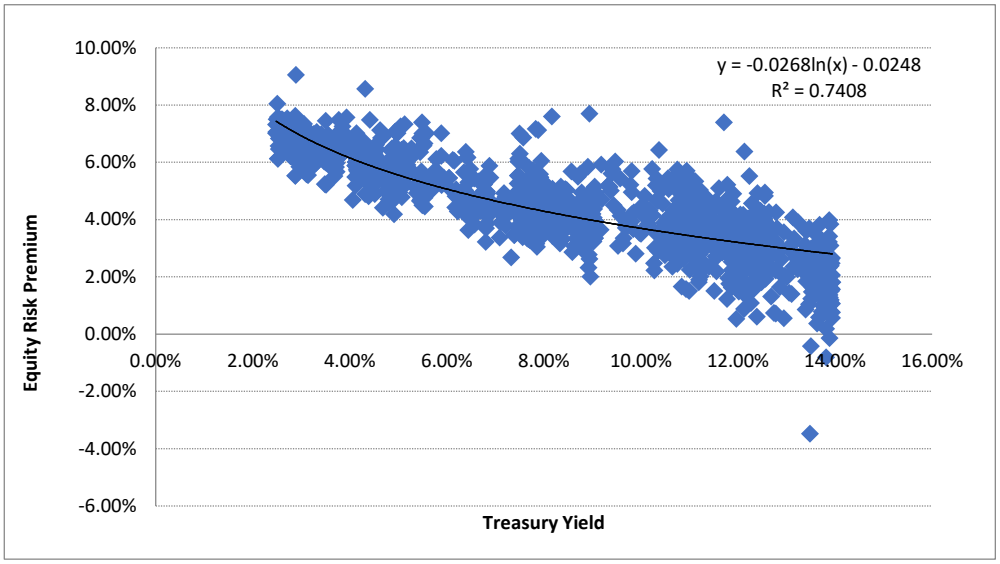
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
					CAPM		ECAPM	
	Risk-Free Rate	Average Beta Coefficient	Bloomberg Market DCF Derived	Value Line Market DCF Derived	Bloomberg MRP	Value Line MRP	Bloomberg MRP	Value Line MRP
PROXY GROUP AVERAGE BLOOMBERG BETA COEFFICIENT								
Current 30-Year Treasury (30-day average) [9]	3.03%	0.482	10.61%	13.72%	8.14%	9.64%	9.51%	11.42%
Near-Term Projected 30-Year Treasury [10]	3.25%	0.482	10.61%	13.72%	8.36%	9.86%	9.74%	11.64%
Mean					8.25%	9.75%	9.63%	11.53%

					CAPM		ECAPM	
	Risk-Free Rate	Average Beta Coefficient	Bloomberg Market DCF Derived	Value Line Market DCF Derived	Bloomberg MRP	Value Line MRP	Bloomberg MRP	Value Line MRP
PROXY GROUP AVERAGE VALUE LINE AVERAGE BETA COEFFICIENT								
Current 30-Year Treasury (30-day average) [9]	3.03%	0.594	10.61%	13.72%	9.33%	11.18%	10.41%	12.57%
Near-Term Projected 30-Year Treasury [10]	3.25%	0.594	10.61%	13.72%	9.55%	11.40%	10.63%	12.79%
Mean					9.44%	11.29%	10.52%	12.68%

Notes:
[1] *See Notes [9] and [10]*
[2] Source: Attachment RBH-4
[3] Source: Attachment RBH-3
[4] Source: Attachment RBH-3
[5] Equals Col. [1] + (Col. [2] x Col. [3])
[6] Equals Col. [1] + (Col. [2] x Col. [4])
[7] Equals Col. [1] + (Col. [2] x Col. [3] x 0.75) + (Col. [3] x 0.25)
[8] Equals Col. [1] + (Col. [2] x Col. [4] x 0.75) + (Col. [4] x 0.25)
[9] Source: Bloomberg Professional
[10] Source: Blue Chip Financial Forecasts, Vol. 38, No. 3, March 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
	-2.48%	-2.68%			
Current 30-Year Treasury			3.03%	6.90%	9.93%
Near-Term Projected 30-Year Treasury			3.25%	6.71%	9.96%
Long-Term Projected 30-Year Treasury			4.05%	6.12%	10.17%



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. 3, March 1, 2019, at 2.
Long Term Projected = Blue Chip Financial Forecasts, Vol. 37, No. 12, December 1, 2018, at 14.
[4] Equals [1] + ln([3]) x [2]
[5] Equals [3] + [4]
[6] Source: S&P Global Market Intelligence
[7] Source: S&P Global Market Intelligence
[8] Source: Bloomberg Professional, equals 200-trading day average (i.e. lag period)
[9] Equals [7] - [8]

Bond Yield Plus Risk Premium

[6] Date of Electric Rate Case	[7] Return on Equity	[8] 30-Year Treasury Yield	[9] Risk Premium
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%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
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%
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%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
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%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
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%
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%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
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%
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%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
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%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
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%
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%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
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%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
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%
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%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
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%
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%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
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%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
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%
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%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
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%
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%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
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%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
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%
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%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
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%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
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%
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%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
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%
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%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
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%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
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%
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%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
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%
6/6/2006	10.00%	4.74%	5.26%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
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%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
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%
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%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
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%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
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%
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%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
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%
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%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
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%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
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%
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%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
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%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
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%
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%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
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%

# of Cases:	1584
Average:	4.67%

Expected Earnings Analysis

Company	Ticker	[1] Expected ROE 2021-23/ 2022-24	[2] Shares Outstanding 2019	[3] Shares Outstanding 2021-23/ 2022-24	[4] Shares Outstanding % Increase	[5] Adjustment Factor	[6] Adjusted ROE
ALLETE, Inc.	ALE	9.00%	51.50	51.50	0.00%	1.000	9.00%
Alliant Energy Corporation	LNT	10.00%	240.00	250.00	0.82%	1.004	10.04%
Ameren Corporation	AEE	10.50%	246.50	253.00	0.52%	1.003	10.53%
Avangrid, Inc.	AGR	6.50%	309.00	309.00	0.00%	1.000	6.50%
Black Hills Corporation	BKH	10.00%	60.50	61.00	0.21%	1.001	10.01%
CMS Energy Corporation	CMS	14.00%	285.00	297.00	0.83%	1.004	14.06%
DTE Energy Company	DTE	10.50%	192.00	200.00	0.82%	1.004	10.54%
Duke Energy Corporation	DUK	8.50%	731.50	750.00	0.50%	1.002	8.52%
El Paso Electric Company	EE	8.50%	40.70	41.00	0.18%	1.001	8.51%
Evergy, Inc.	EVRG	8.50%	225.00	212.00	-1.18%	0.994	8.45%
Hawaiian Electric Industries, Inc.	HE	9.50%	110.00	113.00	0.67%	1.003	9.53%
NextEra Energy, Inc.	NEE	13.50%	535.00	535.00	0.00%	1.000	13.50%
NorthWestern Corporation	NWE	9.00%	50.50	51.00	0.25%	1.001	9.01%
OGE Energy Corp.	OGE	11.50%	199.70	199.70	0.00%	1.000	11.50%
Otter Tail Corporation	OTTR	10.50%	39.75	41.75	0.99%	1.005	10.55%
Pinnacle West Capital Corporation	PNW	10.50%	112.75	114.25	0.33%	1.002	10.52%
PNM Resources, Inc.	PNM	9.50%	79.65	83.00	1.04%	1.005	9.55%
Portland General Electric Company	POR	9.00%	89.40	90.00	0.17%	1.001	9.01%
Southern Company	SO	13.00%	1050.00	1090.00	0.75%	1.004	13.05%
Wisconsin Energy Corporation	WEC	12.50%	315.50	315.50	0.00%	1.000	12.50%
Xcel Energy Inc.	XEL	10.50%	518.00	533.00	0.72%	1.004	10.54%
						Median	10.04%
						Average	10.26%

Notes:

[1] Source: Value Line
[2] Source: Value Line
[3] Source: Value Line
[4] Equals =([3] / [2])^(1/4)-1; ([3] / [2])^(1/5)-1
[5] Equals (2 x (1 + [4])) / (2 + [4])
[6] Equals [1] x [5]

Flotation Cost Adjustment

Two most recent open market common stock issuances per company, if available

Company	Date	[1] Shares Issued	[2] Offering Price	[3] Underwriting Discount	[4] Offering Expense	[5] Net Proceeds Per Share	[6] Total Flotation Costs	[7] Gross Equity Issue Before Costs	[8] Net Proceeds	[9] Flotation Cost Percentage
American Electric Power Company, Inc.	4/1/2009	69,000,000	$24.50	$0.7350	$400,000	$23.76	$51,115,000	$1,690,500,000	$1,639,385,000	3.024%
American Electric Power Company, Inc.	2/27/2003	57,500,000	$20.95	$0.6285	$550,000	$20.31	$36,688,750	$1,204,625,000	$1,167,936,250	3.046%
									Average	3.035%
ALLETE, Inc.	2/27/2014	3,220,000	$49.75	$1.7413	$450,000	$47.87	$6,056,825	$160,195,000	$154,138,175	3.781%
ALLETE, Inc.	5/25/2001	7,475,000	$23.68	$0.9472	$350,000	$22.69	$7,430,320	$177,008,000	$169,577,680	4.198%
Alliant Energy Corporation	7/1/2003	17,250,000	$19.25	$0.7700	$370,000	$18.46	$13,652,500	$332,062,500	$318,410,000	4.111%
Alliant Energy Corporation	11/8/2001	9,775,000	$28.00	$1.0500	$425,000	$26.91	$10,688,750	$273,700,000	$263,011,250	3.905%
Ameren Corp.	9/9/2009	21,850,000	$25.25	$0.7575	$450,000	$24.47	$17,001,375	$551,712,500	$534,711,125	3.082%
Ameren Corp.	6/30/2004	10,925,000	$42.00	$1.2600	$400,000	$40.70	$14,165,500	$458,850,000	$444,684,500	3.087%
Avangrid, Inc.	9/26/2013	5,750,000	$37.25	$1.3038	$250,000	$35.90	$7,746,563	$214,187,500	$206,440,938	3.617%
Avangrid, Inc.	9/16/2010	20,355,000	$25.75	$1.0944	$325,000	$24.64	$22,601,003	$524,141,250	$501,540,247	4.312%
Black Hills Corporation	11/19/2015	5,980,000	$40.25	$1.4088	$1,200,000	$38.64	$9,624,325	$240,695,000	$231,070,675	3.999%
Black Hills Corporation	11/12/2010	4,600,000	$29.75	$1.0413	$276,650	$28.65	$5,066,400	$136,850,000	$131,783,600	3.702%
CMS Energy Corporation	3/30/2005	23,000,000	$12.25	$0.4288	$325,000	$11.81	$10,187,400	$281,750,000	$271,562,600	3.616%
CMS Energy Corporation	10/7/2004	32,775,000	$9.10	$0.3185	$325,000	$8.77	$10,763,838	$298,252,500	$287,488,663	3.609%
DTE Energy Company	6/19/2002	6,325,000	$43.25	$1.4056	$250,000	$41.80	$9,140,420	$273,556,250	$264,415,830	3.341%
Duke Energy Corporation	3/6/2018	21,275,000	$74.07	$0.0000	$450,000	$74.05	$450,000	$1,575,881,800	$1,575,431,800	0.029%
Duke Energy Corporation	3/2/2016	10,637,500	$72.00	$2.1600	$400,000	$69.80	$23,377,000	$765,900,000	$742,523,000	3.052%
Evergy, Inc.	9/27/2016	60,490,000	$26.45	$0.7935	$500,000	$25.65	$48,498,815	$1,599,960,500	$1,551,461,685	3.031%
Evergy, Inc.	9/23/2013	8,916,000	$31.15	$1.0900	$250,000	$30.03	$9,968,440	$277,733,400	$267,764,960	3.589%
Hawaiian Electric Industries, Inc	3/19/2013	7,000,000	$26.75	$1.0031	$450,000	$25.68	$7,471,840	$187,250,000	$179,778,160	3.990%
Hawaiian Electric Industries, Inc	12/2/2008	5,750,000	$23.00	$0.8625	$300,000	$22.09	$5,259,375	$132,250,000	$126,990,625	3.977%
NextEra Energy, Inc.	11/1/2016	13,800,000	$124.00	$0.0000	$750,000	$123.95	$750,000	$1,711,200,000	$1,710,450,000	0.044%
NextEra Energy, Inc.	11/18/2013	11,100,000	$88.03	$0.0000	$750,000	$87.96	$750,000	$977,133,000	$976,383,000	0.077%
NorthWestern Corporation	9/29/2015	1,100,000	$51.81	$1.3300	$1,000,000	$49.57	$2,463,000	$56,991,000	$54,528,000	4.322%
NorthWestern Corporation	11/5/2014	7,766,990	$51.50	$1.8025	$1,000,000	$49.57	$14,999,999	$399,999,985	$384,999,986	3.750%
OGE Energy Corp.	8/21/2003	5,324,074	$21.60	$0.7900	$325,000	$20.75	$4,531,018	$114,999,998	$110,468,980	3.940%
Otter Tail Corporation	9/18/2008	5,175,000	$30.00	$1.0875	$400,000	$28.84	$6,027,813	$155,250,000	$149,222,188	3.883%
Otter Tail Corporation	12/7/2004	3,335,000	$25.45	$0.9500	$300,000	$24.41	$3,468,250	$84,875,750	$81,407,500	4.086%
Pinnacle West Capital Corporation	4/8/2010	6,900,000	$38.00	$1.3300	$190,000	$36.64	$9,367,000	$262,200,000	$252,833,000	3.572%
Pinnacle West Capital Corporation	4/27/2005	6,095,000	$42.00	$1.3650	$250,000	$40.59	$8,569,675	$255,990,000	$247,420,325	3.348%
PNM Resources, Inc.	12/6/2006	5,750,000	$30.79	$1.0780	$250,000	$29.67	$6,448,500	$177,042,500	$170,594,000	3.642%
PNM Resources, Inc.	3/23/2005	3,910,000	$26.76	$0.8697	$200,000	$25.84	$3,600,527	$104,631,600	$101,031,073	3.441%
Portland General Electric Company	6/11/2013	12,765,000	$29.50	$0.9588	$600,000	$28.49	$12,838,444	$376,567,500	$363,729,056	3.409%
Portland General Electric Company	3/5/2009	12,477,500	$14.10	$0.4935	$375,000	$13.58	$6,532,646	$175,932,750	$169,400,104	3.713%
Southern Company	8/16/2016	32,500,000	$49.30	$1.6600	$557,000	$47.62	$54,507,000	$1,602,250,000	$1,547,743,000	3.402%
Southern Company	5/5/2016	18,300,000	$48.60	$2.0200	$395,000	$46.56	$37,361,000	$889,380,000	$852,019,000	4.201%
WEC Energy Group, Inc.	11/16/2005	5,290,000	$53.70	$1.7450	$0	$51.96	$9,231,050	$284,073,000	$274,841,950	3.250%
WEC Energy Group, Inc.	11/20/2003	4,025,000	$43.00	$1.5050	$0	$41.50	$6,057,625	$173,075,000	$167,017,375	3.500%
Xcel Energy Inc.	8/3/2010	21,850,000	$21.50	$0.6450	$600,000	$20.83	$14,693,250	$469,775,000	$455,081,750	3.128%
Xcel Energy Inc.	9/9/2008	17,250,000	$20.25	$0.1500	$600,000	$20.07	$3,187,500	$349,312,500	$346,125,000	0.913%
Mean							$13,308,468	$499,443,520		
								WEIGHTED AVERAGE FLOTATION COSTS:		2.665% [10]

Constant Growth Discounted Cash Flow Model Adjusted for Flotation Costs - 30 Day Average Stock Price

		[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]
			Average		Expected Dividend Yield		Zacks	First Call	Value Line	Average		Flotation
		Annualized	Stock	Dividend		Adjusted for	Earnings	Earnings	Earnings	Earnings		Adjusted
Company	Ticker	Dividend	Price	Yield	Current	Flot. Costs	Growth	Growth	Growth	Growth	DCF k(e)	DCF k(e)
ALLETE, Inc.	ALE	$2.35	$80.27	2.93%	3.01%	3.09%	NA	6.00%	5.00%	5.50%	8.51%	8.59%
Alliant Energy Corporation	LNT	$1.42	$45.56	3.12%	3.22%	3.31%	6.00%	7.25%	6.50%	6.58%	9.80%	9.89%
Ameren Corporation	AEE	$1.90	$70.76	2.68%	2.78%	2.86%	6.80%	7.70%	6.50%	7.00%	9.78%	9.86%
Avangrid, Inc.	AGR	$1.76	$49.39	3.56%	3.74%	3.84%	7.70%	9.20%	12.00%	9.63%	13.37%	13.47%
Black Hills Corporation	BKH	$2.02	$70.59	2.86%	2.93%	3.01%	4.70%	3.63%	6.50%	4.94%	7.88%	7.96%
CMS Energy Corporation	CMS	$1.53	$53.59	2.86%	2.95%	3.03%	6.00%	6.89%	7.00%	6.63%	9.58%	9.66%
DTE Energy Company	DTE	$3.78	$121.33	3.12%	3.19%	3.28%	6.00%	4.16%	5.00%	5.05%	8.25%	8.34%
Duke Energy Corporation	DUK	$3.71	$89.40	4.15%	4.25%	4.37%	5.00%	4.50%	5.50%	5.00%	9.25%	9.37%
El Paso Electric Company	EE	$1.44	$55.16	2.61%	2.66%	2.73%	2.70%	5.10%	3.00%	3.60%	6.26%	6.33%
Evergy, Inc.	EVRG	$1.90	$57.00	3.33%	3.44%	3.54%	6.70%	6.25%	NMF	6.48%	9.92%	10.01%
Hawaiian Electric Industries, Inc.	HE	$1.28	$38.43	3.33%	3.43%	3.52%	6.20%	7.80%	3.50%	5.83%	9.26%	9.36%
NextEra Energy, Inc.	NEE	$5.00	$185.69	2.69%	2.80%	2.88%	7.70%	7.46%	9.00%	8.05%	10.85%	10.93%
NorthWestern Corporation	NWE	$2.30	$67.21	3.42%	3.47%	3.56%	3.10%	2.74%	2.50%	2.78%	6.25%	6.34%
OGE Energy Corp.	OGE	$1.46	$41.97	3.48%	3.58%	3.67%	4.80%	NA	6.50%	5.65%	9.23%	9.32%
Otter Tail Corporation	OTTR	$1.40	$49.90	2.81%	2.90%	2.98%	NA	9.00%	5.00%	7.00%	9.90%	9.98%
Pinnacle West Capital Corporation	PNW	$2.95	$91.67	3.22%	3.30%	3.39%	4.80%	4.56%	6.00%	5.12%	8.42%	8.51%
PNM Resources, Inc.	PNM	$1.16	$44.14	2.63%	2.70%	2.77%	4.60%	4.10%	7.50%	5.40%	8.10%	8.17%
Portland General Electric Company	POR	$1.45	$49.89	2.91%	2.97%	3.05%	4.00%	4.90%	4.00%	4.30%	7.27%	7.35%
Southern Company	SO	$2.40	$49.84	4.82%	4.90%	5.03%	4.50%	2.16%	3.50%	3.39%	8.28%	8.42%
WEC Energy Group, Inc.	WEC	$2.36	$75.56	3.12%	3.20%	3.29%	4.40%	4.59%	6.00%	5.00%	8.20%	8.29%
Xcel Energy Inc.	XEL	$1.62	$54.41	2.98%	3.07%	3.15%	5.90%	6.60%	5.50%	6.00%	9.07%	9.15%
PROXY GROUP MEAN											8.92%	9.01%

Notes:
The proxy group DCF result is adjusted for flotation costs by dividing each company's expected dividend yield by (1 - flotation cost). The flotation cost adjustment is derived as the difference between the unadjusted DCF result and the DCF result adjusted for flotation costs.

DCF Result Adjusted For Flotation Costs:	9.01%
DCF Result Unadjusted For Flotation Costs:	8.92%
Difference (Flotation Cost Adjustment):	0.09% [22]

[1] Source: SEC Form 424B
[2] Source: SEC Form 424B
[3] Source: SEC Form 424B
[4] Source: SEC Form 424B
[5] Equals [8] / [1]
[6] Equals [4] + ([1] x [3])
[7] Equals [1] x [2]
[8] Equals [7] - [6]
[9] Equals [6] / [7]
[10] Equals Average [6] / Average [7]
[11] Source: Bloomberg Professional
[12] Source: Bloomberg Professional
[13] Equals [11] / [12]
[14] Equals [3] x (1 + 0.5 x [19])
[15] Equals [4] / (1 - 0.0266)
[16] Source: Zacks
[17] Source: Yahoo! Finance
[18] Source: Value Line
[19] Equals Average([16], [17], [18])
[20] Equals [14] + [19]
[21] Equals [15] + [19]
[22] Equals Average [21] - Average [20]

Summary of Adjustment Clauses & Alternative Regulation/Incentive Plans

			Adjustment Clauses						
Company	Parent	State	Fuel/ Purchased Power	Decoupling (F/P) [1]	New Capital Investment [2]	Energy Efficiency [3]	Renewables & RPS [4]	Environmental [5]	Other [6]
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	✓						✓
Ameren Illinois Company	AEE	Illinois	✓		✓	✓	✓	✓	✓
Union Electric Company	AEE	Missouri	✓	P		✓		✓	✓
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		✓	✓		✓
United Illuminating Company	AGR	Connecticut	✓	F		✓	✓	✓	✓
Black Hills Colorado Electric Utility Company, LP	BKH	Colorado	✓		✓	✓	✓		✓
Black Hills Power, Inc.	BKH	South Dakota	✓	P	✓	✓		✓	✓
Black Hills Power, Inc.	BKH	Wyoming	✓						✓
Cheyenne Light, Fuel and Power Company	BKH	Wyoming	✓	P		✓			✓
Consumers Energy Company	CMS	Michigan	✓			✓	✓		✓
DTE Electric Company	DTE	Michigan	✓			✓	✓	✓	✓
Duke Energy Carolinas, LLC	DUK	North Carolina	✓	P		✓	✓	✓	✓
Duke Energy Carolinas, LLC	DUK	South Carolina	✓	P		✓	✓	✓	✓
Duke Energy Florida, LLC	DUK	Florida	✓		✓	✓		✓	✓
Duke Energy Indiana, LLC	DUK	Indiana	✓	P	✓	✓	✓	✓	✓
Duke Energy Kentucky, Inc.	DUK	Kentucky	✓	P		✓		✓	✓
Duke Energy Ohio, Inc.	DUK	Ohio	✓	P	✓	✓	✓		✓
Duke Energy Progress, LLC	DUK	North 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	✓						✓
Northern States Power Company - MN	XEL	Minnesota	✓	F	✓	✓	✓	✓	✓
Northern States Power Company - MN	XEL	North Dakota	✓		✓		✓		✓
Northern States Power Company - MN	XEL	South Dakota	✓	P	✓	✓		✓	✓
Northern States Power Company - WI	XEL	Michigan	✓			✓			✓
Northern States Power Company - WI	XEL	Wisconsin	✓						✓
Public Service Company of Colorado	XEL	Colorado	✓		✓	✓	✓	✓	✓
Southwestern Public Service Company	XEL	New Mexico	✓			✓	✓		✓
Southwestern Public Service Company	XEL	Texas	✓		✓	✓			✓
Indiana Michigan Power Company	AEP	Indiana	✓	P	✓	✓	✓	✓	✓
			59	26	23	51	30	33	60
		Notes:	100%	43%	38%	85%	50%	55%	100%

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

[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).

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

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

Summary of Adjustmen

Summary of Adjustment Clauses & Alternative Regulation/Incentive Plans

			Alternative Regulation / Incentive Plans									
Company	Parent	State	Formula-Based Rates	Multiyear Rate Plans	Performance Based Ratemaking	CWIP Allowed in Rate Base (L/F)	Forward Test Year	Price Freeze/ Cap	Earnings Sharing	Formula-Based ROE	Service Quality / Performance	Merger Savings
ALLETE (Minnesota Power)	ALE	Minnesota				L	✓					
Superior Water, Light and Power Company	ALE	Wisconsin				L	✓					
Interstate Power and Light Company	LNT	Iowa		✓				✓				
Wisconsin Power and Light Company	LNT	Wisconsin		✓		L	✓	✓	✓			
Ameren Illinois Company	AEE	Illinois	✓			L			✓	✓	✓	
Union Electric Company	AEE	Missouri										
Central Maine Power Company	AGR	Maine							✓			
New York State Electric & Gas Corporation	AGR	New York		✓	✓			✓	✓			
Rochester Gas and Electric Corporation	AGR	New York		✓	✓			✓	✓			
United Illuminating Company	AGR	Connecticut		✓					✓			
Black Hills Colorado Electric Utility Company, LP	BKH	Colorado			✓	F						
Black Hills Power, Inc.	BKH	South Dakota			✓							
Black Hills Power, Inc.	BKH	Wyoming			✓							
Cheyenne Light, Fuel and Power Company	BKH	Wyoming										
Consumers Energy Company	CMS	Michigan				L	✓					
DTE Electric Company	DTE	Michigan				L	✓					
Duke Energy Carolinas, LLC	DUK	North Carolina						✓				
Duke Energy Carolinas, LLC	DUK	South Carolina						✓				
Duke Energy Florida, LLC	DUK	Florida		✓	✓		✓	✓				
Duke Energy Indiana, LLC	DUK	Indiana				F		✓				
Duke Energy Kentucky, Inc.	DUK	Kentucky				F	✓					
Duke Energy Ohio, Inc.	DUK	Ohio							✓			
Duke Energy Progress, LLC	DUK	North Carolina		✓								
Duke Energy Progress, LLC	DUK	South Carolina										
El Paso Electric Company	EE	New Mexico										
El Paso Electric Company	EE	Texas										
Kansas City Power & Light Company	EVRG	Kansas				F		✓			✓	
Kansas City Power & Light Company	EVRG	Missouri										
KCP&L Greater Missouri Operations Company	EVRG	Missouri										
Westar Energy (KPL)	EVRG	Kansas				F		✓				✓
Hawaii Electric Light Company, Inc.	HE	Hawaii		✓			✓		✓			
Hawaiian Electric Company, Inc.	HE	Hawaii		✓			✓		✓			
Maui Electric Company, Limited	HE	Hawaii		✓			✓		✓			
Florida Power & Light Company	NEE	Florida		✓	✓	F	✓	✓				
Gulf Power Company	NEE	Florida				F	✓	✓				
NorthWestern Energy	NWE	Montana					✓					
NorthWestern Energy	NWE	South Dakota		✓	✓	L		✓				
Oklahoma Gas and Electric Company	OGE	Arkansas	✓									
Oklahoma Gas and Electric Company	OGE	Oklahoma			✓	F						
Otter Tail Power Company	OTTR	Minnesota				L						
Otter Tail Power Company	OTTR	North Dakota				F	✓					
Otter Tail Power Company	OTTR	South Dakota				L						
Arizona Public Service Company	PNW	Arizona		✓	✓			✓				
Public Service Company of New Mexico	PNM	New Mexico		✓		F	✓		✓			
Texas-New Mexico Power Company	PNM	Texas				L						
Portland General Electric Company	POR	Oregon					✓					
Alabama Power Company	SO	Alabama	✓		✓							
Georgia Power Company	SO	Georgia		✓		L	✓	✓	✓			
Mississippi Power Company	SO	Mississippi	✓		✓	F	✓			✓	✓	
Upper Michigan Energy Resources Corp	WEC	Michigan				L	✓					
Wisconsin Electric Power	WEC	Wisconsin		✓		L	✓	✓	✓			
Wisconsin Public Service Company	WEC	Wisconsin		✓		L	✓		✓			
Northern States Power Company - MN	XEL	Minnesota		✓		L	✓					
Northern States Power Company - MN	XEL	North Dakota		✓		F			✓			
Northern States Power Company - MN	XEL	South Dakota		✓		L		✓				
Northern States Power Company - WI	XEL	Michigan				L	✓					
Northern States Power Company - WI	XEL	Wisconsin				L	✓		✓			
Public Service Company of Colorado	XEL	Colorado		✓	✓	L		✓	✓			
Southwestern Public Service Company	XEL	New Mexico				F		✓				
Southwestern Public Service Company	XEL	Texas				L		✓				
Indiana Michigan Power Company	AEP	Indiana				F	✓					
		Notes:	4 7%	21 35%	13 22%	33 55%	24 40%	20 33%	17 28%	2 3%	3 5%	1 2%

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

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

[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.

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

Proxy Group Capital Structure

		% Common Equity								
Company	Ticker	2018Q3	2018Q2	2018Q1	2017Q4	2017Q3	2017Q2	2017Q1	2016Q4	Average
ALLETE, Inc.	ALE	58.50%	58.84%	63.09%	62.51%	61.03%	60.62%	60.28%	59.02%	60.49%
Alliant Energy Corporation	LNT	51.13%	51.00%	49.74%	49.77%	52.09%	51.23%	50.84%	50.73%	50.82%
Ameren Corporation	AEE	53.22%	52.01%	53.04%	52.65%	53.56%	53.11%	52.77%	52.62%	52.87%
Avangrid, Inc.	AGR	56.13%	54.93%	56.55%	55.69%	53.88%	53.54%	55.66%	54.95%	55.17%
Black Hills Corporation	BKH	53.20%	53.82%	53.79%	54.40%	54.75%	53.84%	53.20%	52.81%	53.73%
CMS Energy Corporation	CMS	53.01%	52.86%	53.13%	52.25%	53.25%	52.97%	52.10%	51.24%	52.60%
DTE Energy Company	DTE	49.97%	49.23%	51.12%	51.02%	50.50%	50.63%	50.50%	50.50%	50.43%
Duke Energy Corporation	DUK	55.03%	54.94%	54.46%	54.30%	53.78%	54.62%	54.37%	54.66%	54.52%
El Paso Electric Company	EE	48.57%	47.32%	49.46%	49.95%	49.81%	48.01%	47.48%	47.73%	48.54%
Evergy, Inc	EVRG	59.86%	58.51%	58.73%	58.62%	59.41%	58.74%	58.75%	59.28%	58.99%
Hawaiian Electric Industries, Inc.	HE	56.09%	55.78%	57.44%	57.42%	58.11%	57.76%	57.71%	57.70%	57.25%
NextEra Energy, Inc.	NEE	64.78%	60.84%	61.23%	59.93%	63.00%	62.78%	62.05%	62.65%	62.16%
NorthWestern Corporation	NWE	48.36%	48.41%	47.48%	49.89%	48.86%	48.61%	48.61%	48.13%	48.54%
OGE Energy Corp.	OGE	53.05%	54.25%	53.59%	53.36%	53.05%	52.75%	53.46%	56.09%	53.70%
Otter Tail Corporation	OTTR	53.49%	53.11%	52.67%	57.34%	57.24%	55.31%	55.31%	55.06%	54.94%
Pinnacle West Capital Corporation	PNW	53.68%	53.71%	53.18%	53.14%	53.05%	53.32%	53.20%	54.59%	53.48%
PNM Resources, Inc.	PNM	48.01%	46.68%	46.20%	46.06%	47.58%	46.89%	46.38%	46.01%	46.73%
Portland General Electric Company	POR	50.51%	50.29%	50.14%	49.80%	50.17%	50.32%	50.28%	49.82%	50.17%
Southern Company	SO	51.50%	50.31%	49.98%	47.67%	50.14%	49.99%	51.41%	51.10%	50.26%
WEC Energy Group, Inc.	WEC	58.30%	57.72%	61.62%	54.62%	55.82%	55.48%	54.80%	56.26%	56.83%
Xcel Energy Inc.	XEL	53.37%	53.63%	54.15%	53.95%	53.93%	54.37%	54.94%	54.37%	54.09%
Mean		53.80%	53.25%	53.85%	53.54%	53.95%	53.57%	53.53%	53.59%	53.63%

Operating Company Capital Structure

		% Common Equity								
Operating Company	Parent	2018Q3	2018Q2	2018Q1	2017Q4	2017Q3	2017Q2	2017Q1	2016Q4	Average
ALLETE (Minnesota Power)	ALE	60.43%	60.33%	60.38%	60.04%	59.73%	59.16%	58.71%	56.92%	59.46%
Superior Water, Light and Power Company	ALE	56.58%	57.34%	65.80%	64.99%	62.33%	62.08%	61.85%	61.12%	61.51%
Interstate Power and Light Company	LNT	49.64%	50.47%	49.92%	50.31%	51.79%	50.89%	50.23%	50.24%	50.44%
Wisconsin Power and Light Company	LNT	52.62%	51.52%	49.57%	49.23%	52.39%	51.56%	51.45%	51.22%	51.19%
Ameren Illinois Company	AEE	53.18%	52.74%	54.24%	53.38%	54.98%	54.55%	54.09%	53.44%	53.82%
Union Electric Company	AEE	53.26%	51.28%	51.84%	51.92%	52.14%	51.68%	51.45%	51.80%	51.92%
Central Maine Power Company	AGR	64.17%	63.53%	64.18%	63.82%	63.97%	63.27%	62.84%	62.39%	63.52%
New York State Electric & Gas Corporation	AGR	53.95%	50.99%	54.51%	53.30%	48.27%	50.24%	49.68%	48.84%	51.22%
Rochester Gas and Electric Corporation	AGR	48.16%	47.77%	50.80%	49.63%	48.94%	48.46%	55.25%	54.30%	50.42%
United Illuminating Company	AGR	58.23%	57.43%	56.70%	56.00%	54.35%	52.17%	54.88%	54.26%	55.50%
Black Hills Colorado Electric Utility Company, LP	BKH	53.04%	54.85%	54.68%	55.69%	54.96%	55.01%	53.08%	52.20%	54.19%
Black Hills Power, Inc.	BKH	53.51%	53.30%	53.22%	53.49%	56.14%	53.26%	53.24%	52.88%	53.63%
Cheyenne Light, Fuel and Power Company	BKH	53.04%	53.32%	53.46%	54.01%	53.16%	53.27%	53.29%	53.35%	53.36%
Consumers Energy Company	CMS	53.01%	52.86%	53.13%	52.25%	53.25%	52.97%	52.10%	51.24%	52.60%
DTE Electric Company	DTE	49.97%	49.23%	51.12%	51.02%	50.50%	50.63%	50.50%	50.50%	50.43%
Duke Energy Carolinas, LLC	DUK	52.64%	52.10%	51.70%	52.98%	53.98%	53.49%	53.32%	52.81%	52.88%
Duke Energy Florida, LLC	DUK	49.65%	48.79%	49.92%	49.25%	49.46%	47.74%	46.95%	50.83%	49.07%
Duke Energy Indiana, LLC	DUK	52.79%	52.64%	52.54%	51.94%	51.71%	51.89%	52.15%	51.59%	52.16%
Duke Energy Kentucky, Inc.	DUK	56.58%	55.79%	53.72%	53.11%	50.69%	55.74%	55.43%	54.74%	54.48%
Duke Energy Ohio, Inc.	DUK	67.73%	67.10%	66.06%	66.24%	65.79%	65.38%	65.36%	66.39%	66.25%
Duke Energy Progress, LLC	DUK	50.76%	53.22%	52.82%	52.27%	51.06%	53.51%	52.99%	51.58%	52.28%
El Paso Electric Company	EE	48.57%	47.32%	49.46%	49.95%	49.81%	48.01%	47.48%	47.73%	48.54%
Kansas City Power & Light Company	EVRG	49.50%	48.88%	49.25%	49.15%	49.42%	48.47%	49.19%	49.61%	49.19%
Kansas Gas and Electric Company	EVRG	74.91%	74.45%	74.29%	74.18%	74.21%	73.69%	73.49%	73.37%	74.07%
KCP&L Greater Missouri Operations Company	EVRG	55.70%	52.03%	52.63%	52.40%	55.14%	54.57%	54.22%	54.47%	53.89%
Westar Energy (KPL)	EVRG	59.34%	58.68%	58.75%	58.74%	58.87%	58.22%	58.10%	59.68%	58.80%
Hawaii Electric Light Company, Inc.	HE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hawaiian Electric Company, Inc.	HE	56.09%	55.78%	57.44%	57.42%	58.11%	57.76%	57.71%	57.70%	57.25%
Maui Electric Company, Limited	HE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Florida Power & Light Company	NEE	64.78%	60.84%	61.23%	59.93%	63.00%	62.78%	62.05%	62.65%	62.16%
NorthWestern Corporation	NWE	48.36%	48.41%	47.48%	49.89%	48.86%	48.61%	48.61%	48.13%	48.54%
Oklahoma Gas and Electric Company	OGE	53.05%	54.25%	53.59%	53.36%	53.05%	52.75%	53.46%	56.09%	53.70%
Otter Tail Power Company	OTTR	53.49%	53.11%	52.67%	57.34%	57.24%	55.31%	55.31%	55.06%	54.94%
Arizona Public Service Company	PNW	53.68%	53.71%	53.18%	53.14%	53.05%	53.32%	53.20%	54.59%	53.48%
Public Service Company of New Mexico	PNM	48.01%	46.68%	46.20%	46.06%	47.58%	46.89%	46.38%	46.01%	46.73%
Portland General Electric Company	POR	50.51%	50.29%	50.14%	49.80%	50.17%	50.32%	50.28%	49.82%	50.17%
Alabama Power Company	SO	48.13%	47.51%	48.86%	47.07%	47.93%	47.25%	47.00%	46.97%	47.59%
Georgia Power Company	SO	57.27%	54.97%	53.81%	50.06%	50.35%	51.55%	50.36%	51.63%	52.50%
Gulf Power Company	SO	55.34%	54.90%	54.27%	54.19%	54.97%	54.41%	58.80%	56.16%	55.38%
Mississippi Power Company	SO	45.28%	43.87%	43.00%	39.34%	47.32%	46.76%	49.50%	49.62%	45.58%
Upper Michigan Energy Resources Corporation	WEC	55.08%	54.53%	70.04%	49.85%	NA	NA	NA	NA	57.37%
Wisconsin Electric Power Company	WEC	59.25%	59.09%	56.47%	55.94%	55.97%	55.76%	55.58%	56.74%	56.85%
Wisconsin Public Service Corporation	WEC	60.59%	59.53%	58.35%	58.06%	55.68%	55.21%	54.02%	55.78%	57.15%
Northern States Power Company - MN	XEL	52.64%	52.61%	52.59%	52.38%	52.22%	52.78%	52.62%	52.31%	52.52%
Northern States Power Company - WI	XEL	48.45%	53.85%	53.79%	53.36%	55.57%	55.22%	55.66%	54.93%	53.85%
Public Service Company of Colorado	XEL	56.08%	54.17%	56.67%	56.50%	55.64%	54.88%	57.00%	56.32%	55.91%
Southwestern Public Service Company	XEL	56.29%	53.88%	53.54%	53.55%	52.29%	54.61%	54.48%	53.93%	54.07%
		54.52%	54.00%	54.62%	53.92%	54.23%	54.00%	54.17%	54.13%	54.24%

Source: S&P Global Market Intelligence

Proxy Group Capital Structure

		% Long-Term Debt								
Company	Ticker	2018Q3	2018Q2	2018Q1	2017Q4	2017Q3	2017Q2	2017Q1	2016Q4	Average
ALLETE, Inc.	ALE	41.50%	41.16%	36.91%	37.49%	38.97%	39.38%	39.72%	40.98%	39.51%
Alliant Energy Corporation	LNT	48.87%	49.00%	50.26%	50.23%	47.91%	48.77%	49.16%	49.27%	49.18%
Ameren Corporation	AEE	46.78%	47.99%	46.96%	47.35%	46.44%	46.89%	47.23%	47.38%	47.13%
Avangrid, Inc.	AGR	43.87%	45.07%	43.45%	44.31%	46.12%	46.46%	44.34%	45.05%	44.83%
Black Hills Corporation	BKH	46.80%	46.18%	46.21%	45.60%	45.25%	46.16%	46.80%	47.19%	46.27%
CMS Energy Corporation	CMS	46.99%	47.14%	46.87%	47.75%	46.75%	47.03%	47.90%	48.76%	47.40%
DTE Energy Company	DTE	50.03%	50.77%	48.88%	48.98%	49.50%	49.37%	49.50%	49.50%	49.57%
Duke Energy Corporation	DUK	44.97%	45.06%	45.54%	45.70%	46.22%	45.38%	45.63%	45.34%	45.48%
El Paso Electric Company	EE	51.43%	52.68%	50.54%	50.05%	50.19%	51.99%	52.52%	52.27%	51.46%
Evergy, Inc	EVRG	40.14%	41.49%	41.27%	41.38%	40.59%	41.26%	41.25%	40.72%	41.01%
Hawaiian Electric Industries, Inc.	HE	43.91%	44.22%	42.56%	42.58%	41.89%	42.24%	42.29%	42.30%	42.75%
NextEra Energy, Inc.	NEE	35.22%	39.16%	38.77%	40.07%	37.00%	37.22%	37.95%	37.35%	37.84%
NorthWestern Corporation	NWE	51.64%	51.59%	52.52%	50.11%	51.14%	51.39%	51.39%	51.87%	51.46%
OGE Energy Corp.	OGE	46.95%	45.75%	46.41%	46.64%	46.95%	47.25%	46.54%	43.91%	46.30%
Otter Tail Corporation	OTTR	46.51%	46.89%	47.33%	42.66%	42.76%	44.69%	44.69%	44.94%	45.06%
Pinnacle West Capital Corporation	PNW	46.32%	46.29%	46.82%	46.86%	46.95%	46.68%	46.80%	45.41%	46.52%
PNM Resources, Inc.	PNM	51.99%	53.32%	53.80%	53.94%	52.42%	53.11%	53.62%	53.99%	53.27%
Portland General Electric Company	POR	49.49%	49.71%	49.86%	50.20%	49.83%	49.68%	49.72%	50.18%	49.83%
Southern Company	SO	48.50%	49.69%	50.02%	52.33%	49.86%	50.01%	48.59%	48.90%	49.74%
WEC Energy Group, Inc.	WEC	41.70%	42.28%	38.38%	45.38%	44.18%	44.52%	45.20%	43.74%	43.17%
Xcel Energy Inc.	XEL	46.63%	46.37%	45.85%	46.05%	46.07%	45.63%	45.06%	45.63%	45.91%
Mean		46.20%	46.75%	46.15%	46.46%	46.05%	46.43%	46.47%	46.41%	46.37%

Operating Company Capital Structure

		% Long-Term Debt								
Operating Company	Parent	2018Q3	2018Q2	2018Q1	2017Q4	2017Q3	2017Q2	2017Q1	2016Q4	Average
ALLETE (Minnesota Power)	ALE	39.57%	39.67%	39.62%	39.96%	40.27%	40.84%	41.29%	43.08%	40.54%
Superior Water, Light and Power Company	ALE	43.42%	42.66%	34.20%	35.01%	37.67%	37.92%	38.15%	38.88%	38.49%
Interstate Power and Light Company	LNT	50.36%	49.53%	50.08%	49.69%	48.21%	49.11%	49.77%	49.76%	49.56%
Wisconsin Power and Light Company	LNT	47.38%	48.48%	50.43%	50.77%	47.61%	48.44%	48.55%	48.78%	48.81%
Ameren Illinois Company	AEE	46.82%	47.26%	45.76%	46.62%	45.02%	45.45%	45.91%	46.56%	46.18%
Union Electric Company	AEE	46.74%	48.72%	48.16%	48.08%	47.86%	48.32%	48.55%	48.20%	48.08%
Central Maine Power Company	AGR	35.83%	36.47%	35.82%	36.18%	36.03%	36.73%	37.16%	37.61%	36.48%
New York State Electric & Gas Corporation	AGR	46.05%	49.01%	45.49%	46.70%	51.73%	49.76%	50.32%	51.16%	48.78%
Rochester Gas and Electric Corporation	AGR	51.84%	52.23%	49.20%	50.37%	51.06%	51.54%	44.75%	45.70%	49.58%
United Illuminating Company	AGR	41.77%	42.57%	43.30%	44.00%	45.65%	47.83%	45.12%	45.74%	44.50%
Black Hills Colorado Electric Utility Company, LP	BKH	46.96%	45.15%	45.32%	44.31%	45.04%	44.99%	46.92%	47.80%	45.81%
Black Hills Power, Inc.	BKH	46.49%	46.70%	46.78%	46.51%	43.86%	46.74%	46.76%	47.12%	46.37%
Cheyenne Light, Fuel and Power Company	BKH	46.96%	46.68%	46.54%	45.99%	46.84%	46.73%	46.71%	46.65%	46.64%
Consumers Energy Company	CMS	46.99%	47.14%	46.87%	47.75%	46.75%	47.03%	47.90%	48.76%	47.40%
DTE Electric Company	DTE	50.03%	50.77%	48.88%	48.98%	49.50%	49.37%	49.50%	49.50%	49.57%
Duke Energy Carolinas, LLC	DUK	47.36%	47.90%	48.30%	47.02%	46.02%	46.51%	46.68%	47.19%	47.12%
Duke Energy Florida, LLC	DUK	50.35%	51.21%	50.08%	50.75%	50.54%	52.26%	53.05%	49.17%	50.93%
Duke Energy Indiana, LLC	DUK	47.21%	47.36%	47.46%	48.06%	48.29%	48.11%	47.85%	48.41%	47.84%
Duke Energy Kentucky, Inc.	DUK	43.42%	44.21%	46.28%	46.89%	49.31%	44.26%	44.57%	45.26%	45.52%
Duke Energy Ohio, Inc.	DUK	32.27%	32.90%	33.94%	33.76%	34.21%	34.62%	34.64%	33.61%	33.75%
Duke Energy Progress, LLC	DUK	49.24%	46.78%	47.18%	47.73%	48.94%	46.49%	47.01%	48.42%	47.72%
El Paso Electric Company	EE	51.43%	52.68%	50.54%	50.05%	50.19%	51.99%	52.52%	52.27%	51.46%
Kansas City Power & Light Company	EVRG	50.50%	51.12%	50.75%	50.85%	50.58%	51.53%	50.81%	50.39%	50.81%
Kansas Gas and Electric Company	EVRG	25.09%	25.55%	25.71%	25.82%	25.79%	26.31%	26.51%	26.63%	25.93%
KCP&L Greater Missouri Operations Company	EVRG	44.30%	47.97%	47.37%	47.60%	44.86%	45.43%	45.78%	45.53%	46.11%
Westar Energy (KPL)	EVRG	40.66%	41.32%	41.25%	41.26%	41.13%	41.78%	41.90%	40.32%	41.20%
Hawaii Electric Light Company, Inc.	HE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hawaiian Electric Company, Inc.	HE	43.91%	44.22%	42.56%	42.58%	41.89%	42.24%	42.29%	42.30%	42.75%
Maui Electric Company, Limited	HE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Florida Power & Light Company	NEE	35.22%	39.16%	38.77%	40.07%	37.00%	37.22%	37.95%	37.35%	37.84%
NorthWestern Corporation	NWE	51.64%	51.59%	52.52%	50.11%	51.14%	51.39%	51.39%	51.87%	51.46%
Oklahoma Gas and Electric Company	OGE	46.95%	45.75%	46.41%	46.64%	46.95%	47.25%	46.54%	43.91%	46.30%
Otter Tail Power Company	OTTR	46.51%	46.89%	47.33%	42.66%	42.76%	44.69%	44.69%	44.94%	45.06%
Arizona Public Service Company	PNW	46.32%	46.29%	46.82%	46.86%	46.95%	46.68%	46.80%	45.41%	46.52%
Public Service Company of New Mexico	PNM	51.99%	53.32%	53.80%	53.94%	52.42%	53.11%	53.62%	53.99%	53.27%
Portland General Electric Company	POR	49.49%	49.71%	49.86%	50.20%	49.83%	49.68%	49.72%	50.18%	49.83%
Alabama Power Company	SO	51.87%	52.49%	51.14%	52.93%	52.07%	52.75%	53.00%	53.03%	52.41%
Georgia Power Company	SO	42.73%	45.03%	46.19%	49.94%	49.65%	48.45%	49.64%	48.37%	47.50%
Gulf Power Company	SO	44.66%	45.10%	45.73%	45.81%	45.03%	45.59%	41.20%	43.84%	44.62%
Mississippi Power Company	SO	54.72%	56.13%	57.00%	60.66%	52.68%	53.24%	50.50%	50.38%	54.42%
Upper Michigan Energy Resources Corporation	WEC	44.92%	45.47%	29.96%	50.15%	NA	NA	NA	NA	42.63%
Wisconsin Electric Power Company	WEC	40.75%	40.91%	43.53%	44.06%	44.03%	44.24%	44.42%	43.26%	43.15%
Wisconsin Public Service Corporation	WEC	39.41%	40.47%	41.65%	41.94%	44.32%	44.79%	45.98%	44.22%	42.85%
Northern States Power Company - MN	XEL	47.36%	47.39%	47.41%	47.62%	47.78%	47.22%	47.38%	47.69%	47.48%
Northern States Power Company - WI	XEL	51.55%	46.15%	46.21%	46.64%	44.43%	44.78%	44.34%	45.07%	46.15%
Public Service Company of Colorado	XEL	43.92%	45.83%	43.33%	43.50%	44.36%	45.12%	43.00%	43.68%	44.09%
Southwestern Public Service Company	XEL	43.71%	46.12%	46.46%	46.45%	47.71%	45.39%	45.52%	46.07%	45.93%
Mean		45.48%	46.00%	45.38%	46.08%	45.77%	46.00%	45.83%	45.87%	45.76%

Cost of Long-Term Debt Comparison

Issue	Initial Offering	Date of Offering	Date of Maturity	Years to Maturity	Coupon	Premiums or Discounts	Net Proceeds	Yield	Bloomberg Fair Value Curve BFV Term	Bloomberg Fair Value Curve Utility A-Rated	Bloomberg Fair Value Curve Utility BBB-Rated
Pollution Control Rev. Bonds											
Rockport 2002A	$50,000,000	6/3/2002	6/1/2025	23	2.75%	($1,091,674)	$48,908,326	2.88%	25	7.02%	7.63%
Rockport 2009A	$50,000,000	3/26/2009	6/1/2025	16	3.05%	($3,499,294)	$46,500,706	3.62%	16	6.20%	7.41%
Rockport 2009B	$50,000,000	3/26/2009	6/1/2025	16	3.05%	($1,580,739)	$48,419,261	3.30%	16	6.20%	7.41%
Lawrenceburg, 2008 Series H	$52,000,000	5/20/2008	11/1/2021	13	2.33%	($3,002,838)	$48,997,162	2.85%	13	5.86%	6.49%
Rockport Series D	$40,000,000	10/13/2003	4/1/2025	21	2.05%	($3,431,712)	$36,568,288	2.57%	4	2.37%	2.60%
Senior Unsecured Notes											
I&M Series H	$400,000,000	11/14/2006	3/15/2037	30	6.05%	($22,115,857)	$377,884,143	6.47%	30	5.67%	5.97%
I&M Series J	$250,000,000	3/18/2013	3/15/2023	10	3.20%	($18,437,101)	$231,562,899	4.10%	10	2.84%	3.44%
I&M Series K	$400,000,000	3/3/2016	3/15/2046	30	4.55%	($5,408,755)	$394,591,245	4.63%	30	4.08%	4.69%
I&M Series L	$300,000,000	6/29/2017	7/1/2047	30	3.75%	($5,227,683)	$294,772,317	3.85%	30	3.97%	4.30%
I&M Series M	$350,000,000	5/2/2018	5/15/2028	10	3.85%	($3,967,894)	$346,032,106	3.99%	10	3.94%	4.28%
I&M Series N	$475,000,000	8/8/2018	8/15/2048	30	4.25%	($18,043,146)	$456,956,854	4.48%	30	4.24%	4.59%
I&M Series O	$300,000,000	11/6/2019	11/15/2049	30	4.71%	($3,223,069)	$296,776,931	4.78%	31	4.24%	4.59%
Term Loan Facility											
3-year Term Loan	$200,000,000	5/9/2018	5/9/2021	3	4.18%	($508,528)	$199,491,472	4.27%	3	1.68%	1.98%
Other Debt											
Fort Wayne Lease	$26,802,388	3/1/2010	3/1/2025	15	6.00%	0	$26,802,388	6.00%	15	5.69%	5.75%
										Bloomberg Fair Value Curve A-Rated	Bloomberg Fair Value Curve BBB-Rated
TOTAL	$2,943,802,388		Weighted Averages:		4.28%			4.53%		4.19%	4.62%

Notes:
Sources: Exhibit A-7 Page 4 and Bloomberg Professional. Weighted average cost of debt does not include underwriting fees or other amortized costs.
Bloomberg Fair Value Curve yields are 30-day averages.