ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 1 of 176

BEFORE
THE PUBLIC SERVICE COMMISSION OF
SOUTH CAROLINA

DOCKET NO. 2018-318-E

In the Matter of:	)	
	)	
Application of Duke Energy Progress,	)	**DIRECT TESTIMONY OF**
LLC for Adjustments in Electric Rate	)	**ROBERT B. HEVERT FOR**
Schedules and Tariffs	)	**DUKE ENERGY PROGRESS, LLC**

TABLE OF CONTENTS

I. INTRODUCTION **3**

II. PURPOSE AND OVERVIEW OF TESTIMONY **4**

III. SUMMARY OF ISSUES SURROUNDING COST OF EQUITY ESTIMATION IN REGULATORY PROCEEDINGS **7**

IV. PROXY GROUP SELECTION **14**

V. COST OF EQUITY ESTIMATION **17**

Constant Growth DCF Model ***19***

Multi-Stage DCF Model ***28***

Capital Asset Pricing Model ***34***

Bond Yield Plus Risk Premium Analysis ***38***

VI. BUSINESS RISKS AND OTHER CONSIDERATIONS **42**

Generation Portfolio ***42***

Coal-Fired Generation 43

Nuclear Generation Portfolio 47

Distributed Energy 51

Capital Expenditures ***57***

Severe Weather Risk ***58***

Regulatory Risk ***59***

Flotation Costs *63*

VII. CAPITAL MARKET ENVIRONMENT **67**

VIII. CONCLUSIONS **80**

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 2 of 176

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 3 of 176

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME, AFFILIATION, AND BUSINESS ADDRESS.

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 Public Service Commission of South Carolina ("Commission") on behalf of Duke Energy Progress, LLC ("Duke Energy Progress" 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 30 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, dividend policy, 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 (including this Commission), the Federal Energy Regulatory Commission, U.S. Federal Court, and the Alberta Utilities Commission. A summary of my professional and educational background, including a list of my testimony in prior proceedings, is included in Attachment A to my Direct Testimony.

II. PURPOSE AND OVERVIEW OF TESTIMONY

Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?

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] My analysis and conclusions are supported by the data presented in Exhibit No. RBH-1 through Exhibit No. RBH-7, which have been prepared by me or under my direction.

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

A. My analysis indicates that the Company's Cost of Equity currently is in the range of 10.25 percent to 11.00 percent. Based on the quantitative and qualitative analyses discussed throughout my Direct Testimony, including the risk profile of the Company, it is my view that 10.75 percent is a reasonable and appropriate

[1] Throughout my testimony, I interchangeably use the terms "ROE" and "Cost of Equity."

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 4 of 176

estimate of the Company's Cost of Equity.

Q. PLEASE PROVIDE A BRIEF OVERVIEW OF THE ANALYSIS THAT LED TO YOUR ROE DETERMINATION.

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 three widely accepted approaches to develop my ROE determination: (1) the Constant Growth and Multi-Stage forms of the Discounted Cash Flow ("DCF") model; (2) the Capital Asset Pricing Model ("CAPM"); and (3) the Bond Yield Plus Risk Premium approach.

In addition to the methods noted above, I considered (1) the risks associated with certain aspects of the Company's generation portfolio; (2) the Company's significant capital expenditure plan; (3) the risk associated with severe weather; (4) the risk associated with the Company's regulatory environment; and (5) the cost of issuing common stock. I also considered the changing capital market and business conditions including changes in Federal monetary policy, increases in current and projected government bond yields, and the effects of the Tax Cuts and Jobs Act of 2017 ("TCJA") on the utility industry. Although I did not make explicit adjustments to my ROE estimates for those factors, I did take them into consideration in determining where the Company's Cost of Equity falls within the range of analytical results.

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 5 of 176

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

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

- Section III – provides a summary of issues regarding Cost of Equity estimation in regulatory proceedings and discusses the regulatory guidelines pertinent to the development of the cost of capital;
- Section IV – explains my selection of the proxy group used to develop my analytical results;
- Section V – explains my analysis and the analytical bases for my ROE determination;
- Section VI – provides a discussion of specific business risks and other considerations that have a direct bearing on the Company's Cost of Equity;
- Section VII – highlights the current capital market conditions and their effect on the Company's Cost of Equity; and
- Section VIII – summarizes my conclusions.

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 6 of 176

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

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 that investors require to make an equity investment in a firm. That is, investors will provide funds to a firm only if the return that they *expect* is equal to, or greater than, the return that 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.

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 7 of 176

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 8 of 176

1 Although both debt and equity have required costs, they differ in certain
2 fundamental ways. Most noticeably, the Cost of Debt is contractually defined and
3 can be directly observed as the interest rate or yield on debt securities.[2] The Cost
4 of Equity, on the other hand, is neither directly observable nor a contractual
5 obligation. Rather, equity investors have a claim on cash flows only after debt
6 holders are paid; the uncertainty (or risk) associated with those residual cash flows
7 determines the Cost of Equity. Because equity investors bear the "residual risk,"
8 they take greater risks and require higher returns than debt holders. In that basic
9 sense, equity and debt investors differ: they invest in different securities, face
10 different risks, and require different returns.

11 Whereas the Cost of Debt can be directly observed, the Cost of Equity must
12 be estimated or inferred based on market data and various financial models. As
13 discussed throughout my Direct Testimony, each of those models is subject to
14 specific assumptions, which may be more or less applicable under differing market
15 conditions. In addition, because the Cost of Equity is premised on opportunity
16 costs, the models typically are applied to a group of "comparable" or "proxy"
17 companies. The choice of models (including their inputs), the selection of proxy
18 companies, and the interpretation of the model results all require the application of
19 reasoned judgment. That judgment should consider data and information that is not
20 necessarily included in the models themselves. In the end, the estimated Cost of

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

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 PROVIDE A BRIEF SUMMARY OF THE GUIDELINES ESTABLISHED BY THE UNITED STATES SUPREME COURT (THE "COURT") FOR THE PURPOSE OF DETERMINING THE RETURN ON EQUITY.

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*");[3] and (2) *Federal Power Comm'n v. Hope Natural Gas Co.* ("*Hope*").[4] In *Bluefield*, the Court stated:

> A public utility is entitled to such rates as will permit it to earn a return upon 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.[5]

The Court therefore recognized that: (1) a regulated public utility cannot remain financially sound unless the return it is allowed to earn on its invested

[3] *See Bluefield Water Works and Improvement Co. v. Public Service Comm'n*. 262 U.S. 679, 692 (1923).
[4] *See Federal Power Comm'n v. Hope Natural Gas Co*., 320 U.S. 591, 603 (1944).
[5] *Bluefield Water Works and Improvement Co. v. Public Service Comm'n*. 262 U.S. 679, 692 (1923).

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 9 of 176

capital is at least equal to the Cost of Capital (the principle relating to the demand for capital); and (2) a regulated public utility 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 similar risk (the principle relating to the supply of capital).

In *Hope*, the Court reiterated the financial integrity and capital attraction principles of the *Bluefield* case:

> From the investor or company point of view it is important that there be enough revenue not only for operating expenses but also for the capital costs of the business. These include service on the debt and dividends on the stock... By that standard the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks. That return, moreover, should be sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain its credit and to attract capital.[6]

In summary, the Court clearly has recognized that the fair rate of return on equity should be: (1) comparable to returns investors expect to earn on other investments of similar risk; (2) sufficient to assure confidence in the company's financial integrity; and (3) adequate to maintain and support the company's credit and to attract capital.

[6] *Federal Power Comm'n v. Hope Natural Gas Co*., 320 U.S. 591, 603 (1944).

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 10 of 176

Q. HAS THE COMMISSION ALSO LOOKED TO THE *HOPE* AND *BLUEFIELD* STANDARDS AS GUIDANCE FOR SETTING RATES?

A. Yes. The Commission and the South Carolina courts uphold the precedents of the *Hope* and *Bluefield* cases. Specifically, the standards established in the *Hope* and *Bluefield* decisions were acknowledged by the Commission in an Order issued in 2013.[7] The *Hope* and *Bluefield* standards also were recognized by the Supreme Court of South Carolina in *Southern Bell Tel. & Tel. Co. v. Public Service Comm'n of South Carolina*.[8]

Q. ASIDE FROM THOSE LONG-HELD STANDARDS, WHY IS IT IMPORTANT FOR A UTILITY TO BE ALLOWED THE OPPORTUNITY TO EARN A RETURN ADEQUATE TO ATTRACT CAPITAL AT REASONABLE TERMS?

A. A return that is adequate to attract capital at reasonable terms enables the utility to provide 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 the Company with the opportunity to earn an ROE that is: (1) adequate to attract capital at reasonable terms; (2) sufficient to ensure its

---

[7] *See* Public Service Comm'n of South Carolina, Docket No. 2013-59-E, Order No. 2013-661 dated September 18, 2013, at 19-20.

[8] *See Southern Bell Tel. & Tel. Co. v. Public Service Comm'n of South Carolina*, 244 S.E.2d 278 (1978).

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 11 of 176

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 the Company to provide safe, reliable electric utility service while maintaining its financial integrity.

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

A. As noted earlier (and as discussed in more detail later in my Direct Testimony), the Cost of Equity is estimated by the use of various financial models. By their nature, those models produce a range of results from which the ROE is determined. That determination must be based on a comprehensive review of relevant data and information; it 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 methods, and the consideration given to them, recently was addressed by the Federal Energy Regultory Commission ("FERC"). 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

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 12 of 176

not produce just and reasonable results."[9] As FERC explained, because the Cost of Equity depends on what the market expects, it is important understand "how investors analyze and compare their investment opportunities."[10] 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 other methods…"[11] Those methods include the CAPM and the Risk Premium method, which I have applied in this proceeding.

In summary, practitioners, academics, and regulatory commissions recognize that financial models are tools to be used in the ROE estimation process, and that strict adherence to any single approach, or to the specific results of any single approach, can lead to flawed or misleading conclusions. That position is consistent with the *Hope* and *Bluefield* principle that it is the analytical result, as opposed to the method employed, that is controlling in arriving at ROE determinations. Thus, a reasonable ROE estimate appropriately considers multiple methods, and the reasonableness of their individual and collective results in the context of observable, relevant market information.

---

[9] Docket No. EL11-66-001, *et al.*, *Order Directing Briefs*, at para. 30 (October 16, 2018).
[10] *Ibid.*, at para. 33.
[11] *Ibid.*, at para. 35.

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 13 of 176

IV. 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 THE COMPANY?

A. Because the ROE is a market-based concept and the Company is not a publicly traded entity, it is necessary to establish a group of comparable, publicly traded companies to serve as its "proxy." Even if the Company were a publicly traded entity, short-term events could bias its market value during a given period of time. A significant benefit of using a proxy group is that it moderates 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. Not necessarily. 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. Therefore, 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.

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 14 of 176

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 15 of 176

Q. PLEASE PROVIDE A SUMMARY PROFILE OF THE COMPANY.

A. Duke Energy Progress is a wholly owned subsidiary of Duke Energy Corporation ("Duke Energy") that provides electric generation, transmission, and distribution services to approximately 1.50 million retail customers in in portions of North Carolina and South Carolina.[12] Duke Energy's long-term issuer credit ratings are A- (Outlook: Stable) from Standard & Poor's ("S&P") and Baa1 (Outlook: Stable) from Moody's Investors Service ("Moody's"). The Company's long-term and senior unsecured credit ratings are A- (S&P) and A2 (Moody's).[13]

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

A. A proxy group should consist of companies with risk profiles comparable to the subject company. In selecting the proxy group, my objective was to balance the competing interests 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;

[12] *See* Duke Energy Corp., SEC Form 10-K/A for the fiscal year ended December 31, 2017, at 21.
[13] Source: S&P Global Market Intelligence.

- 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;
- I excluded companies whose regulated operating income over the three most recently reported fiscal years composed less than 60.00 percent of the respective totals for that company;
- 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;[14]
- I eliminated companies that are currently known to be party to a significant or transformative transaction.

Q. DID YOU INCLUDE DUKE ENERGY 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 20 companies:

[14] In prior cases (for example, Docket No. 2013-59-E), I excluded companies whose regulated electric operating income over the three most recently reported fiscal years represented less than 90.00 percent of total regulated operating income. However, due to recent consolidation in the industry, that threshold would produce a relatively small group of proxy companies. As such, I have lowered the threshold to 60.00 percent.

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 16 of 176

Table 1: Proxy Group Screening Results

Company	Ticker
ALLETE, Inc.	ALE
Alliant Energy Corporation	LNT
Ameren Corporation	AEE
American Electric Power Company, Inc.	AEP
Avangrid, Inc.	AGR
Black Hills Corporation	BKH
CMS Energy Corporation	CMS
DTE Energy Company	DTE
El Paso Electric Company	EE
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

V. COST OF EQUITY ESTIMATION

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

A. Regulated utilities primarily use common stock and long-term debt to finance their permanent property, plant, and equipment. The rate of return ("ROR") for a regulated utility is based on its weighted average Cost of Capital, in which the costs of the individual sources of capital are weighted by their respective book values. As noted above, the ROE is market-based and, therefore, must be estimated based

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 17 of 176

on observable market information.

Q. HOW IS THE REQUIRED ROE DETERMINED?

A. Because the Cost of Equity is not directly observable it must be estimated based on both quantitative and qualitative information. Although a number of 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.[15] 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 both prudent and appropriate to use multiple methodologies in order to mitigate the effects of assumptions and inputs associated with any single approach. As such, I have considered the results of the Constant Growth and Multi-Stage Growth forms of the DCF model, the Capital Asset Pricing Model, and the Bond Yield Plus Risk Premium approach.

[15] *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.

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 18 of 176

Constant Growth DCF Model

Q. PLEASE 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:

$$P_0 = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \cdots + \frac{D_t}{(1+k)^t} \quad [1]$$

where P_0 represents the current stock price, $D_1 \ldots D_t$ represent expected future dividends, and k is the discount rate, or required ROE. Equation [1] is a standard present value calculation that can be simplified and rearranged into the familiar form:

$$k = \frac{D(1+g)}{P_0} + g \quad [2]$$

Equation [2] 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 growth rate.

Q. WHAT ASSUMPTIONS ARE REQUIRED FOR 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) the dividend payout ratio remains constant; (3) the Price to Earnings ("P/E") multiple remains constant in perpetuity; and (4) the discount rate is greater than the expected growth rate, and

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 19 of 176

remains constant over time.

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

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

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.

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 20 of 176

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 [2] above) assumes a single growth estimate in perpetuity. Accordingly, to reduce the long-term growth rate to a single measure, we 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. Because dividend growth can only be sustained by earnings growth, the model should incorporate a variety of measures of long-term earnings growth. That can be accomplished by averaging 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. For the purposes of the Constant Growth DCF model, therefore, growth in EPS represents the appropriate measure of long-term growth.

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 21 of 176

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

A. The relationship between various growth rates and stock valuation metrics has been the subject of considerable academic research.[16] As noted over 40 years ago by Charles Phillips in The Economics of Regulation:

> 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.[17]

Phillips's 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.[18] 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."[19] Other research specifically

---

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

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

18 *See, e.g.*, 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).

19 Vander Weide and Carleton, *Investor Growth Expectations: Analysts vs. History*, The Journal of Portfolio Management (Spring 1988). The Vander Weide and Carleton study was updated in 2004

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 22 of 176

notes 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." 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."[20] Similarly, Brigham, Shome, and Vinson noted that "evidence in the current literature indicates that (i) analysts' forecasts are superior to forecasts based solely on time series data, and (ii) investors do rely on analysts' forecasts."[21]

To that point, the research of Carleton and Vander Weide found earnings growth projections have a statistically significant relationship to stock valuation levels, whereas dividend growth rates did not.[22] Those findings suggest investors form their investment decisions based on expectations of growth in earnings, not dividends. Consequently, earnings growth, not dividend growth, is the appropriate estimate for the purpose of the Constant Growth DCF model.

---

under the direction of Dr. Vander Weide. The results of the updated study were consistent with the original study's conclusions.

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

[21] 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).

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

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 23 of 176

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

A. I applied the DCF model to the proxy group of 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 as of October 12, 2018, for the term P_0; and
- The annualized dividend per share as of October 12, 2018, for the term D_0.

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

- The Zack's consensus long-term earnings growth estimates;
- The First Call consensus long-term earnings growth estimates; and
- The Value Line earnings growth estimates.

Q. HOW DID YOU CALCULATE THE DCF RESULTS?

A. For each proxy company, I calculated the mean, mean high, and mean low results. For the mean result, I combined the average of the EPS growth rate estimates reported by Value Line, Zacks, and First Call with the subject company's dividend yield for each proxy company and then calculated the average result for those estimates. 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 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

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 24 of 176

company, and calculating the average result for those estimates.

Q. WHAT ARE THE RESULTS OF YOUR DCF ANALYSES?

A. My Constant Growth DCF results are summarized in Table 2 below (*see also* Exhibit No. RBH-1).

Table 2: Constant Growth DCF Results

	Mean Low	Mean	Mean High
30-Day Average	8.36%	9.16%	10.08%
90-Day Average	8.39%	9.19%	10.11%
180-Day Average	8.50%	9.30%	10.22%

Q. DO YOU BELIEVE THAT THE CONSTANT GROWTH DCF MODEL CURRENTLY PROVIDES A REASONABLE ESTIMATE OF THE COMPANY'S COST OF EQUITY?

A. No, I do not. As a practical matter, the period over which my analyses were performed included market data that were inconsistent with that model's fundamental assumptions. As such, the model produced results at odds with current observable capital market conditions. Moreover, I do not believe the recent elevated equity valuation levels produced by the model are due to lower levels of perceived risk. Rather, it is my view that the valuation levels are related to the "reach for yield" that sometimes occurs during periods of low Treasury yields.

Regardless of the method employed, however, an authorized ROE that is well below returns authorized for other utilities (1) runs counter to the *Hope* and

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 25 of 176

Bluefield "comparable risk" standard, (2) would place the Company at a competitive disadvantage, and (3) would make it difficult for the Company to compete for capital at reasonable terms.

Q. PLEASE SUMMARIZE THE REASONS YOU BELIEVE THE CONSTANT GROWTH DCF MODEL SHOULD NOT BE GIVEN UNDUE WEIGHT IN THIS PROCEEDING.

A. As explained earilier, the model assumes that the return estimated today will be the same return required in the future, even though the Federal Reserve only recently has begun its move toward monetary policy normalization. That process of normalization, together with the uncertainty surrounding the "unwinding" of the assets put on the Federal Reserve's balance sheet during its "Quantitative Easing" initiatives introduce a degree of risk, and a likelihood of increasing interest rates, not present in the current market. As also discussed later in my Direct Testimony, other methods more directly reflect the risk premium required by investors in response to market and industry risks. On balance, it is my view that the Constant Growth DCF method should be given less weight than other methods in establishing the Company's ROE.

Q. WITH THOSE POINTS IN MIND, HOW DID YOU REFLECT THE CONSTANT GROWTH DCF RESULTS IN YOUR ROE RANGE AND RECOMMENDATION?

A. I first recognized that the model's mean and mean low results are well below a reasonable estimate of the Company's Cost of Equity. For example, of the 1,403

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 26 of 176

vertically-integrated electric utility rate cases provided by Regulatory Research Associates that disclosed the awarded ROE since 1980, none have been authorized an ROE below 9.00 percent.[23] On that basis alone, the mean and mean low results are highly improbable.

I then considered why the Constant Growth model is producing such low estimates of the Company's Cost of Equity. In one sense, relatively low dividend yields should be associated with relatively high growth rates. That is, low dividend yields are the result of relatively high stock prices which, in turn, should be associated with relatively high growth rates. If those relationships do not hold, the model's results should be viewed with some caution.

I also recognize that whereas the Constant Growth DCF model essentially assumes existing capital market conditions will remain constant, Risk Premium-based methods (discussed later in this Section) better reflect the changing capital market environment (*see* Section VII). Because it is important to reflect the results of different models, and the mean and mean low Constant Growth DCF results are far removed from recently authorized returns, I conclude they should be given less weight than other methods in determining the Company's ROE.

[23] Source: Regulatory Research Associates.

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 27 of 176

Multi-Stage DCF Model

Q. IS IT REASONABLE TO CONSIDER ANALYTICAL MODELS IN ADDITION TO THE CONSTANT GROWTH DCF MODEL?

A. Yes. First, as noted earlier, it is both prudent and appropriate to use multiple methodologies in order to mitigate the effects of assumptions and inputs associated with any single approach. Second, the Constant Growth DCF model assumes that earnings, dividends, and book value will grow at the same, constant rate in perpetuity; that the payout ratio will remain constant in perpetuity; that the P/E ratio will remain constant; and that the return required today will be the same return required every year in the future. However, those assumptions are not likely to hold. In particular, it is likely that over time, payout ratios will increase from their current levels. In addition, to the extent long-term interest rates increase over the next few years, it is likely that the Cost of Equity also will increase. It therefore is appropriate to consider more than one analytical model in estimating the ROE.

Q. WHAT OTHER FORM OF THE DCF MODEL HAVE YOU USED?

A. To address the considerations underlying the Constant Growth form of the DCF model, discussed above, I also considered the Multi-Stage (three-stage) Discounted Cash Flow Model. The Multi-Stage model, which is an extension of the Constant Growth form, enables the analyst to specify growth rates over three distinct stages (*i.e.*, time periods). As with the Constant Growth form of the DCF model, the Multi-Stage form defines the Cost of Equity as the discount rate that sets the current price equal to the discounted value of future cash flows. Unlike the Constant

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 28 of 176

Growth form, however, the Multi-Stage model must be solved in an iterative fashion. As such, the Multi-Stage DCF model enables analysts to address the limiting, and likely unrealistic assumptions underlying the Constant Growth form of the model.

Q. PLEASE DESCRIBE THE STRUCTURE OF YOUR MULTI-STAGE MODEL.

A. As noted above, the model sets the subject company's stock price equal to the present value of future cash flows received over three "stages." In the first two stages, "cash flows" are defined as projected dividends. In the third stage, "cash flows" equal both dividends and the expected price at which the stock will be sold at the end of the period (*i.e.*, the "terminal price"). I calculated the terminal price based on the Gordon model, which defines the price as the expected dividend divided by the difference between the Cost of Equity (*i.e.*, the discount rate) and the long-term expected growth rate. In essence, the terminal price is defined by the present value of the remaining "cash flows" in perpetuity. In each of the three stages, the dividend is the product of the projected earnings per share and the expected dividend payout ratio. A summary description of the model is provided in Table 3 (below).

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 29 of 176

Table 3: Multi-Stage DCF Model Structure

Stage	0	1	2	3
Cash Flow Component	Initial Stock Price	Expected Dividend	Expected Dividend	Expected Dividend + Terminal Value
Inputs	Stock Price Earnings Per Share ("EPS") Dividends Per Share ("DPS")	Expected EPS Expected DPS	Expected EPS Expected DPS	Expected EPS Expected DPS Terminal Value
Assumptions	30-, 90-, and 180-day average stock price	EPS Growth Rate Payout Ratio	Growth Rate Change Payout Ratio Change	Long-term Growth Rate Long-term Payout Ratio

Q. WHAT ARE THE ANALYTICAL BENEFITS OF YOUR THREE-STAGE MODEL?

A. The primary benefits relate to the flexibility provided by the model's formulation. Since the model provides the ability to specify near-, intermediate-, and long-term growth rates, for example, it avoids the sometimes-limiting assumption that the subject company will grow at the same, constant rate in perpetuity. In addition, by calculating the dividend as the product of earnings and the payout ratio, the model enables analysts to reflect assumptions regarding the timing and extent of changes in the payout ratio to reflect, for example, increases or decreases in expected capital spending, or transition from current payout levels to long-term expected levels. In that regard, because the model relies on multiple sources of earnings growth rate assumptions, it is not limited to a single source, such as Value Line, for all inputs, and mitigates the potential bias associated with relying on a single source of growth

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 30 of 176

estimates.[24]

The model also enables an assessment of the reasonableness of the inputs and results by reference to certain market-based metrics. For example, the stock price estimate can be divided by the expected earnings per share in the final year to calculate an average P/E ratio. Similarly, the terminal P/E ratio can be divided by the terminal growth rate to develop a Price to Earnings Growth ("PEG") ratio. To the extent that either the projected P/E or PEG ratios are inconsistent with either historical or expected levels, it may indicate incorrect or inconsistent assumptions within the balance of the model.

Q. PLEASE SUMMARIZE YOUR INPUTS TO THE MULTI-STAGE DCF MODEL.

A. I applied the Multi-Stage model to the proxy group described earlier in my Direct Testimony. My assumptions with respect to the various model inputs are described in Table 4 (below).

[24] *See*, for example, Harris and Marston, *Estimating Shareholder Risk Premia Using Analysts' Growth Forecasts*, Financial Management, 21 (Summer 1992).

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 31 of 176

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 32 of 176

1 **Table 4: Multi-Stage DCF Model Assumptions**

	Stage			
	Initial	**First**	**Transition**	**Terminal**
Stock Price	30-, 90-, and 180-day average stock price as of October 12, 2018			
Earnings Growth	2017 actual EPS escalated by Period 1 growth rate	EPS growth as average of (1) Value Line; (2) Zacks; (3) First Call; (4) Retention Growth rates	Transition to Long-term GDP growth	Long-term GDP growth
Payout Ratio		Value Line company-specific	Transition to long-term industry payout ratio	Long-term industry average payout ratio
Terminal Value				Expected dividend in final year divided by solved Cost of Equity less long-term growth rate

2 **Q. HOW DID YOU CALCULATE THE LONG-TERM GDP GROWTH RATE?**

3 A. The long-term growth rate of 5.46 percent is based on the real GDP growth rate of
4 3.22 percent from 1929 through 2017, and an inflation rate of 2.17 percent. The
5 GDP growth rate is calculated as the compound growth rate in the chain-weighted
6 GDP for the period from 1929 through 2017.[25] The rate of inflation of 2.17 percent
7 is an average of two components: (1) the compound annual forward rate starting in
8 ten years (*i.e.*, 2028, which is the beginning of the terminal period) based on the

[25] *See* Bureau of Economic Analysis, "Current-Dollar and 'Real' Gross Domestic Product," September 27, 2018 update.

30-day average spread between yields on long-term nominal Treasury Securities and long-term Treasury Inflation Protected Securities, known as the "TIPS spread" of 2.13 percent;[26] and (2) the projected *Blue Chip Financial Forecast* of CPI for 2025 – 2029 of 2.20 percent.[27]

The real GDP growth rate projection assumes that absent specific knowledge to the contrary, over time real GDP growth will revert to its long-term mean. Because estimating the Cost of Equity is a market-based exercise, it is important to reflect the sentiments and expectations of investors to the extent possible. The resulting 5.46 percent projected nominal GDP growth rate is 66 basis points below the long-term average of 6.12 percent.[28]

Q. WHAT WERE YOUR SPECIFIC ASSUMPTIONS WITH RESPECT TO THE PAYOUT RATIO?

A. As noted in Table 4, for the first two periods I relied on the first year and long-term projected payout ratios reported by Value Line for each of the proxy companies.[29] I then assumed that by the end of the second period (*i.e.*, the end of year 10), the payout ratio will converge to the long-term industry average of 65.57 percent.[30]

---

26 *See* Board of Governors of the Federal Reserve System, "Table H.15 Selected Interest Rates."
27 *Blue Chip Financial Forecasts*, Vol 37, No. 6, June 1, 2018, at 14.
28 Source: Bureau of Economic Analysis.
29 As reported in the Value Line Investment Survey as "All Div'ds to Net Prof." Please note, Value Line is a source frequently cited in rate proceedings, and is the only source that consistently provides intermediate-term payout ratio projections.
30 Source: Bloomberg Professional.

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 33 of 176

Q. WHAT ARE THE RESULTS OF YOUR MULTI-STAGE DCF ANALYSIS?

A. The results of my analysis are shown in Table 5 below.

Table 5: Multi-Stage Discounted Cash Flow Model Results[31]

	Low	Mean	High
30-Day Average	8.90%	9.09%	9.32%
90-Day Average	8.93%	9.12%	9.35%
180-Day Average	9.05%	9.24%	9.47%

Capital Asset Pricing Model

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

A. The CAPM is a risk premium method that estimates the Cost of Equity for a given security as a function of a risk-free return plus a risk premium (to compensate investors for the non-diversifiable or "systematic" risk of that security). As shown in Equation [3], the CAPM is defined by four components, each of which theoretically must be a forward-looking estimate:

$$K_e = r_f + B(r_m - r_f) \quad [3]$$

where:

K_e = the required market ROE;

β = Beta coefficient of an individual security;

r_f = the risk-free rate of return; and

[31] Exhibit No. RBH-2.

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 34 of 176

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

In Equation [3], the term ($r_m - r_f$) represents the Market Risk Premium.[32] According to the theory underlying the CAPM, because unsystematic risk can be diversified away by adding securities to investment portfolios, investors should be concerned only with systematic or non-diversifiable risk. Non-diversifiable risk is measured by the Beta coefficient, which is defined as:

$$\beta_j = \frac{\sigma_j}{\sigma_m} \, x \, \rho_{j,m} \quad [4]$$

where:

σ_j = the standard deviation of returns for company "j,"

σ_m = the standard deviation of returns for the broad market (as measured, for example, by the S&P 500 Index), and

$\rho_{j,m}$ = 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, higher Beta coefficients indicate the subject company's returns have moved in tandem with the overall market.

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

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 35 of 176

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

A. Because utility equity is a long duration investment, I used two different measures of the risk-free rate: (1) the current 30-day average yield on 30-year Treasury bonds (*i.e.* 3.19 percent);[33] and (2) the near-term projected 30-year Treasury yield (*i.e.*, 3.52 percent)[34].

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

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

Q. PLEASE DESCRIBE YOUR *EX-ANTE* 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 total return based on the Constant Growth DCF model. To do so, I relied on data from two sources: (1) Bloomberg; and (2) Value Line.[35] Regarding Bloomberg-derived growth estimates, I calculated the expected

---

33 Bloomberg Professional Services

34 *See Blue Chip Financial Forecasts*, Vol. 37, No. 10, October 1, 2018, at 2. Consensus projections of the 30-year Treasury yield for the six quarters ending March 2020.

35 *See* Exhibit No. RBH-3.

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 36 of 176

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 Exhibit No. 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 analysis.

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

A. As shown in Exhibit No. RBH-4, I considered Beta coefficients reported by Bloomberg and Value Line, both of which adjust their calculated (or "raw") Beta coefficients to reflect the tendency of the Beta coefficient to regress to the market mean of 1.00. A notable difference between the two is that Value Line calculates the Beta coefficient over a five-year period, whereas Bloomberg's calculation is based on two years of data.

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 37 of 176

Q. WHAT ARE THE RESULTS OF YOUR CAPM ANALYSES?

A. As shown in Table 6 (below) the CAPM analysis suggest an ROE range of 8.75 percent to 12.24 percent (*see also* Exhibit No. RBH-5).

Table 6: Summary of CAPM Results[36]

	Bloomberg Derived Market Risk Premium	Value Line Derived Market Risk Premium
Average Bloomberg Beta Coefficient		
Current 30-Year Treasury (3.19%)	8.75%	9.40%
Near-Term Projected 30-Year Treasury (3.52%)	9.07%	9.72%
Average Value Line Beta Coefficient		
Current 30-Year Treasury (3.19%)	11.00%	11.91%
Near-Term Projected 30-Year Treasury (3.52%)	11.32%	12.24%

Bond Yield Plus Risk Premium Analysis

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

A. This approach is based on the basic financial tenet that equity investors bear the residual 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. Risk premium approaches, therefore, estimate the Cost of Equity as the sum of the Equity Risk Premium and the yield

[36] *See* Exhibit No. RBH-5.

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 38 of 176

on a particular class of bonds. As noted in my discussion of the CAPM, since 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 long-term (*i.e.*, 30-year) Treasury yield. I then gathered data for 1,570 electric utility rate proceedings between January 1980 and October 12, 2018. 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 covers several 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.

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 39 of 176

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

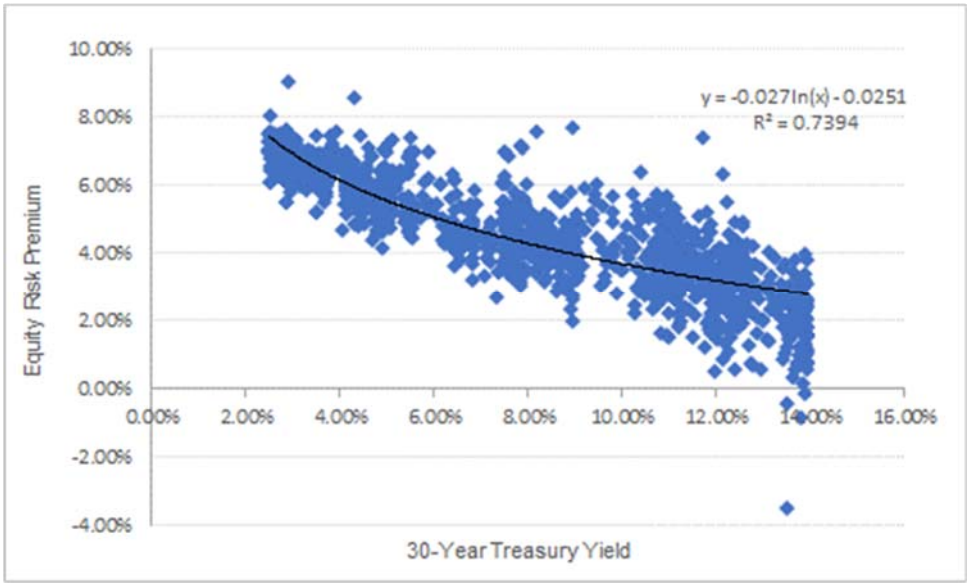
A. The basic method used was regression analysis, in which the observed Equity Risk Premium is the dependent variable, and the average 30-year Treasury yield is the independent variable. Relative to the long-term historical average, the analytical period includes interest rates and authorized ROEs that 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 ("T_{30}"):

$$RP = \propto \ + \beta(LN(T_{30})) \quad [5]$$

As shown on Chart 1 (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).

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 40 of 176

Chart 1: Equity Risk Premium[37]



As Chart 1 illustrates, over time there has been a statistically significant, negative relationship between the 30-year Treasury yield and the Equity Risk Premium. Consequently, simply applying the long-term average Equity Risk Premium of 4.65 percent would significantly understate the Cost of Equity and produce results well below any reasonable estimate. Based on the regression coefficients in Chart 1, however, the implied ROE is between 9.97 percent and 10.27 percent (*see* Table 7 and Exhibit No. RBH-6).

Table 7: Summary of Bond Yield Plus Risk Premium Results

	Return on Equity
Current 30-Year Treasury (3.19%)	9.97%
Near-Term Projected 30-Year Treasury (3.52%)	10.03%
Long-Term Projected 30-Year Treasury (4.30%)	10.27%

[37] *See* Exhibit No. RBH-6.

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 41 of 176

VI. 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 THE COMPANY?

A. No, the mean results of these models do not necessarily provide an appropriate estimate of the Company's Cost of Equity. In my view, there are additional factors that must be taken into consideration when determining where the Company's Cost of Equity falls within the range of results. Those factors include: (1) the risks associated with certain aspects of the Company's generation portfolio; (2) the Company's significant capital expenditure plan; (3) the risk associated with severe weather; (4) the risk associated with the Company's regulatory environment; and (5) the cost of issuing common stock. Those factors, which are discussed below, should be considered in terms of their overall effect on the Company's Cost of Equity.

Generation Portfolio

Q. HOW DO THE RISKS RELATED TO THE COMPANY'S GENERATION PORTFOLIO AFFECT ITS ACCESS TO AND COST OF CAPITAL?

A. Issues relating to coal-fired generation (including coal-ash basin closure), nuclear generation, and regulations motivating distributed generation and net metering, have a direct bearing on the Company's operating and financial risk, and therefore, its Cost of Equity. In general, capital-intensive generation assets, such as coal-fired or nuclear generation facilities, are subject to certain risks including the

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 42 of 176

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. I discuss each of those issues in turn, below.

Coal-Fired Generation

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

A. The Company's operations include coal-fired generation, which represented approximately 27.67 percent of its 2017 reported owned operating capacity.[38] In particular, the Company and its investors face the risk that environmental regulations will require them to invest additional capital, or face closure or curtailment of generating capacity. These risks are compounded in the current regulatory environment as a result of the uncertainty investors, utilities, and the economy as a whole face in light of the change in administration following the 2016 election, and, in particular, the uncertain fate of Obama-era environmental regulations targeting greenhouse gas emissions and climate change in general, such as the Clean Power Plan that is currently being challenged in the courts.

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

[38] Duke Energy Corporation, SEC Form 10-K/A for the Period Ending December 31, 2017, at 31.

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 43 of 176

to coal-fired power plants without triggering further environmental controls and would exclude natural gas-fired power plants from emissions limits.[39] 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.

Q. PLEASE SUMMARIZE THE IMPLICATIONS OF COAL ASH BASIN CLOSURE AND COMPLIANCE ACTIVITIES IN DUKE ENERGY PROGRESS' OPERATIONS FOR THE COMPANY'S COST OF EQUITY.

A. By way of background, the United States Environmental Protection Agency ("EPA") promulgated on April 17, 2015 its final Coal Combustion Residuals Rule ("CCR Rule"). On September 20, 2014, the North Carolina Coal Ash Management Act ("CAMA") became law. As I understand, and as noted in the testimony of Jon Kerin, the requirements of the CCR Rule and CAMA (as subsequently amended) substantially overlap and, in general, regulate the disposal of coal combustion residuals ("CCRs") from electric utilities as solid waste. The EPA's CCR Rule established requirements regarding operational and reporting procedures to ensure the safe disposal and management of CCRs.[40] CAMA and the EPA CCR Rule subjected most of Duke Energy's coal ash impoundments in North Carolina to additional regulatory scrutiny; the Company's coal ash basins are required to be

[39] *See*, S&P Global Market Intelligence, "EPA's Affordable Clean Energy rule: How it would work," August 21, 2018.

[40] Duke Energy Corporation, SEC Form 10-K/A for the Period Ending December 31, 2017, at 13.

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 44 of 176

closed, triggering Generally Accepted Accounting Principles ("GAAP") provisions relating to the retirement of long-lived tangible assets.

In addition to the CCR Rule and CAMA regulatory requirements, the Company and the South Carolina Department of Health and Environmental Control executed a consent agreement requiring the excavation of an inactive ash basin and ash fill area at the W.S. Lee Steam Station, and, in April 2015 following publication of the EPA CCR Rule, the Company also entered into a consent agreement with conservation groups Upstate Forever and Save Our Saluda, similarly requiring the Company to implement certain measures with respect to active and inactive ash storage areas at that plant.[41]

The GAAP rules require the Company to account for coal ash basin closure costs through Asset Retirement Obligation ("ARO") accounting. In a petition to the North Carolina Commission on December 30, 2016, Duke Energy indicated that it had recorded AROs of $2.4 billion for the Company, and $2.1 billion for Duke Energy Carolinas' consolidated operations in compliance with the CCR Rule, CAMA, and the consent agreements.[42]

The ARO values are based on the legal obligations for the closure of coal ash basins, and the disposal of ash in connection with federal and state requirements. The actual costs of compliance may be materially different from the

[41] Joint Petition of Duke Energy Carolinas, LLC and Duke Energy Progress, LLC for an accounting Order to Defer Certain Coal Ash Remediation Costs, December 30, 2016, Paragraph 8.

[42] *Ibid.*, Paragraph 11.

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 45 of 176

ARO estimates, based on the timing and requirements of the final regulations. Although North Carolina regulators approved cost recovery for a portion of prior coal ash expenditures over five years, ongoing costs of coal ash basin closure are deferred for future recovery through rate case filings, putting pressure on cash flow metrics.[43] The uncertainty surrounding the eventual cost of coal ash basin closure costs, and the timing and regulatory lag associated with recovery of those costs, therefore, remains a significant risk to investors.[44]

Q. ARE THERE ANY OTHER CONCERNS FOR INVESTORS WITH RESPECT TO COAL GENERATION?

A. Yes. On January 25, 2016, California Insurance Commissioner Dave Jones introduced a new requirement for the disclosure of carbon-based investments held by insurance companies, and called on California insurance companies to divest investments in coal and companies that use coal, including electric utilities.[45] Although California's is the first insurance regulator to call for such divestitures, it is the largest insurance market in the United States, and sixth largest insurance market in the world.[46] Given the large percentage of institutional ownership among the proxy companies,[47] the potential of divestiture represents a significant source

---

43 Moody's Investors Service, Credit Opinion, Duke Energy Progress, LLC Update to Credit Analysis, October 22, 2018, at 3.

44 Duke Energy Corporation., Cautionary Statement Regarding Forward-Looking Information, SEC Form 10-K/A for the Period Ending December 31, 2017.

45 California Department of Insurance, January 25, 2016 Press Release

46 *Ibid*.

47 The average institutional ownership for the proxy group is 73.85 percent. Duke Energy Corporation's institutional ownership is 59.48 percent. Source: S&P Global Market Intelligence.

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 46 of 176

of risk for investors.

Nuclear Generation Portfolio

Q. PLEASE BRIEFLY DESCRIBE THE RISKS ASSOCIATED WITH THE OWNERSHIP OF NUCLEAR GENERATING RESOURCES.

A. Nuclear generating resources are regulated by the U.S. Nuclear Regulatory Commission ("NRC"). As such, the Company is subject to NRC mandates to meet licensing and safety related standards that may require increased capital spending and incremental operating costs. As Duke Energy noted:

> Revised security and safety requirements promulgated by the NRC, which could be prompted by, among other things, events within or outside the control of Duke Energy Carolinas, Duke Energy Progress and Duke Energy Florida, such as a serious nuclear incident at a facility owned by a third-party, could necessitate substantial capital and other expenditures, as well as assessments to cover third-party losses. In addition, if a serious nuclear incident were to occur, it could have a material adverse effect on the results of operations and financial condition and reputation of the Duke Energy Registrants.[48]

Q. DOES THE COMPANY'S GENERATION PORTFOLIO INCLUDE NUCLEAR GENERATING ASSETS?

A. Yes. The Company's generation portfolio includes 3,539 megawatts ("MW") of owned nuclear generating capacity. Specifically, the Company owns 1,870 MW at the Brunswick facility in North Carolina, 928 MW at the Harris facility in North Carolina, and 741 MW at the Robinson facility in South Carolina.[49]

---

[48] Duke Energy Corporation., SEC Form 10-K/A for the Period Ending December 31, 2017, at 28.

[49] The Company owns 3,539 MW of nuclear capacity out of a total owned capacity of 12,809 MW, or 27.63 percent of the total. *See*, Duke Energy Corp., SEC Form 10-K/A for the fiscal year ended December 31, 2017, at 31.

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 47 of 176

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

A. Yes. One example is the increased oversight and regulatory requirements put in place following a 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 the NRC staff, and the first related regulatory requirements were issued in March 2012 with implementation guidance issued on August 30, 2012.[50] The evolving nature of these requirements from the NRC put nuclear operators at risk of incurring costly future capital expenditures.

Another example of nuclear risk is the ongoing and long-term uncertainty in regard to nuclear waste disposal. 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

[50] *See*, www.nrc.gov/reactors/operating/ops-experience/japan-dashboard.html.

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 48 of 176

nuclear plants for sixty years after the expiration of a plant's license, the [NRC] failed to properly examine future dangers and key consequences."[51] The adjudicatory hearing that is required before a licensing decision can be made remains suspended.[52] 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 investment requirements will place additional pressure on its free cash flow and credit metrics.

Q. DO YOU HAVE ANY FURTHER OBSERVATIONS REGARDING THE UNCERTAINTIES ASSOCIATED WITH OWNING AND DEVELOPING NUCLEAR GENERATION?

A. Yes. On July 31, 2017 SCANA Corporation ("SCANA") announced its decision to cease construction of two new units at is V.C. Summer Nuclear Station; on August 1, SCANA's subsidiary, South Carolina Electric & Gas Company ("SCE&G"), filed a petition with Commission seeking, among other things, a determination of

[51] 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.

[52] https://www.nrc.gov/waste/hlw-disposal.html

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 49 of 176

prudency concerning the company's decision to abandon the project.[53] On June 28, 2018, Act 258 became effective and prospectively repealed the Base Load Review Act ("BLRA"), and removes from SCE&G's rates all increases imposed under the BLRA from 2011 onward. Therefore, as required by Act 258, on July 2, the Commission directed SCE&G to reduce its rates by $367.40 million pending the Commission's decision in Docket No. 2018-217-E.[54]

In October 2017, Regulatory Research Associates ("RRA") lowered its ranking of South Carolina's regulatory environment from "Average/1" to "Average/2", in connection with what RRA considered to be "the heightened risk surrounding the recovery of the Summer nuclear costs." Later, in August 2018 RRA further reduced its ranking to "Average/3" due to "a federal court's denial of SCE&G's request for a stay of the $367 million rate reduction."[55] To put that change in perspective, of the 53 regulatory commissions RRA currently ranks, 19 are ranked "Average/1" or higher, and 19 are ranked "Average/3" or lower. RRA's ranking of South Carolina therefore moved from the top one-third to the bottom

---

53 SCANA Corporate SEC Form 8-K, filed July 31, 2017; Petition of South Carolina Electric and Gas Company, *In Re: Petition of South Carolina Electric & Gas Company for Prudency Determination Regarding Abandonment, Amendments to the Construction Schedule, Capital Cost Schedule and Other Tenns of the BLRA Orders for V.C. Summer Units 2 & 3 and Related Matters*, August 1, 2017.

54 Public Service Commission of South Carolina Directive, Docket No. 2018-217-E, Order No. 2018-459, (July 2, 2018).

55 Source: Regulatory Research Associates, accessed October 13, 2018. RRA describes its ranking method as follows: RRA maintains three principal rating categories for regulatory climates: Above Average, Average, and Below Average. Within the principal rating categories, the numbers 1, 2, and 3 indicate relative position. The designation 1 indicates a stronger rating; 2, a mid-range rating; and, 3, a weaker rating. The evaluations are assigned from an investor perspective and indicate the relative regulatory risk associated with the ownership of securities issued by the jurisdiction's utilities.

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 50 of 176

one-third. Because RRA's rankings reflect the nature of regulation from an investor perspective, the change in South Carolina's rank reflects an element of uncertainty that is relevant to investors as they develop their return requirements.

Distributed Energy

Q. PLEASE BRIEFLY DESCRIBE SOUTH CAROLINA DISTRIBUTED ENERGY RESOURCE PROGRAM ("ACT 236").

A. Act 236, which was signed by Governor Nikki Haley on June 2, 2014, created a voluntary distributed energy resource program for the State's investor-owned utilities. The distributed energy resource program, to be approved by the Commission, must demonstrate a plan to procure, incentivize, or construct renewable energy facility capacity equivalent to two percent of the utility's previous five-year average South Carolina retail peak demand by 2021. Of that two percent, one-half must include projects ranging between one and ten MW ("utility-scale program"). The remaining one-half must include projects of less than one MW ("customer-scale program"); one quarter of that total should be met by facilities of 20 kW or less ("small scale requirement").

Q. PLEASE DESCRIBE RETAIL NET METERING.

A. Simply put, net metering is a billing mechanism whereby, through the use of a bidirectional meter, the customer's usage of electricity and the production of electricity from the customer's generator are combined and netted on the customer

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 51 of 176

bill. Under retail net metering, customers sell their excess generated electricity to the utility at the same price that the utility charges to the customer (a 1:1 ratio). This type of net metering is an embedded incentive to customers to invest in distributed generation in South Carolina. *The South Carolina Act 236 Cost Shift and Cost of Service Analysis*, issued on December 18, 2015 by Energy and Environmental Economics, recognized that this type of incentive does shift costs from net metering customers to non-participating customers. The incentive was extended via Act 236 to customers participating in net metering prior to the adoption of new post-Act 236 net metering tariffs until December 31, 2020. The same incentive also was extended, via settlement in Docket 2014-246-E, to customers adopting net metering prior to December 31, 2020 until January 1, 2025. Act 236 limits the aggregate participation in net metering tariffs to two percent of a utility's South Carolina retail peak demand.[56]

Q. IS RETAIL NET METERING AVAILABLE TO DUKE ENERGY PROGRESS' CUSTOMERS IN NORTH CAROLINA?

A. Yes. The Company has effective North Carolina retail net metering tariffs, and there is no aggregate limit on participation by retail customers.

[56] The incentive is available under Act 236 up to either the two percent cap or December 31, 2020, whichever comes first.

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 52 of 176

Q. WHAT ARE THE POTENTIAL IMPLICATIONS OF ACT 236 AND RETAIL NET METERING FOR THE COMPANY'S BUSINESS RISK?

A. The Company currently is experiencing low to declining growth in demand, and this state of affairs is projected to persist into the future.[57] In addition, the extension of retail net metering incentivizes continued or increased investment in distributed generation, which can begin a cycle in which customers with means leave the system, and the pool of remaining customers are left with increasing fixed costs until ultimately, the utility has difficulties recovering its full cost of service. At that point, credit quality may come under pressure.

Q. PLEASE EXPLAIN THE NORTH CAROLINA REPS AND THE COMPANY'S COMPLIANCE REQUIREMENTS.

A. Pursuant to North Carolina Session Law 2007-197 ("Senate Bill 3"), since 2012 utilities and other power suppliers have been required to meet stated percentages of their retail customers' energy needs (which escalates over time to 12.50 percent in 2021) through a combination of renewable energy resources, and energy reductions or savings from the implementation of energy efficiency and demand-side management programs. On July 27, 2017, North Carolina Governor Cooper signed HB 589 into law, which calls for the establishment of a competitive procurement process by which the Company will pursue additional solar resources in both its North Carolina and South Carolina service territories. HB 589 targets 2,660 MW

[57] Duke Energy Corporation., SEC Form 10-K/A for the Period Ending December 31, 2017, at 10.

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 53 of 176

of competitively procured renewable resources over a 45-month period. The Company's "Base Case" forecast projects that it will add approximately 3,800 MW of renewable capacity over the next 15 years to comply with the South Carolina Distributed Energy Resource Program, REPS and HB 589.[58]

Q. **IS DUKE ENERGY PROGRESS ALSO EXPERIENCING GROWTH IN RENEWABLE ENERGY PROJECTS IN NORTH CAROLINA RELATED TO ITS PUBLIC UTILITY REGULATORY POLICIES ACT OF 1978 ("PURPA") COMPLIANCE REQUIREMENTS?**

A. Yes, it is. According to the Company's *Joint Comments to the Federal Energy Regulatory Commission's Technical Conference Concerning Implementation Issues Under the Public Utility Regulatory Policies Act of 1978,* submitted in Docket No. AD16-16-000 on June 7, 2016, "Duke Energy's utilities lead in and continue to grow deployment levels of PURPA qualifying facilities ("QF")…the Duke Progress and Duke Carolinas service territories are the nation's largest PURPA market, 'accounting for 60% of U.S. PURPA projects.'"[59] The following excerpt from the same filing further illustrates the PURPA compliance issues the Company faces in the Carolinas:

> From 2010 through 2015, 621 projects and 1246 MWs of QF generation have come online in the Carolinas, the vast majority of which are intermittent solar facilities. These mandatory purchases

[58] Duke Energy Progress South Carolina 2017 Integrated Resource Plan (Annual Report), Docket No. 2017-8-E, November 1, 2017, at 22.

[59] Colin Smith, Analyst, GTM Research, The Next Wave of U.S. Utility Solar, Procurement Beyond the RPS (Feb. 2016) at 28 (emphasis supplied).

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 54 of 176

> have resulted in over $1 billion in costs on customers – to date – and customers will continue to incur costs associated with these QF projects. Across Duke Energy's service territory in the Carolinas alone, transmission and distribution engineers have and are grappling with over 1,700 projects totaling over 9000 MWs of additional intermittent QF capacity. Engineers have to study all these projects, and they may not all be built. However, at this time there are over 1200 projects in the interconnection process that are viable and/or being built, totaling over 4400 MWs of additional intermittent capacity. These 1200 projects will mandate approximately $400 million in costs each year or $6 billion in costs over a 15-year commitment period. The above do not include the QFs in the Carolinas that are interconnected with other systems and municipal/cooperative utilities that are selling or seeking to sell their output to Duke Progress and Duke Carolinas.[60]

The Company's South Carolina 2017 Integrated Resource Plan, filed in Docket No. 2017-8-E, identified 499 projects totaling 6,015 MW in its combined Carolinas service territories, with 112 pending projects, totaling 1,427 MW in capacity, being located in South Carolina.[61]

Q. DO CREDIT RATING AGENCIES RECOGNIZE RISKS ASSOCIATED WITH AN INCREASE IN DISTRIBUTED GENERATION RESOURCES?

A. Yes, they do. Although S&P has noted that the competitive threat from rooftop solar panels has not been significant enough to have an effect on credit quality to date, it has outlined the potential risks to the electric utility sector:

> …should solar rooftop use suddenly increase, a utility would be forced to recover its excess electric capacity costs from its remaining

[60] Comments of Duke Energy Corporation to the Federal Energy Regulatory Commission's Technical Conference Concerning Implementation Issues Under the Public Utility Regulatory Policies Act of 1978 ("PURPA"), Docket No. AD16-16-000.

[61] Duke Energy Progress South Carolina 2017 Integrated Resource Plan (Annual Report), Docket No. 2017-8-E, November 1, 2017, at 17.

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 55 of 176

> customers. The resulting higher bills to the remaining utility customers would only further drive those customers to install solar panels. This could, again, prevent the utility from fully recovering its costs and investments in a timely manner, potentially harming its credit quality.[62]

Moody's noted that under certain conditions, there could be "large negative consequences" for utilities as a result of the widespread deployment of distributed generation resources. Under those conditions, when the regulatory structure does not address the effect of distributed generation, Moody's suggests that "the likelihood of negative credit events would rise due to the technological disruption."[63]

Similarly, a July 2014 article quoted Bernstein Research analysts regarding the risk of distributed generation from a utility's perspective, stating that "'[f]or the foreseeable future, distributed solar will exist in a parasitic relationship to the grid, absorbing its revenues while continuing to rely upon it for economic viability,' the analysts said, noting two specific challenges distributed solar creates for utilities: lost sales volume and a 'foregone' need for new capacity."[64]

---

62 Standard and Poor's Research, "Why U.S. Electric Utilities' Credit Quality Can Withstand the Rise of Rooftop Solar," November 15, 2013, at 6.

63 Moody's also refers to distributed generation as a "form of technology event risk, where event risk is low or remote, but with high severity implications should the event actually materialize." *See* Moody's Investors Service, *Regulatory framework holds keys to risk and rewards associated with distributed generation*, April 23, 2014, at 2.

64 Copley, Michael, "Despite distributed generation's buzz, grid power 'here to stay,' Bernstein says," S&P Global Market Intelligence, July 21, 2014.

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 56 of 176

Capital Expenditures

Q. PLEASE SUMMARIZE THE COMPANY'S CAPITAL EXPENDITURE PLANS

A. Based on Duke Energy's Summer Update dated August 9, 2018, the Company plans to deploy approximately $8.025 billion in capital over the period 2018-2022,[65] which is a substantial sum.

Q. WHAT ARE THE RISKS ASSOCIATED WITH THAT LEVEL OF INVESTMENT?

A. Ratings agencies have noted the Company's planned capital expenditures and their impact upon credit metrics. For example, Moody's noted the Company's substantial capital expenditures are a "credit challenge."[66] Moody's went on to note capital expenditures are expected to remain "elevated", attributed to higher new generation expenditures, environmental compliance spending, and transmission and distribution projects.[67]

Given the magnitude of the Company's planned capital expenditures and the pressure on credit metrics they place without timely cost recovery (combined with the dilution of cash flow from future coal ash costs and the Tax Cuts and Jobs Act described below), regulatory support is of great importance to investors.

---

65 Duke Energy Corporation, Summer Update 2018, August 9, 2018, at 32.

66 Moody's Investors Service, Credit Opinion, Duke Energy Progress, LLC Update to Credit Analysis, March 19, 2018, at 2.

67 *Ibid*., at 3-4.

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 57 of 176

Severe Weather Risk

Q. PLEASE DESCRIBE THE RISK ASSOCIATED WITH SEVERE WEATHER ACTIVITY IN THE COMPANY'S SERVICE TERRITORY.

A. Duke Energy Progress faces the risk of sudden, unexpected damage from severe storms. The incidence of hurricanes, such as Matthew in 2016 and most recently Florence and Michael, make the Company's operating area a high-risk area for incurring weather-related infrastructure repair costs and service disruptions. In addition to the need to fund repair costs, severe weather causes the Company to incur unplanned expenses (such as labor costs that are not recovered in existing rates) and results in lower sales due to damage of transmission and distribution infrastructure or the disruption of generating capacity. Together, these effects can reduce the Company's revenue and put strain on its operating cash flow.

As capital-intensive operations, utilities often are cash flow neutral or negative entities, requiring access to short-term credit markets to fund day-to-day operations. In the event of significant storm damage, the Company may not have a reserve needed to fund restoration activities and its internal cash flow may not be sufficient to fund ongoing restoration activities. In that case, the need to efficiently access short-term credit would be heightened. That access will depend on a strong financial profile. In short, regulatory support for storm cost recovery is important to maintain the Company's financial integrity.

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 58 of 176

Regulatory Risk

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

A. The regulatory environment can significantly affect both the access to, and the cost of capital in several ways. First, the proportion and cost of debt capital available to utility companies are influenced by the rating agencies' assessment of the regulatory environment. Regulatory decisions regarding the authorized ROE and capital structure have direct consequences for the subject utility's internal cash flow generation (sometimes referred to as "Funds from Operations," or "FFO"). Because credit ratings are intended to reflect the ability to meet financial obligations as they come due, the ability to generate the cash flows required to meet those obligations (and to provide an additional amount for unexpected events) is of critical importance to debt investors. Two of the most important metrics used to assess that ability are the ratios of FFO to debt, and FFO to interest expense, both of which are directly affected by regulatory decisions regarding the appropriate rate of return and capital structure.

Investors recognize, however, that an authorized ROE that is reasonable but subject to earnings attrition due to unfavorable regulatory or economic factors, does not provide assurance that the utility will have a reasonable opportunity to recover its costs, or to earn a reasonable return. The authorized ROE affects not only the cash flow-related metrics that measure financial strength, but it also provides an

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 59 of 176

indication of the degree of regulatory support, and risk, associated with a given utility and jurisdiction. It therefore is an important measure of regulatory support and financial integrity from several perspectives.

Q. HOW DO CREDIT RATING AGENCIES ASSESS THE REGULATORY ENVIRONMENT IN WHICH A UTILITY OPERATES?

A. There is little question that rating agencies consider the regulatory environment, including the extent to which the presiding regulatory commission is supportive of issues addressing credit quality, to be an important determinant of the subject company's credit profile. As noted by Moody's, "[a]n over-arching consideration for regulated utilities is the regulatory environment in which they operate."[68] Moody's further noted that:

> A utility operating in a regulatory framework that is characterized by legislation that is credit supportive of utilities and eliminates doubt by prescribing many of the procedures that the regulators will use in determining fair rates (which legislation may show evidence of being responsive to the needs of the utility in general or specific ways), a long history of transparent rate-setting, and a judiciary that has provided ample precedent by impartially adjudicating disagreements in a manner that addresses ambiguities in the laws and rules will receive higher scores in the Legislative and Judicial Underpinnings sub-factor. A utility operating in a regulatory framework that, by statute or practice, allows the regulator to arbitrarily prevent the utility from recovering its costs or earning a reasonable return on prudently incurred investments, or where regulatory decisions may be reversed by politicians seeking to enhance their populist appeal will receive a much lower score.[69]

---

[68] Moody's Investors Service, *Rating Methodology: Regulated Electric and Gas Utilities*, December 23, 2013, at 4.

[69] *Ibid.*, at 10.

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 60 of 176

In fact, fully 50.00 percent of Moody's credit rating determinations (for regulated utilities) are made based on regulatory factors. Moody's notes that its assessment of the subject company's regulatory framework reflects 25.00 percent of the rating, while the remaining 25.00 percent is determined by the utility's "ability to recover costs and earn returns."[70]

In arriving at its rating determinations, S&P includes an assessment of "capital support during construction to alleviate funding and cash flow pressure during periods of heavy investments".[71] Moody's agrees that timely cost recovery is an important determinant of credit quality, noting that mechanisms providing "full and highly timely recovery of all operating costs and essentially contemporaneous return on all incremental capital investments" allow for stronger credit ratings.[72]

Rating agencies also recognize the importance of the regulatory environment when assessing a utility's business risk profile. S&P, for example, states that "[o]ne significant aspect of regulatory risk that influences credit quality is the regulatory environment in the jurisdictions where a utility operates."[73] S&P explains "[w]hen we evaluate U.S utility regulatory environments, we consider

---

70 *Ibid*., at 6.

74 Standard and Poor's, *Utilities: Key Credit Factors For The Regulated Utilities Industry*, November 19, 2013, at 6.

72 Moody's Investors Service, *Rating Methodology: Regulated Electric and Gas Utilities*, December 23, 2013, at 17.

73 S&P Global Ratings, RatingsDirect, *Assessing U.S. Investor-Owned Utility Regulatory Environments*, August 10, 2016, at 2.

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 61 of 176

financial stability to be of substantial importance. Cash takes precedence in credit analysis. A regulatory jurisdiction that recognizes the significance of cash flow in its decision-making is one that will appeal to creditors."[74]

Q. WHAT ARE YOUR CONCLUSIONS REGARDING THE REGULATORY ENVIRONMENT AND THE COMPANY'S RISK PROFILE?

A. As explained above, the regulatory environment is one of the most important issues considered by both debt and equity investors in assessing the risks and prospects of utility companies. From the perspective of debt investors, the authorized return should enable the Company to generate the cash flow needed to meet its near-term financial obligations, make the capital investments needed to maintain and expand its system, and maintain sufficient levels of liquidity to fund unexpected events. That financial liquidity must be provided not only from internally generated funds, but also by efficient access to capital markets. Moreover, because investors have many alternatives, even within a given market sector, the Company's financial profile must be adequate on a relative basis to ensure its ability to attract capital under a variety of economic and financial market conditions.

From the perspective of Duke Energy, the parent company of Duke Energy Progress, the authorized return must be sufficient to allocate equity capital needed to fund continuing investments. From the perspective of equity investors, the authorized return must be adequate to provide a return on the equity portion of the

[74] *Ibid*., at 6.

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 62 of 176

Company's capital investments competitive with risk-comparable investments available to investors. Because equity investors are the residual claimants to the Company's cash flows, they are particularly concerned with regulatory uncertainty and its effect on future cash flows. As noted above, Regulatory Research Associates revised its ranking of South Carolina from "Average/1" to "Average/3", moving the jurisdiction from the top one-third to the bottom one-third of the regulatory commissions it ranks. That change reflects an element of uncertainty that weighs in investors' risk perceptions and return requirements.

Flotation Costs

Q. WHAT ARE FLOTATION COSTS?

A. Flotation costs are the expenses incurred in connection with the sale of new shares of equity. As discussed below, such costs include expenditures for the preparation, filing, and underwriting of common equity offerings.

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.

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 63 of 176

Q. ARE FLOTATION COSTS PART OF A 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 flotation costs were incurred prior to the test year, remain part of the cost structure that exists during the test year and beyond, and 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 the Company the opportunity to earn its required rate of return in the future.

Q. IS THE NEED TO CONSIDER FLOTATION COSTS ELIMINATED BECAUSE THE COMPANY IS A WHOLLY OWNED SUBSIDIARY OF DUKE ENERGY?

A. No. Although the Company is a wholly owned subsidiary of Duke Energy, it is appropriate to consider flotation costs because wholly owned subsidiaries 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 the 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

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 64 of 176

capital at a reasonable cost. This is important for companies such as the Company 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 IN ORDER 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).

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 justified by the academic and financial communities in the same spirit that investors are reimbursed for the costs of issuing debt. 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 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

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 65 of 176

into the cost of equity capital.[75]

Q. HAS DUKE ENERGY RECENTLY ISSUED COMMON STOCK?

A. Yes, it has. On March 6, 2018, Duke Energy issued 21,275,000 shares of common equity. As shown in Exhibit No. RBH-7, I have calculated the issuance costs for this offering to be 0.029 percent. Additionally, the Company made one at-the-market issuance of common stock on February 20, 2018, and two private placement issuances of common stock on March 6, 2018. As Company Witness Sullivan explains, the Company plans to finance its planned capital expenditures with a combination of internal cash generation, the issuance of debt, and equity funding.

Q. HAVE YOU ESTIMATED THE EFFECTS OF FLOTATION COSTS?

A. Yes. 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 Exhibit No. RBH-7, a reasonable estimate of flotation costs is approximately 0.09 percent (nine basis points).

Q. ARE YOU PROPOSING TO ADJUST YOUR RECOMMENDED ROE BY NINE BASIS POINTS TO REFLECT THE EFFECT OF FLOTATION COSTS ON THE COMPANY'S ROE?

A. No, I am not. Rather, I have considered the effect of flotation costs, in addition to the Company's other business risks, in determining where the Company's ROE falls within the range of results.

---

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

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 66 of 176

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 67 of 176

VII. 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 V, the models used to estimate the Cost of Equity are meant to reflect, and therefore are influenced by, current and expected capital market conditions. As such, 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.[76] 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

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

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 may lose value, if only on a relative basis, as increasing interest rates provide investors with alternative sources of current income, increasing dividend yields. Those dynamics likely affect other models in different ways, increasing the risk of focusing on a single method. 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?

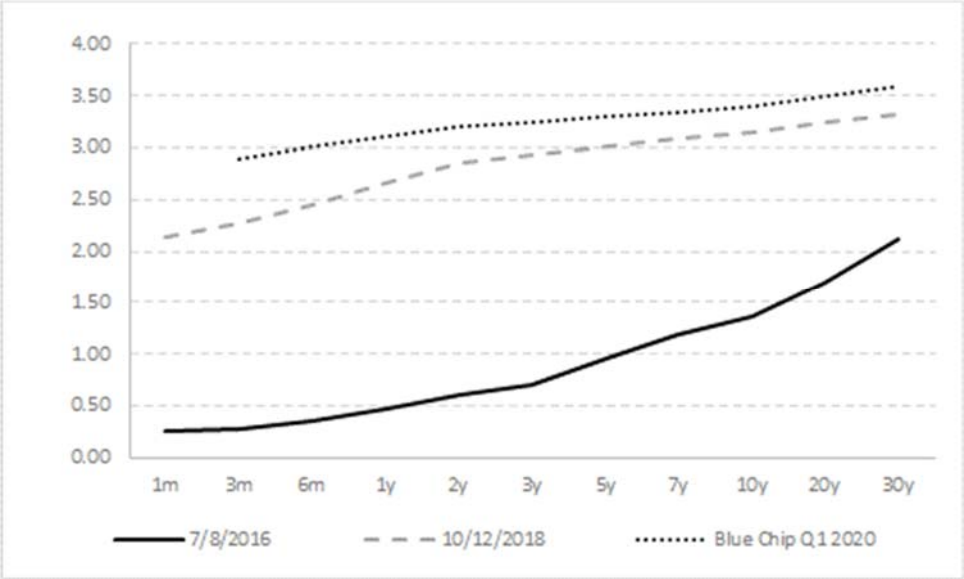
A. Yes, it does. From an analytical perspective, it is important that the inputs and assumptions used to arrive at an ROE recommendation, including assessments of capital market conditions, are consistent with the recommendation itself. Although all analyses require an element of judgment, the application 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

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 68 of 176

Federal Funds target rate seven times between December 2016 and October 12, 2018 to 2.00 percent - 2.25 percent, short-term and long-term interest rates also increased (*see* Chart 2 below).[77]

Chart 2: Treasury Yield Curve: 7/8/2016, 10/12/2018 and Projected Q1 2020[78]



The significant increase in the ten- and 30-year yields from July 2016 to October 2018 is highly related to increasing inflation. To that point, leading up to and following the November 2016 Presidential election, expected inflation, as measured by the breakeven forward inflation rate and the zero-coupon inflation index swaps, also increased. Although those measures of forward inflation fell

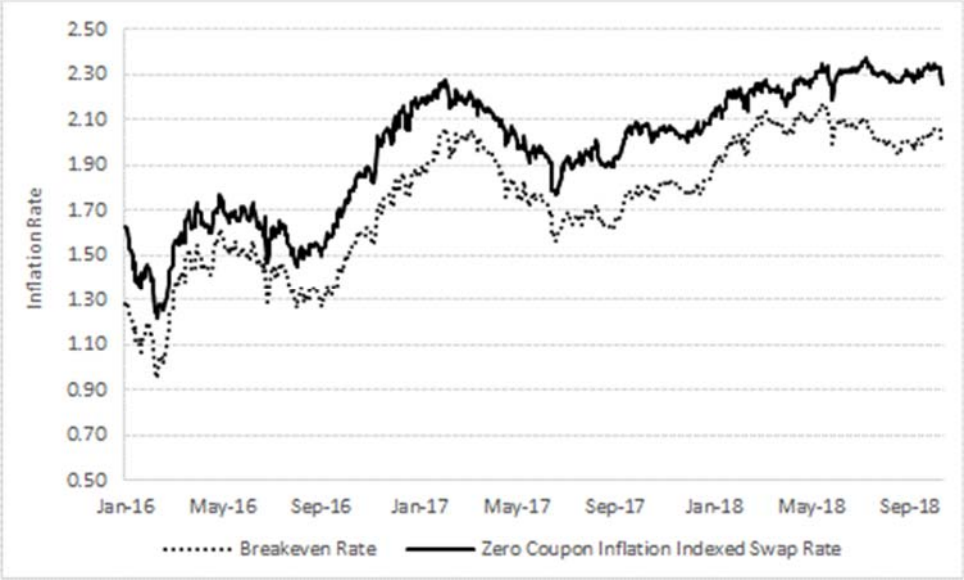
[77] Federal Reserve Board Schedule H.15. 1-year, 10-year and 30-year Treasury yields increased by 218 basis points, 178 basis points and 121 basis points, respectively, July 8, 2016 to October 12, 2018.

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

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 69 of 176

somewhat between February and June 2017, they have increased since that period, such that they are similar to the Federal Reserve's 2.00 percent inflation target (*see* Chart 3, below).

Chart 3: Five-Year Forward Inflation[79]



Lastly, 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.[80] In a press conference following the June 2018 Federal Open Market Committee meeting, Chairman Powell discussed the recent increases in the Federal Funds rate and expectations for continued rate increases, noting a strong labor market and increases in household spending and business fixed investment.[81]

---

79 Source: Bloomberg Professional.

80 *See:* https://www.federalreserve.gov/monetarypolicy/policy-normalization.htm and Federal Open Market Committee ("FOMC") Press Release, June 14, 2017.

81 Transcript of Chairman Powell's Press Conference, June 13, 2018.

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 70 of 176

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

A. Yes. Observable market data demonstrate investors expect interest rates to increase in the near future. Data compiled by CME Group indicates that investors see a near certainty of further Federal Funds rate increases, even after the seven increases since December 14, 2016. As shown in Table 8 (below), the market expects at least one additional rate hike (98.30 percent probability) and possibly two or more (85.30 percent) by October 2019.

Table 8: Probability of Federal Funds Rate Increases[82]

Target Rate (bps)	Federal Reserve Meeting Date								
	11/8/18	12/19/18	1/30/19	3/20/19	5/1/19	6/19/19	7/31/19	9/18/19	10/30/19
200-225	96.7%	20.1%	19.2%	7.3%	6.7%	2.9%	2.7%	1.8%	1.7%
225-250	3.3%	77.3%	74.9%	40.4%	37.7%	20.2%	18.9%	13.7%	13.0%
250-275	0.0%	2.6%	5.8%	48.6%	48.0%	42.2%	40.6%	33.6%	32.5%
275-300		0.0%	0.1%	3.6%	7.2%	30.3%	31.2%	34.2%	34.2%
300-325			0.0%	0.1%	0.4%	4.2%	6.1%	14.2%	15.3%
325-350						0.2%	0.5%	2.3%	3.0%
350-375								0.2%	0.3%

Similarly, consensus near-term forecasts of the 30-year Treasury yield reported by *Blue Chip Financial Forecast* indicate the market expects long-term rates to rise by another approximately 40 basis points by the first quarter of 2020.[83] Importantly, the potential for rising rates represents risk for utility investors.

[82] *See* http://www.cmegroup.com/trading/interest-rates/countdown-to-fomc.html, accessed October 16, 2018.

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

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 71 of 176

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."[84] 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.

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 19.68, which is highly consistent with the long-term standard deviation on annual market returns (19.80 percent, as reported by Duff & Phelps).

As Chart 4 (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. In 2018, however, the VIX

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

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 72 of 176

average increased to 15.23 with a standard deviation of 4.38. That is, from 2017 to 2018 both the level and the volatility of market volatility increased.

Chart 4: VIX Since January 2017[85]

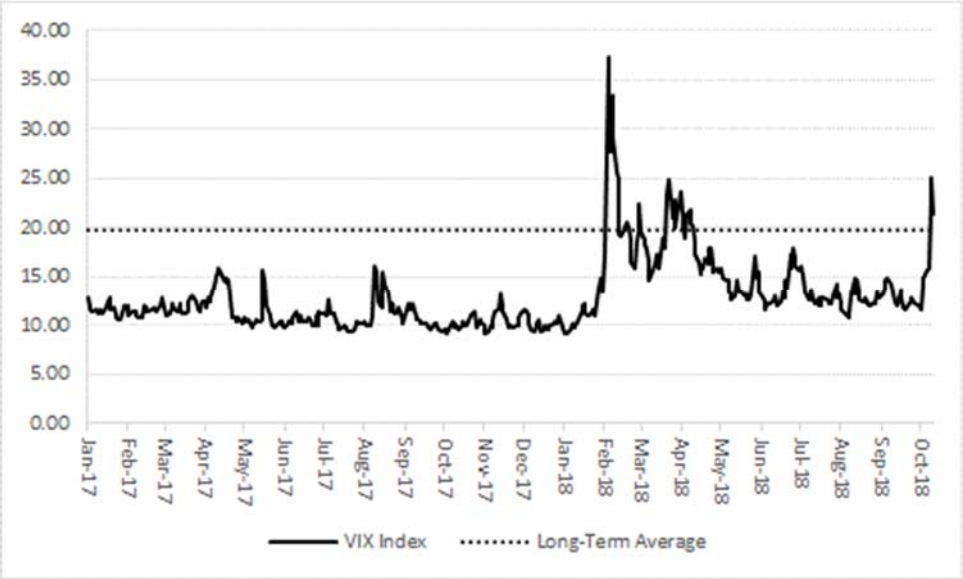


Table 9 (below) further demonstrates the increase in market uncertainty from 2017 to 2018. As that table notes, the standard deviation (that is, the volatility of volatility) in 2018 is about 3.20 times higher than its 2017 level (1.356).

Table 9: VIX Levels and Volatility[86]

Long-Term Average	19.680
2018 Average	15.231
2018 Maximum	37.320
2018 Minimum	9.150
2018 Standard Deviation	4.380
2017 Average	11.090
2017 Maximum	16.040
2017 Minimum	9.140
2017 Standard Deviation	1.356

[85] Source: Bloomberg Professional.
[86] Source: Bloomberg Professional.

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 73 of 176

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.[87]

Cboe's term structure data is upward sloping, indicating market expectations of increasing volatility. The expected VIX value in December 2020 is about 19.46, suggesting investors see a reversion to long-term average volatility over the coming months.[88] 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.

---

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

88 Source: http://www.cboe.com/trading-tools/strategy-planning-tools/term-structure-data, accessed October 16, 2018.

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 74 of 176

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

A. Yes. It 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 September 26, 2018, the Federal Open Market Committee noted the labor market continued to improve and that economic activity, including household spending and business fixed investment, was rising at a strong rate.[89] From that perspective, we would expect to see higher growth estimates for companies in the overall economy, including the utility sector.

Q. HAVE YOU ALSO CONSIDERED THE EFFECT OF THE RECENTLY ENACTED TAX CUT AND JOBS ACT ("TCJA")?

A. Yes, I have. On December 22, 2017, the President of the United States signed the TCJA into law. The rating agencies have observed that a reduction in utilities' revenue associated with lower income taxes and the potential return of excess accumulated deferred income taxes also may reduce utilities' cash flow. Leading up to and subsequent to the signing of the TCJA, utilities underperformed the market, which resulted in higher dividend yields, as rating agencies and investors re-evaluated utilities relative to other market sectors. To the extent investors now

[89] *Federal Reserve Press Release* dated September 26, 2018.

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 75 of 176

view utilities as less attractive relative to other sectors, investors will require a higher return to remain invested in the proxy companies. As that occurs, the proxy companies' prices will fall, and their dividend yields will increase. Because rating agencies have begun to discuss the consequences of the TCJA for utilities' cash flow, we reasonably can assume equity investors also have begun to recognize those concerns.

Q. WHAT CONCERNS HAVE THE MAROR RATING AGENCIES RAISED AS THEY CONSIDER THE IMPLICATIONS OF THE TCJA FOR UTILITIES' CASH FLOW?

A. The major rating agencies have observed that a reduction in utilities' revenue associated with lower income taxes and the potential return of excess accumulated deferred income taxes may reduce utilities' cash flow.[90] As FitchRatings pointed out "[a]bsent mitigating strategies on the regulatory front, this is expected to lead to weaker credit metrics and negative rating actions for issuers with limited headroom to absorb the leverage creep."[91] In a similar vein, S&P observed that the TCJA is "…negative for credit quality because the combination of a lower tax rate and the loss of stimulus provisions related to bonus depreciation or full expensing of capital spending will create headwinds in operating cash-flow generation

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

[91] FitchRatings Special Report, *Tax Reform Impact on the U.S. Utilities, Power & Gas Sector*, January 24, 2018.

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 76 of 176

capabilities as customer rates are lowered in response to the new tax code."[92]

Moody's stated the following:

> Tax reform is credit negative for US regulated utilities because the lower 21% statutory tax rate reduces cash collected from customers, while the loss of bonus depreciation reduces tax deferrals, all else being equal. Moody's calculates that the recent changes in tax laws will dilute a utility's ratio of cash flow before changes in working capital to debt by approximately 150 - 250 basis points on average, depending to some degree on the size of the company's capital expenditure programs. From a leverage perspective, Moody's estimates that debt to total capitalization ratios will increase, based on the lower value of deferred tax liabilities.[93]

With respect to Duke Energy, specifically, Moody's stated:

> Duke's consolidated cash flow credit metrics are currently weakly positioned and likely to be incrementally pressured by tax reform. We currently expect the company's CFO pre-WC to debt ratio will remain below 15% through 2019 without assuming any action to counter the effects of the tax reform.[94]

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

Q. HAS MOODY'S RECENTLY UPDATED ITS REVIEW OF THE UTILITY SECTOR?

A. Yes. On June 18, 2018 Moody's changed its outlook on the U.S. regulated utility

---

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

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

98 Moody's Investors' Service, *Sector Comment Regulated Utilities – US: Tax reform is credit negative for sector, but impact varies by company*, January 24, 2018, at 5.

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 77 of 176

sector to "negative" from "stable". Moody's explained that its change in outlook "…primarily reflects a degradation in key financial credit ratios, specifically the ratio of cash flow from operations to debt, funds from operations (FFO) to debt and retained cash flow to debt, as well as certain book leverage ratios."[95] The sector's outlook could remain "negative" if cash flow-based metrics continue to decline, or if there emerge signs of a more "contentious" regulatory environment (which, Moody's notes, is not fully reflected in lower authorized returns). Moody's also noted that "[m]anagement teams' defensive efforts and a few initial signs of supportive regulatory responses to tax reform are important first steps in addressing the sector's increased financial risk," and explained that in its view, "it will take longer than 12-18 months for the sector to exhibit a material financial improvement from these actions."[96]

Q. WHAT CONCLUSIONS DO YOU DRAW FROM THE DATA AND INFORMATION DISCUSSED ABOVE?

A. There is little question the TCJA has increased cash flow-related risks, and the potentially dilutive effects of additional equity issuances, for utilities. Those risks are manifested in the sector's significant underperformance relative to the broad market, and in the comments of financial participants such as Moody's, S&P, and Fitch. Further, because non-regulated companies may benefit from the TCJA in

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

[96] *Ibid*.

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 78 of 176

ways utilities cannot, it is reasonable to conclude investors have begun to see utilities as less attractive relative to other industry sectors. In addition, to the extent the TCJA accelerates economic growth and inflation, and increases the potential for widening federal budget deficits, investors may see further reason to expect increasing interest rates.[97] Because all three effects weigh against utilities, we should focus on the upper end of the range of analytical results.

Q. ARE YOU RECOMMENDING A HIGHER ROE IN THIS PROCEEDING IN CONNECTION WITH THE TCJA?

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

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

[97] *Blue Chip Financial Forecasts*, Vol. 37, No. 3, March 1, 2018, at 1.

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 79 of 176

context of the 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 10.25 percent to 11.00 percent.

VIII. CONCLUSIONS

Q. WHAT IS YOUR CONCLUSION REGARDING THE ROE FOR THE COMPANY?

A. As discussed throughout my testimony, it is important to consider a variety of empirical and qualitative information in reviewing analytical results and arriving at ROE determinations. As a practical matter, the Constant Growth DCF results are well below a highly observable and relevant benchmark, *i.e.,* the returns authorized for vertically integrated electric utilities. A more balanced approach therefore would be to consider the relative strengths and weaknesses of multiple methods, and give the appropriate weight to their results.

Based on that review, I believe that an ROE in the range of 10.25 percent to 11.00 percent represents the range of equity investors' required ROE for investment

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 80 of 176

in integrated electric utilities in today's capital markets. Within that range, I conclude that an ROE of 10.75 percent represents the Cost of Equity for Duke Energy Progress. That conclusion considers the current capital market environment, including the TCJA, as well as the Company's risk profile relative to the proxy group analytical results with respect to (1) the risks associated with certain aspects of the Company's generation portfolio; (2) the Company's significant capital expenditure plan; (3) the risk associated with severe weather; (4) the risk associated with the Company's regulatory environment; and (5) the cost of issuing common stock. Based on those factors, it is appropriate to establish an ROE that is above the proxy group mean results. As such, an ROE of 10.75 percent reasonably represents the return required to invest in a company with a risk profile comparable to Duke Energy Progress.

Q. DOES THIS CONCLUDE YOUR PRE-FILED DIRECT TESTIMONY?

A. Yes, it does.

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 81 of 176

scottmadden
MANAGEMENT CONSULTANTS

Attachment A
Resume of:
Robert B. Hevert, Partner
Rates, Regulation and Planning Practice Area Leader

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 82 of 176

Summary

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

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

Areas of Specialization

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

Recent Expert Testimony Submission/Appearance

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

Recent Assignments

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

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

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 83 of 176

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
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
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

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 84 of 176

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Potomac Electric Power Company	03/13	Potomac Electric Power Company	Formal Case No. 1103-2013-E	Return on Equity
Potomac Electric Power Company	07/11	Potomac Electric Power Company	Formal Case No. 1087	Return on Equity
Federal Energy Regulatory Commission				
Sabine Pipeline, LLC	09/15	Sabine Pipeline, LLC	Docket No. RP15-1322-000	Return on Equity
NextEra Energy Transmission West, LLC	07/15	NextEra Energy Transmission West, LLC	Docket No. ER15-2239-000	Return on Equity
Maritimes & Northeast Pipeline, LLC	05/15	Maritimes & Northeast Pipeline, LLC	Docket No. RP15-1026-000	Return on Equity
Public Service Company of New Mexico	12/12	Public Service Company of New Mexico	Docket No. ER13-685-000	Return on Equity
Public Service Company of New Mexico	10/10	Public Service Company of New Mexico	Docket No. ER11-1915-000	Return on Equity
Portland Natural Gas Transmission System	05/10	Portland Natural Gas Transmission System	Docket No. RP10-729-000	Return on Equity
Florida Gas Transmission Company, LLC	10/09	Florida Gas Transmission Company, LLC	Docket No. RP10-21-000	Return on Equity
Maritimes and Northeast Pipeline, LLC	07/09	Maritimes and Northeast Pipeline, LLC	Docket No. RP09-809-000	Return on Equity
Spectra Energy	02/08	Saltville Gas Storage	Docket No. RP08-257-000	Return on Equity
Panhandle Energy Pipelines	08/07	Panhandle Energy Pipelines	Docket No. PL07-2-000	Response to draft policy statement regarding inclusion of MLPs in proxy groups for determination of gas pipeline ROEs
Southwest Gas Storage Company	08/07	Southwest Gas Storage Company	Docket No. RP07-541-000	Return on Equity
Southwest Gas Storage Company	06/07	Southwest Gas Storage Company	Docket No. RP07-34-000	Return on Equity
Sea Robin Pipeline LLC	06/07	Sea Robin Pipeline LLC	Docket No. RP07-513-000	Return on Equity
Transwestern Pipeline Company	09/06	Transwestern Pipeline Company	Docket No. RP06-614-000	Return on Equity
GPU International and Aquila	11/00	GPU International	Docket No. EC01-24-000	Market Power Study
Florida Public Service Commission				
Florida Power & Light Company	03/16	Florida Power & Light Company	Docket No. 160021-EI	Return on Equity
Tampa Electric Company	04/13	Tampa Electric Company	Docket No. 130040-EI	Return on Equity
Georgia Public Service Commission				
Atlanta Gas Light Company	05/10	Atlanta Gas Light Company	Docket No. 31647-U	Return on Equity
Hawaii Public Utilities Commission				
Maui Electric Company, Limited	10/17	Maui Electric Company, Limited	Docket No. 2017-0150	Return on Equity

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 85 of 176

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

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 86 of 176

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
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	05/18	Washington Gas Light Company	Case No. 9481	Return on Equity
Potomac Electric Power Company	01/18	Potomac Electric Power Company	Case No. 9472	Return on Equity
Delmarva Power & Light Company	07/17	Delmarva Power & Light Company	Case No. 9455	Return on Equity
Potomac Electric Power Company	03/17	Potomac Electric Power Company	Case No. 9443	Return on Equity
Delmarva Power & Light Company	06/16	Delmarva Power & Light Company	Case No. 9424	Return on Equity
Potomac Electric Power Company	06/16	Potomac Electric Power Company	Case No. 9418	Return on Equity
Potomac Electric Power Company	12/13	Potomac Electric Power Company	Case No. 9336	Return on Equity
Delmarva Power & Light Company	03/13	Delmarva Power & Light Company	Case No. 9317	Return on Equity
Potomac Electric Power Company	11/12	Potomac Electric Power Company	Case No. 9311	Return on Equity
Potomac Electric Power Company	12/11	Potomac Electric Power Company	Case No. 9286	Return on Equity
Delmarva Power & Light Company	12/11	Delmarva Power & Light Company	Case No. 9285	Return on Equity
Delmarva Power & Light Company	12/10	Delmarva Power & Light Company	Case No. 9249	Return on Equity
Massachusetts Department of Public Utilities				
Boston Gas Company, Colonial Gas Company each d/b/a National Grid	11/17	Boston Gas Company, Colonial Gas Company each d/b/a National Grid	DPU 17-170	Return on Equity
NSTAR Electric Company Western and Massachusetts Electric Company each d/b/a Eversource Energy	01/17	NSTAR Electric Company Western Massachusetts Electric Company each d/b/a Eversource Energy	DPU 17-05	Return on Equity

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 87 of 176

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
National Grid	11/15	Massachusetts Electric Company and Nantucket Electric Company d/b/a National Grid	DPU 15-155	Return on Equity
Fitchburg Gas and Electric Light Company d/b/a Unitil	06/15	Fitchburg Gas and Electric Light Company d/b/a Unitil	DPU 15-80	Return on Equity
NSTAR Gas Company	12/14	NSTAR Gas Company	DPU 14-150	Return on Equity
Fitchburg Gas and Electric Light Company d/b/a Unitil	07/13	Fitchburg Gas and Electric Light Company d/b/a Unitil	DPU 13-90	Return on Equity
Bay State Gas Company d/b/a Columbia Gas of Massachusetts	04/12	Bay State Gas Company d/b/a Columbia Gas of Massachusetts	DPU 12-25	Capital Cost Recovery
National Grid	08/09	Massachusetts Electric Company d/b/a National Grid	DPU 09-39	Revenue Decoupling and Return on Equity
National Grid	08/09	Massachusetts Electric Company and Nantucket Electric Company d/b/a National Grid	DPU 09-38	Return on Equity – Solar Generation
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

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 88 of 176

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
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
CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Minnesota Gas	08/13	CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Minnesota Gas	Docket No. G-008/GR-13-316	Return on Equity
Xcel Energy, Inc.	11/12	Northern States Power Company	Docket No. E002/GR-12-961	Return on Equity
Otter Tail Power Corporation	04/10	Otter Tail Power Company	Docket No. E-017/GR-10-239	Return on Equity
Minnesota Power a division of ALLETE, Inc.	11/09	Minnesota Power	Docket No. E-015/GR-09-1151	Return on Equity
CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Minnesota Gas	11/08	CenterPoint Energy Minnesota Gas	Docket No. G-008/GR-08-1075	Return on Equity
Otter Tail Power Corporation	10/07	Otter Tail Power Company	Docket No. E-017/GR-07-1178	Return on Equity
Xcel Energy, Inc.	11/05	Northern States Power Company -Minnesota	Docket No. E-002/GR-05-1428	Return on Equity (electric)
Xcel Energy, Inc.	09/04	Northern States Power Company - Minnesota	Docket No. G-002/GR-04-1511	Return on Equity (gas)
Mississippi Public Service Commission				
CenterPoint Energy Resources, Corp. d/b/a CenterPoint Energy Entex and CenterPoint Energy Mississippi Gas	07/09	CenterPoint Energy Mississippi Gas	Docket No. 09-UN-334	Return on Equity
Missouri Public Service Commission				
KCP&L Greater Missouri Operations Company	01/18	KCP&L Greater Missouri Operations Company	Case No. ER-2018-0146	Return on Equity
Kansas City Power & Light Company	01/18	Kansas City Power & Light Company	Case No. ER-2018-0145	Return on Equity

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 89 of 176

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Laclede Gas Company and Missouri Gas Energy	11/17	Laclede Gas Company and Missouri Gas Energy	Case No. GR-2017-0215 Case No. GR-2017-0216	Goodwill Adjustment on Capital Structure
Liberty Utilities (Midstates Natural Gas) Corp. d/b/a/ Liberty Utilities	09/17	Liberty Utilities (Midstates Natural Gas) Corp. d/b/a/ Liberty Utilities	Case No. GR-2018-0013	New Ratemaking Mechanisms
Union Electric Company d/b/a Ameren Missouri	07/16	Union Electric Company d/b/a Ameren Missouri	Case No. ER-2016-0179	Return on Equity (electric)
Kansas City Power & Light Company	07/16	Kansas City Power & Light Company	Case No. ER-2016-0285	Return on Equity (electric)
Kansas City Power & Light Company	02/16	Kansas City Power & Light Company	Case No. ER-2016-0156	Return on Equity (electric)
Kansas City Power & Light Company	10/14	Kansas City Power & Light Company	Case No. ER-2014-0370	Return on Equity (electric)
Union Electric Company d/b/a Ameren Missouri	07/14	Union Electric Company d/b/a Ameren Missouri	Case No. ER-2014-0258	Return on Equity (electric)
Union Electric Company d/b/a Ameren Missouri	06/14	Union Electric Company d/b/a Ameren Missouri	Case No. EC-2014-0223	Return on Equity (electric)
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

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 90 of 176

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Liberty Utilities d/b/a EnergyNorth Natural Gas	04/17	Liberty Utilities d/b/a EnergyNorth Natural Gas	Docket No. DG 17-048	Return on Equity
Unitil Energy Systems, Inc.	04/16	Unitil Energy Systems, Inc.	Docket No. DE 16-384	Return on Equity
Liberty Utilities d/b/a Granite State Electric Company	04/16	Liberty Utilities d/b/a Granite State Electric Company	Docket No. DE 16-383	Return on Equity
Liberty Utilities d/b/a EnergyNorth Natural Gas	08/14	Liberty Utilities d/b/a EnergyNorth Natural Gas	Docket No. DG 14-180	Return on Equity
Liberty Utilities d/b/a Granite State Electric Company	03/13	Liberty Utilities d/b/a Granite State Electric Company	Docket No. DE 13-063	Return on Equity
EnergyNorth Natural Gas d/b/a National Grid NH	02/10	EnergyNorth Natural Gas d/b/a National Grid NH	Docket No. DG 10-017	Return on Equity
Unitil Energy Systems, Inc., EnergyNorth Natural Gas, Inc. d/b/a National Grid NH, Granite State Electric Company d/b/a National Grid, and Northern Utilities, Inc. – New Hampshire Division	08/08	Unitil Energy Systems, Inc., EnergyNorth Natural Gas, Inc. d/b/a National Grid NH, Granite State Electric Company d/b/a National Grid, and Northern Utilities, Inc. – New Hampshire Division	Docket No. DG 07-072	Carrying Charge Rate on Cash Working Capital
New Jersey Board of Public Utilities				
Atlantic City Electric Company	10/18	Atlantic City Electric Company	Docket No. OE18020196	Return on Equity
Atlantic City Electric Company	08/18	Atlantic City Electric Company	Docket No. ER18080925	Return on Equity
Atlantic City Electric Company	06/18	Atlantic City Electric Company	Docket No. ER18060638	Return on Equity
Atlantic City Electric Company	03/17	Atlantic City Electric Company	Docket No. ER17030308	Return on Equity
Pivotal Utility Holdings, Inc.	08/16	Elizabethtown Gas	Docket No. GR16090826	Return on Equity
The Southern Company; AGL Resources Inc.; AMS Corp. and Pivotal Holdings, Inc. d/b/a Elizabethtown Gas	04/16	The Southern Company; AGL Resources Inc.; AMS Corp. and Pivotal Holdings, Inc. d/b/a Elizabethtown Gas	BPU Docket No. GM15101196	Merger Approval
Atlantic City Electric Company	03/16	Atlantic City Electric Company	Docket No. ER16030252	Return on Equity
Pepco Holdings, Inc.	03/14	Atlantic City Electric Company	Docket No. ER14030245	Return on Equity
Orange and Rockland Utilities	11/13	Rockland Electric Company	Docket No. ER13111135	Return on Equity
Atlantic City Electric Company	12/12	Atlantic City Electric Company	Docket No. ER12121071	Return on Equity
Atlantic City Electric Company	08/11	Atlantic City Electric Company	Docket No. ER11080469	Return on Equity

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 91 of 176

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Pepco Holdings, Inc.	09/06	Atlantic City Electric Company	Docket No. EM06090638	Divestiture and Valuation of Electric Generating Assets
Pepco Holdings, Inc.	12/05	Atlantic City Electric Company	Docket No. EM05121058	Market Value of Electric Generation Assets; Auction
Conectiv	06/03	Atlantic City Electric Company	Docket No. EO03020091	Market Value of Electric Generation Assets; Auction Process
New Mexico Public Regulation Commission				
Public Service Company of New Mexico	12/16	Public Service Company of New Mexico	Case No. 16-00276-UT	Return on Equity (electric)
Public Service Company of New Mexico	08/15	Public Service Company of New Mexico	Case No. 15-00261-UT	Return on Equity (electric)
Public Service Company of New Mexico	12/14	Public Service Company of New Mexico	Case No. 14-00332-UT	Return on Equity (electric)
Public Service Company of New Mexico	12/14	Public Service Company of New Mexico	Case No. 13-00390-UT	Cost of Capital and Financial Integrity
Southwestern Public Service Company	02/11	Southwestern Public Service Company	Case No. 10-00395-UT	Return on Equity (electric)
Public Service Company of New Mexico	06/10	Public Service Company of New Mexico	Case No. 10-00086-UT	Return on Equity (electric)
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)

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 92 of 176

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Consolidated Edison Company of New York, Inc.	11/09	Consolidated Edison Company of New York, Inc.	Case No. 09-G-0795	Return on Equity (gas)
Consolidated Edison Company of New York, Inc.	11/09	Consolidated Edison Company of New York, Inc.	Case No. 09-S-0794	Return on Equity (steam)
Niagara Mohawk Power Corporation	07/01	Niagara Mohawk Power Corporation	Case No. 01-E-1046	Power Purchase and Sale Agreement; Standard Offer Service Agreement
North Carolina Utilities Commission				
Duke Energy Carolinas, LLC	08/17	Duke Energy Carolinas, LLC	Docket No. E-7, Sub 1146	Return on Equity
Duke Energy Progress, LLC	06/17	Duke Energy Progress, LLC	Docket No. E-2, Sub 1142	Return on Equity
Public Service Company of North Carolina, Inc.	03/16	Public Service Company of North Carolina, Inc.	Docket No. G-5, Sub 565	Return on Equity
Dominion North Carolina Power	03/16	Dominion North Carolina Power	Docket No. E-22, Sub 532	Return on Equity
Duke Energy Carolinas, LLC	02/13	Duke Energy Carolinas, LLC	Docket No. E-7, Sub 1026	Return on Equity
Carolina Power & Light Company d/b/a Progress Energy Carolinas, Inc.	10/12	Carolina Power & Light Company d/b/a Progress Energy Carolinas, Inc.	Docket No. E-2, Sub 1023	Return on Equity
Virginia Electric and Power Company d/b/a Dominion North Carolina Power	03/12	Virginia Electric and Power Company d/b/a Dominion North Carolina Power	Docket No. E-22, Sub 479	Return on Equity (electric)
Duke Energy Carolinas, LLC	07/11	Duke Energy Carolinas, LLC	Docket No. E-7, Sub 989	Return on Equity (electric)
North Dakota Public Service Commission				
Otter Tail Power Company	11/17	Otter Tail Power Company	Docket No. 17-398	Return on Equity (electric)
Otter Tail Power Company	11/08	Otter Tail Power Company	Docket No. 08-862	Return on Equity (electric)
Oklahoma Corporation Commission				
CenterPoint Energy Resources Corp., d/b/a CenterPoint Energy Oklahoma Gas	03/16	CenterPoint Energy Resources Corp., d/b/a CenterPoint Energy Oklahoma Gas	Cause No. PUD201600094	Return on Equity
Oklahoma Gas & Electric Company	12/15	Oklahoma Gas & Electric Company	Cause No. PUD201500273	Return on Equity
Public Service Company of Oklahoma	07/15	Public Service Company of Oklahoma	Cause No. PUD201500208	Return on Equity
Oklahoma Gas & Electric Company	07/11	Oklahoma Gas & Electric Company	Cause No. PUD201100087	Return on Equity
CenterPoint Energy Resources Corp., d/b/a CenterPoint Energy Oklahoma Gas	03/09	CenterPoint Energy Oklahoma Gas	Cause No. PUD200900055	Return on Equity

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 93 of 176

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	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				
South Carolina Electric & Gas	08/18	South Carolina Electric & Gas	Docket No. 2017-370-E	Return on Equity
South Carolina Electric & Gas	12/17	South Carolina Electric & Gas	Docket No. 2017-305-E	Return on Equity
Duke Energy Progress, LLC	07/16	Duke Energy Progress, LLC	Docket No. 2016-227-E	Return on Equity
Duke Energy Carolinas, LLC	03/13	Duke Energy Carolinas, LLC	Docket No. 2013-59-E	Return on Equity
South Carolina Electric & Gas	06/12	South Carolina Electric & Gas	Docket No. 2012-218-E	Return on Equity
Duke Energy Carolinas, LLC	08/11	Duke Energy Carolinas, LLC	Docket No. 2011-271-E	Return on Equity
South Carolina Electric & Gas	03/10	South Carolina Electric & Gas	Docket No. 2009-489-E	Return on Equity
South Dakota Public Utilities Commission				
Otter Tail Power Company	04/18	Otter Tail Power Company	Docket No. EL18-021	Return on Equity (electric)
Otter Tail Power Company	08/10	Otter Tail Power Company	Docket No. EL10-011	Return on Equity (electric)
Northern States Power Company	06/09	South Dakota Division of Northern States Power	Docket No. EL09-009	Return on Equity (electric)
Otter Tail Power Company	10/08	Otter Tail Power Company	Docket No. EL08-030	Return on Equity (electric)
Texas Public Utility Commission				
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

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 94 of 176

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
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 – West Texas Division	06/18	Atmos Energy Corporation – West Texas Division	GUD 10743	Return on Equity
Atmos Energy Corporation – Mid-Texas Division	06/18	Atmos Energy Corporation – Mid-Texas Division	GUD 10742	Return on Equity
CenterPoint Energy Resources Corp. D/B/A CenterPoint Energy Entex And CenterPoint Energy Texas Gas	11/17	CenterPoint Energy Resources Corp. D/B/A CenterPoint Energy Entex And CenterPoint Energy Texas Gas	GUD 10669	Return on Equity
Atmos Pipeline - Texas	01/17	Atmos Pipeline - Texas	GUD 10580	Return on Equity
CenterPoint Energy Resources Corp. D/B/A CenterPoint Energy Entex And CenterPoint Energy Texas Gas	12/16	CenterPoint Energy Resources Corp. D/B/A CenterPoint Energy Entex And CenterPoint Energy Texas Gas	GUD 10567	Return on Equity

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 95 of 176

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Entex and CenterPoint Energy Texas Gas	03/15	CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Entex and CenterPoint Energy Texas Gas	GUD 10432	Return on Equity
CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Entex and CenterPoint Energy Texas Gas	07/12	CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Entex and CenterPoint Energy Texas Gas	GUD 10182	Return on Equity
Atmos Energy Corporation – West Texas Division	06/12	Atmos Energy Corporation – West Texas Division	GUD 10174	Return on Equity
Atmos Energy Corporation – Mid-Texas Division	06/12	Atmos Energy Corporation – Mid-Texas Division	GUD 10170	Return on Equity
CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Entex and CenterPoint Energy Texas Gas	12/10	CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Entex and CenterPoint Energy Texas Gas	GUD 10038	Return on Equity
Atmos Pipeline – Texas	09/10	Atmos Pipeline - Texas	GUD 10000	Return on Equity
CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Entex and CenterPoint Energy Texas Gas	07/09	CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Entex and CenterPoint Energy Texas Gas	GUD 9902	Return on Equity
CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Texas Gas	03/08	CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Texas Gas	GUD 9791	Return on Equity
Utah Public Service Commission				
Questar Gas Company	12/07	Questar Gas Company	Docket No. 07-057-13	Return on Equity
Vermont Public Service Board				
Central Vermont Public Service Corporation; Green Mountain Power	02/12	Central Vermont Public Service Corporation; Green Mountain Power	Docket No. 7770	Merger Policy
Central Vermont Public Service Corporation	12/10	Central Vermont Public Service Corporation	Docket No. 7627	Return on Equity (electric)
Green Mountain Power	04/06	Green Mountain Power	Docket Nos. 7175 and 7176	Return on Equity (electric)
Vermont Gas Systems, Inc.	12/05	Vermont Gas Systems	Docket Nos. 7109 and 7160	Return on Equity (gas)
Virginia State Corporation Commission				
Virginia Electric and Power Company	03/17	Virginia Electric and Power Company	Case No. PUR-2017-00038	Return on Equity
Virginia Natural Gas, Inc.	03/17	Virginia Natural Gas, Inc.	Case No. PUE-2016-00143	Return on Equity

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 96 of 176

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Virginia Electric and Power Company	10/16	Virginia Electric and Power Company	Case No. PUE-2016-00112; PUE-2016-00113; PUE-2016-00136	Return on Equity
Washington Gas Light Company	06/16	Washington Gas Light Company	Case No. PUE-2016-00001	Return on Equity
Virginia Electric and Power Company	06/16	Virginia Electric and Power Company	Case Nos. PUE-2016-00063; PUE-2016-00062; PUE-2016-00061; PUE-2016-00060; PUE-2016-00059	Return on Equity
Virginia Electric and Power Company	12/15	Virginia Electric and Power Company	Case Nos. PUE-2015-00058; PUE-2015-00059; PUE-2015-00060; PUE-2015-00061; PUE-2015-00075; PUE-2015-00089; PUE-2015-00102; PUE-2015-00104	Return on Equity
Virginia Electric and Power Company	03/15	Virginia Electric and Power Company	Case No. PUE-2015-00027	Return on Equity
Virginia Electric and Power Company	03/13	Virginia Electric and Power Company	Case No. PUE-2013-00020	Return on Equity
Virginia Natural Gas, Inc.	02/11	Virginia Natural Gas, Inc.	Case No. PUE-2010-00142	Capital Structure
Columbia Gas of Virginia, Inc.	06/06	Columbia Gas of Virginia, Inc.	Case No. PUE-2005-00098	Merger Synergies
Dominion Resources	10/01	Virginia Electric and Power Company	Case No. PUE000584	Corporate Structure and Electric Generation Strategy

Expert Reports

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

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 97 of 176

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	$2.24	$75.54	2.97%	3.05%	6.00%	6.00%	5.00%	5.67%	8.04%	8.72%	9.05%
Alliant Energy Corporation	LNT	$1.34	$43.19	3.10%	3.19%	5.50%	5.75%	6.50%	5.92%	8.69%	9.11%	9.70%
Ameren Corporation	AEE	$1.90	$64.47	2.95%	3.05%	6.50%	6.90%	7.50%	6.97%	9.54%	10.02%	10.56%
American Electric Power Company, Inc.	AEP	$2.48	$71.74	3.46%	3.55%	5.60%	5.59%	4.50%	5.23%	8.03%	8.78%	9.15%
Avangrid, Inc.	AGR	$1.76	$48.46	3.63%	3.82%	9.10%	9.50%	13.00%	10.53%	12.90%	14.36%	16.87%
Black Hills Corporation	BKH	$1.90	$59.07	3.22%	3.30%	4.50%	4.32%	6.50%	5.11%	7.61%	8.41%	9.82%
CMS Energy Corporation	CMS	$1.43	$49.58	2.88%	2.98%	6.20%	6.97%	7.00%	6.72%	9.17%	9.70%	9.99%
DTE Energy Company	DTE	$3.53	$110.97	3.18%	3.28%	5.30%	5.49%	7.50%	6.10%	8.57%	9.37%	10.80%
El Paso Electric	EE	$1.44	$59.64	2.41%	2.47%	4.70%	4.70%	4.50%	4.63%	6.97%	7.10%	7.17%
Hawaiian Electric Industries, Inc.	HE	$1.24	$35.51	3.49%	3.59%	6.70%	6.65%	3.50%	5.62%	7.05%	9.21%	10.31%
NextEra Energy, Inc.	NEE	$4.44	$170.56	2.60%	2.72%	8.40%	9.44%	9.00%	8.95%	11.11%	11.67%	12.17%
NorthWestern Corporation	NWE	$2.20	$59.53	3.70%	3.75%	2.30%	2.45%	3.50%	2.75%	6.04%	6.50%	7.26%
OGE Energy Corp.	OGE	$1.46	$36.80	3.97%	4.08%	5.20%	5.30%	6.00%	5.50%	9.27%	9.58%	10.09%
Otter Tail Corporation	OTTR	$1.34	$47.80	2.80%	2.92%	NA	9.00%	7.50%	8.25%	10.41%	11.17%	11.93%
Pinnacle West Capital Corporation	PNW	$2.78	$80.04	3.47%	3.55%	4.50%	3.72%	5.00%	4.41%	7.26%	7.96%	8.56%
PNM Resources, Inc.	PNM	$1.06	$39.32	2.70%	2.77%	4.60%	4.45%	7.50%	5.52%	7.21%	8.29%	10.30%
Portland General Electric Company	POR	$1.45	$46.13	3.14%	3.21%	3.10%	4.95%	4.00%	4.02%	6.29%	7.22%	8.17%
Southern Company	SO	$2.40	$43.82	5.48%	5.56%	4.50%	1.37%	3.00%	2.96%	6.88%	8.51%	10.10%
WEC Energy Group, Inc.	WEC	$2.21	$67.80	3.26%	3.34%	4.10%	4.54%	7.00%	5.21%	7.43%	8.56%	10.37%
Xcel Energy Inc.	XEL	$1.52	$47.96	3.17%	3.26%	5.80%	5.95%	5.50%	5.75%	8.76%	9.01%	9.21%
Proxy Group Mean				3.28%	3.37%	5.40%	5.65%	6.18%	5.79%	8.36%	9.16%	10.08%
Proxy Group Median				3.18%	3.27%	5.30%	5.54%	6.25%	5.57%	8.04%	8.89%	10.04%

Notes:
[1] Source: Bloomberg Professional
[2] Source: Bloomberg Professional, equals indicated number of trading day average as of October 12, 2018
[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])

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 98 of 176

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	$2.24	$76.26	2.94%	3.02%	6.00%	6.00%	5.00%	5.67%	8.01%	8.69%	9.03%
Alliant Energy Corporation	LNT	$1.34	$42.54	3.15%	3.24%	5.50%	5.75%	6.50%	5.92%	8.74%	9.16%	9.75%
Ameren Corporation	AEE	$1.90	$62.24	3.05%	3.16%	6.50%	6.90%	7.50%	6.97%	9.65%	10.13%	10.67%
American Electric Power Company, Inc.	AEP	$2.48	$70.30	3.53%	3.62%	5.60%	5.59%	4.50%	5.23%	8.11%	8.85%	9.23%
Avangrid, Inc.	AGR	$1.76	$50.18	3.51%	3.69%	9.10%	9.50%	13.00%	10.53%	12.77%	14.23%	16.74%
Black Hills Corporation	BKH	$1.90	$59.75	3.18%	3.26%	4.50%	4.32%	6.50%	5.11%	7.57%	8.37%	9.78%
CMS Energy Corporation	CMS	$1.43	$48.10	2.97%	3.07%	6.20%	6.97%	7.00%	6.72%	9.26%	9.80%	10.08%
DTE Energy Company	DTE	$3.53	$107.77	3.28%	3.38%	5.30%	5.49%	7.50%	6.10%	8.66%	9.47%	10.90%
El Paso Electric	EE	$1.44	$60.19	2.39%	2.45%	4.70%	4.70%	4.50%	4.63%	6.95%	7.08%	7.15%
Hawaiian Electric Industries, Inc.	HE	$1.24	$34.91	3.55%	3.65%	6.70%	6.65%	3.50%	5.62%	7.11%	9.27%	10.37%
NextEra Energy, Inc.	NEE	$4.44	$168.69	2.63%	2.75%	8.40%	9.44%	9.00%	8.95%	11.14%	11.70%	12.20%
NorthWestern Corporation	NWE	$2.20	$58.57	3.76%	3.81%	2.30%	2.45%	3.50%	2.75%	6.10%	6.56%	7.32%
OGE Energy Corp.	OGE	$1.46	$36.07	4.05%	4.16%	5.20%	5.30%	6.00%	5.50%	9.35%	9.66%	10.17%
Otter Tail Corporation	OTTR	$1.34	$47.96	2.79%	2.91%	NA	9.00%	7.50%	8.25%	10.40%	11.16%	11.92%
Pinnacle West Capital Corporation	PNW	$2.78	$79.81	3.48%	3.56%	4.50%	3.72%	5.00%	4.41%	7.27%	7.97%	8.57%
PNM Resources, Inc.	PNM	$1.06	$38.86	2.73%	2.80%	4.60%	4.45%	7.50%	5.52%	7.24%	8.32%	10.33%
Portland General Electric Company	POR	$1.45	$44.81	3.24%	3.30%	3.10%	4.95%	4.00%	4.02%	6.39%	7.32%	8.27%
Southern Company	SO	$2.40	$45.57	5.27%	5.34%	4.50%	1.37%	3.00%	2.96%	6.67%	8.30%	9.89%
WEC Energy Group, Inc.	WEC	$2.21	$65.81	3.36%	3.45%	4.10%	4.54%	7.00%	5.21%	7.53%	8.66%	10.48%
Xcel Energy Inc.	XEL	$1.52	$46.66	3.26%	3.35%	5.80%	5.95%	5.50%	5.75%	8.85%	9.10%	9.30%
Proxy Group Mean				3.31%	3.40%	5.40%	5.65%	6.18%	5.79%	8.39%	9.19%	10.11%
Proxy Group Median				3.25%	3.33%	5.30%	5.54%	6.25%	5.57%	8.06%	8.98%	9.98%

Notes:
[1] Source: Bloomberg Professional
[2] Source: Bloomberg Professional, equals indicated number of trading day average as of October 12, 2018
[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])

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 99 of 176

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	$2.24	$74.31	3.01%	3.10%	6.00%	6.00%	5.00%	5.67%	8.09%	8.77%	9.11%
Alliant Energy Corporation	LNT	$1.34	$41.40	3.24%	3.33%	5.50%	5.75%	6.50%	5.92%	8.83%	9.25%	9.84%
Ameren Corporation	AEE	$1.90	$59.17	3.21%	3.32%	6.50%	6.90%	7.50%	6.97%	9.82%	10.29%	10.83%
American Electric Power Company, Inc.	AEP	$2.48	$68.70	3.61%	3.70%	5.60%	5.59%	4.50%	5.23%	8.19%	8.93%	9.31%
Avangrid, Inc.	AGR	$1.76	$50.30	3.50%	3.68%	9.10%	9.50%	13.00%	10.53%	12.76%	14.22%	16.73%
Black Hills Corporation	BKH	$1.90	$57.07	3.33%	3.41%	4.50%	4.32%	6.50%	5.11%	7.72%	8.52%	9.94%
CMS Energy Corporation	CMS	$1.43	$46.23	3.09%	3.20%	6.20%	6.97%	7.00%	6.72%	9.39%	9.92%	10.20%
DTE Energy Company	DTE	$3.53	$105.09	3.36%	3.46%	5.30%	5.49%	7.50%	6.10%	8.75%	9.56%	10.99%
El Paso Electric	EE	$1.44	$55.93	2.57%	2.63%	4.70%	4.70%	4.50%	4.63%	7.13%	7.27%	7.34%
Hawaiian Electric Industries, Inc.	HE	$1.24	$34.36	3.61%	3.71%	6.70%	6.65%	3.50%	5.62%	7.17%	9.33%	10.43%
NextEra Energy, Inc.	NEE	$4.44	$163.58	2.71%	2.84%	8.40%	9.44%	9.00%	8.95%	11.23%	11.78%	12.28%
NorthWestern Corporation	NWE	$2.20	$55.76	3.95%	4.00%	2.30%	2.45%	3.50%	2.75%	6.29%	6.75%	7.51%
OGE Energy Corp.	OGE	$1.46	$34.24	4.26%	4.38%	5.20%	5.30%	6.00%	5.50%	9.58%	9.88%	10.39%
Otter Tail Corporation	OTTR	$1.34	$45.52	2.94%	3.06%	NA	9.00%	7.50%	8.25%	10.55%	11.31%	12.08%
Pinnacle West Capital Corporation	PNW	$2.78	$78.93	3.52%	3.60%	4.50%	3.72%	5.00%	4.41%	7.31%	8.01%	8.61%
PNM Resources, Inc.	PNM	$1.06	$38.14	2.78%	2.86%	4.60%	4.45%	7.50%	5.52%	7.29%	8.37%	10.38%
Portland General Electric Company	POR	$1.45	$42.71	3.39%	3.46%	3.10%	4.95%	4.00%	4.02%	6.55%	7.48%	8.43%
Southern Company	SO	$2.40	$44.96	5.34%	5.42%	4.50%	1.37%	3.00%	2.96%	6.74%	8.37%	9.96%
WEC Energy Group, Inc.	WEC	$2.21	$63.81	3.46%	3.55%	4.10%	4.54%	7.00%	5.21%	7.63%	8.77%	10.58%
Xcel Energy Inc.	XEL	$1.52	$45.61	3.33%	3.43%	5.80%	5.95%	5.50%	5.75%	8.92%	9.18%	9.38%
Proxy Group Mean				3.41%	3.51%	5.40%	5.65%	6.18%	5.79%	8.50%	9.30%	10.22%
Proxy Group Median				3.35%	3.45%	5.30%	5.54%	6.25%	5.57%	8.14%	9.06%	10.08%

Notes:
[1] Source: Bloomberg Professional
[2] Source: Bloomberg Professional, equals indicated number of trading day average as of October 12, 2018
[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])

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 100 of 176

Multi-Stage Growth Discounted Cash Flow Model
30 Day Average Stock Price
Average EPS Growth Rate Estimate in First Stage

Inputs		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Stock	EPS Growth Rate Estimates				Long-Term	Payout Ratio			Iterative Solution		Terminal	Terminal
Company	Ticker	Price	Zacks	First Call	Value Line	Average	Growth	2018	2022	2028	Proof	IRR	P/E Ratio	PEG Ratio
ALLETE, Inc.	ALE	$75.54	6.00%	6.00%	5.00%	5.67%	5.46%	66.00%	64.00%	65.57%	($0.00)	8.60%	22.00	4.03
Alliant Energy Corporation	LNT	$43.19	5.50%	5.75%	6.50%	5.92%	5.46%	64.00%	64.00%	65.57%	($0.00)	9.01%	19.48	3.57
Ameren Corporation	AEE	$64.47	6.50%	6.90%	7.50%	6.97%	5.46%	56.00%	59.00%	65.57%	$0.00	8.94%	19.85	3.64
American Electric Power Company, Inc.	AEP	$71.74	5.60%	5.59%	4.50%	5.23%	5.46%	66.00%	63.00%	65.57%	($0.00)	9.18%	18.59	3.41
Avangrid, Inc.	AGR	$48.46	9.10%	9.50%	13.00%	10.53%	5.46%	80.00%	67.00%	65.57%	($0.00)	9.09%	19.02	3.49
Black Hills Corporation	BKH	$59.07	4.50%	4.32%	6.50%	5.11%	5.46%	54.00%	57.00%	65.57%	($0.00)	9.53%	16.96	3.11
CMS Energy Corporation	CMS	$49.58	6.20%	6.97%	7.00%	6.72%	5.46%	60.00%	59.00%	65.57%	($0.00)	8.96%	19.73	3.62
DTE Energy Company	DTE	$110.97	5.30%	5.49%	7.50%	6.10%	5.46%	58.00%	59.00%	65.57%	($0.00)	9.42%	17.47	3.20
El Paso Electric	EE	$59.64	4.70%	4.70%	4.50%	4.63%	5.46%	57.00%	60.00%	65.57%	($0.00)	8.29%	24.43	4.48
Hawaiian Electric Industries, Inc.	HE	$35.51	6.70%	6.65%	3.50%	5.62%	5.46%	66.00%	59.00%	65.57%	($0.00)	8.92%	19.98	3.66
NextEra Energy, Inc.	NEE	$170.56	8.40%	9.44%	9.00%	8.95%	5.46%	56.00%	63.00%	65.57%	($0.00)	9.00%	19.54	3.58
NorthWestern Corporation	NWE	$59.53	2.30%	2.45%	3.50%	2.75%	5.46%	62.00%	64.00%	65.57%	($0.00)	8.96%	19.73	3.61
OGE Energy Corp.	OGE	$36.80	5.20%	5.30%	6.00%	5.50%	5.46%	68.00%	71.00%	65.57%	($0.00)	9.46%	17.30	3.17
Otter Tail Corporation	OTTR	$47.80	NA	9.00%	7.50%	8.25%	5.46%	66.00%	60.00%	65.57%	($0.00)	8.92%	19.96	3.66
Pinnacle West Capital Corporation	PNW	$80.04	4.50%	3.72%	5.00%	4.41%	5.46%	63.00%	63.00%	65.57%	($0.00)	9.32%	17.92	3.28
PNM Resources, Inc.	PNM	$39.32	4.60%	4.45%	7.50%	5.52%	5.46%	52.00%	50.00%	65.57%	($0.00)	8.98%	19.65	3.60
Portland General Electric Company	POR	$46.13	3.10%	4.95%	4.00%	4.02%	5.46%	65.00%	65.00%	65.57%	($0.00)	8.84%	20.42	3.74
Southern Company	SO	$43.82	4.50%	1.37%	3.00%	2.96%	5.46%	79.00%	74.00%	65.57%	($0.00)	10.39%	14.03	2.57
WEC Energy Group, Inc.	WEC	$67.80	4.10%	4.54%	7.00%	5.21%	5.46%	66.00%	65.00%	65.57%	($0.00)	8.88%	20.21	3.70
Xcel Energy Inc.	XEL	$47.96	5.80%	5.95%	5.50%	5.75%	5.46%	62.00%	63.00%	65.57%	($0.00)	9.10%	18.99	3.48
											Mean	9.09%	19.26	
											Max	10.39%		
											Min	8.29%		

Projected Annual Earnings per Share		[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]
Company	Ticker	2017	2018	2019	2020	2021	2022	**2023**	2024	2025	2026	2027	**2028**	2029	2030	2031	2032
ALLETE, Inc.	ALE	$3.13	$3.31	$3.49	$3.69	$3.90	$4.12	$4.36	$4.60	$4.85	$5.12	$5.40	$5.70	$6.01	$6.34	$6.68	$7.05
Alliant Energy Corporation	LNT	$1.99	$2.11	$2.23	$2.36	$2.50	$2.65	$2.81	$2.97	$3.14	$3.31	$3.50	$3.69	$3.89	$4.10	$4.33	$4.56
Ameren Corporation	AEE	$2.77	$2.96	$3.17	$3.39	$3.63	$3.88	$4.14	$4.41	$4.68	$4.96	$5.24	$5.53	$5.83	$6.15	$6.48	$6.84
American Electric Power Company, Inc.	AEP	$3.62	$3.81	$4.01	$4.22	$4.44	$4.67	$4.92	$5.18	$5.45	$5.75	$6.06	$6.39	$6.74	$7.11	$7.49	$7.90
Avangrid, Inc.	AGR	$1.67	$1.85	$2.04	$2.26	$2.49	$2.76	$3.02	$3.29	$3.55	$3.81	$4.05	$4.27	$4.50	$4.75	$5.00	$5.28
Black Hills Corporation	BKH	$3.38	$3.55	$3.73	$3.92	$4.13	$4.34	$4.56	$4.80	$5.05	$5.32	$5.61	$5.91	$6.24	$6.58	$6.94	$7.32
CMS Energy Corporation	CMS	$2.17	$2.32	$2.47	$2.64	$2.82	$3.00	$3.20	$3.40	$3.61	$3.82	$4.04	$4.26	$4.49	$4.74	$4.99	$5.27
DTE Energy Company	DTE	$5.73	$6.08	$6.45	$6.84	$7.26	$7.70	$8.16	$8.64	$9.14	$9.66	$10.20	$10.76	$11.34	$11.96	$12.62	$13.30
El Paso Electric	EE	$2.42	$2.53	$2.65	$2.77	$2.90	$3.04	$3.18	$3.34	$3.50	$3.69	$3.88	$4.09	$4.32	$4.55	$4.80	$5.06
Hawaiian Electric Industries, Inc.	HE	$1.64	$1.73	$1.83	$1.93	$2.04	$2.16	$2.28	$2.40	$2.54	$2.68	$2.82	$2.98	$3.14	$3.31	$3.49	$3.68
NextEra Energy, Inc.	NEE	$6.50	$7.08	$7.72	$8.41	$9.16	$9.98	$10.81	$11.65	$12.49	$13.32	$14.12	$14.89	$15.71	$16.56	$17.47	$18.42
NorthWestern Corporation	NWE	$3.34	$3.43	$3.53	$3.62	$3.72	$3.83	$3.95	$4.09	$4.26	$4.45	$4.68	$4.93	$5.20	$5.48	$5.78	$6.10
OGE Energy Corp.	OGE	$1.92	$2.03	$2.14	$2.25	$2.38	$2.51	$2.65	$2.79	$2.95	$3.11	$3.28	$3.46	$3.64	$3.84	$4.05	$4.27
Otter Tail Corporation	OTTR	$1.86	$2.01	$2.18	$2.36	$2.55	$2.76	$2.98	$3.20	$3.42	$3.64	$3.85	$4.06	$4.28	$4.52	$4.76	$5.02
Pinnacle West Capital Corporation	PNW	$4.43	$4.63	$4.83	$5.04	$5.26	$5.50	$5.75	$6.02	$6.32	$6.64	$6.99	$7.37	$7.78	$8.20	$8.65	$9.12
PNM Resources, Inc.	PNM	$1.92	$2.03	$2.14	$2.26	$2.38	$2.51	$2.65	$2.80	$2.95	$3.11	$3.28	$3.46	$3.65	$3.85	$4.06	$4.28
Portland General Electric Company	POR	$2.29	$2.38	$2.48	$2.58	$2.68	$2.79	$2.91	$3.04	$3.18	$3.34	$3.51	$3.71	$3.91	$4.12	$4.35	$4.58
Southern Company	SO	$3.21	$3.30	$3.40	$3.50	$3.61	$3.71	$3.84	$3.98	$4.15	$4.34	$4.56	$4.81	$5.07	$5.35	$5.64	$5.95
WEC Energy Group, Inc.	WEC	$3.14	$3.30	$3.48	$3.66	$3.85	$4.05	$4.26	$4.49	$4.73	$4.98	$5.25	$5.54	$5.84	$6.16	$6.49	$6.85
Xcel Energy Inc.	XEL	$2.30	$2.43	$2.57	$2.72	$2.88	$3.04	$3.22	$3.40	$3.59	$3.79	$4.00	$4.21	$4.44	$4.69	$4.94	$5.21

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 101 of 176

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 102 of 176

Projected Annual
Dividend Payout Ratio

		[30]	[31]	[32]	[33]	[34]	[35]	[36]	[37]	[38]	[39]	[40]	[41]	[42]	[43]	[44]
Company	Ticker	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ALLETE, Inc.	ALE	66.00%	65.50%	65.00%	64.500%	64.00%	64.26%	64.52%	64.79%	65.05%	65.31%	65.57%	65.57%	65.57%	65.57%	65.57%
Alliant Energy Corporation	LNT	64.00%	64.00%	64.00%	64.000%	64.00%	64.26%	64.52%	64.79%	65.05%	65.31%	65.57%	65.57%	65.57%	65.57%	65.57%
Ameren Corporation	AEE	56.00%	56.75%	57.50%	58.250%	59.00%	60.10%	61.19%	62.29%	63.38%	64.48%	65.57%	65.57%	65.57%	65.57%	65.57%
American Electric Power Company, Inc.	AEP	66.00%	65.25%	64.50%	63.750%	63.00%	63.43%	63.86%	64.29%	64.71%	65.14%	65.57%	65.57%	65.57%	65.57%	65.57%
Avangrid, Inc.	AGR	80.00%	76.75%	73.50%	70.250%	67.00%	66.76%	66.52%	66.29%	66.05%	65.81%	65.57%	65.57%	65.57%	65.57%	65.57%
Black Hills Corporation	BKH	54.00%	54.75%	55.50%	56.250%	57.00%	58.43%	59.86%	61.29%	62.71%	64.14%	65.57%	65.57%	65.57%	65.57%	65.57%
CMS Energy Corporation	CMS	60.00%	59.75%	59.50%	59.250%	59.00%	60.10%	61.19%	62.29%	63.38%	64.48%	65.57%	65.57%	65.57%	65.57%	65.57%
DTE Energy Company	DTE	58.00%	58.25%	58.50%	58.750%	59.00%	60.10%	61.19%	62.29%	63.38%	64.48%	65.57%	65.57%	65.57%	65.57%	65.57%
El Paso Electric	EE	57.00%	57.75%	58.50%	59.250%	60.00%	60.93%	61.86%	62.79%	63.71%	64.64%	65.57%	65.57%	65.57%	65.57%	65.57%
Hawaiian Electric Industries, Inc.	HE	66.00%	64.25%	62.50%	60.750%	59.00%	60.10%	61.19%	62.29%	63.38%	64.48%	65.57%	65.57%	65.57%	65.57%	65.57%
NextEra Energy, Inc.	NEE	56.00%	57.75%	59.50%	61.250%	63.00%	63.43%	63.86%	64.29%	64.71%	65.14%	65.57%	65.57%	65.57%	65.57%	65.57%
NorthWestern Corporation	NWE	62.00%	62.50%	63.00%	63.500%	64.00%	64.26%	64.52%	64.79%	65.05%	65.31%	65.57%	65.57%	65.57%	65.57%	65.57%
OGE Energy Corp.	OGE	68.00%	68.75%	69.50%	70.250%	71.00%	70.10%	69.19%	68.29%	67.38%	66.48%	65.57%	65.57%	65.57%	65.57%	65.57%
Otter Tail Corporation	OTTR	66.00%	64.50%	63.00%	61.500%	60.00%	60.93%	61.86%	62.79%	63.71%	64.64%	65.57%	65.57%	65.57%	65.57%	65.57%
Pinnacle West Capital Corporation	PNW	63.00%	63.00%	63.00%	63.000%	63.00%	63.43%	63.86%	64.29%	64.71%	65.14%	65.57%	65.57%	65.57%	65.57%	65.57%
PNM Resources, Inc.	PNM	52.00%	51.50%	51.00%	50.500%	50.00%	52.60%	55.19%	57.79%	60.38%	62.98%	65.57%	65.57%	65.57%	65.57%	65.57%
Portland General Electric Company	POR	65.00%	65.00%	65.00%	65.000%	65.00%	65.10%	65.19%	65.29%	65.38%	65.48%	65.57%	65.57%	65.57%	65.57%	65.57%
Southern Company	SO	79.00%	77.75%	76.50%	75.250%	74.00%	72.60%	71.19%	69.79%	68.38%	66.98%	65.57%	65.57%	65.57%	65.57%	65.57%
WEC Energy Group, Inc.	WEC	66.00%	65.75%	65.50%	65.250%	65.00%	65.10%	65.19%	65.29%	65.38%	65.48%	65.57%	65.57%	65.57%	65.57%	65.57%
Xcel Energy Inc.	XEL	62.00%	62.25%	62.50%	62.750%	63.00%	63.43%	63.86%	64.29%	64.71%	65.14%	65.57%	65.57%	65.57%	65.57%	65.57%

Projected Annual
Cash Flows

		[45]	[46]	[47]	[48]	[49]	[50]	[51]	[52]	[53]	[54]	[55]	[56]	[57]	[58]	[59]	[60]
Company	Ticker	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Terminal Value
ALLETE, Inc.	ALE	$2.18	$2.29	$2.40	$2.52	$2.64	$2.80	$2.97	$3.15	$3.33	$3.53	$3.74	$3.94	$4.16	$4.38	$4.62	$155.09
Alliant Energy Corporation	LNT	$1.35	$1.43	$1.51	$1.60	$1.70	$1.80	$1.92	$2.03	$2.16	$2.28	$2.42	$2.55	$2.69	$2.84	$2.99	$88.86
Ameren Corporation	AEE	$1.66	$1.80	$1.95	$2.11	$2.29	$2.49	$2.70	$2.92	$3.14	$3.38	$3.63	$3.82	$4.03	$4.25	$4.48	$135.75
American Electric Power Company, Inc.	AEP	$2.51	$2.62	$2.72	$2.83	$2.94	$3.12	$3.31	$3.51	$3.72	$3.95	$4.19	$4.42	$4.66	$4.91	$5.18	$146.91
Avangrid, Inc.	AGR	$1.48	$1.57	$1.66	$1.75	$1.85	$2.02	$2.19	$2.35	$2.51	$2.66	$2.80	$2.95	$3.11	$3.28	$3.46	$100.41
Black Hills Corporation	BKH	$1.92	$2.04	$2.18	$2.32	$2.47	$2.66	$2.87	$3.10	$3.34	$3.60	$3.88	$4.09	$4.31	$4.55	$4.80	$124.10
CMS Energy Corporation	CMS	$1.39	$1.48	$1.57	$1.67	$1.77	$1.92	$2.08	$2.25	$2.42	$2.60	$2.79	$2.94	$3.11	$3.27	$3.45	$103.90
DTE Energy Company	DTE	$3.53	$3.76	$4.00	$4.27	$4.54	$4.91	$5.29	$5.70	$6.12	$6.58	$7.05	$7.44	$7.84	$8.27	$8.72	$232.37
El Paso Electric	EE	$1.44	$1.53	$1.62	$1.72	$1.82	$1.94	$2.06	$2.20	$2.35	$2.51	$2.68	$2.83	$2.99	$3.15	$3.32	$123.67
Hawaiian Electric Industries, Inc.	HE	$1.14	$1.18	$1.21	$1.24	$1.27	$1.37	$1.47	$1.58	$1.70	$1.82	$1.95	$2.06	$2.17	$2.29	$2.41	$73.55
NextEra Energy, Inc.	NEE	$3.97	$4.46	$5.00	$5.61	$6.29	$6.86	$7.44	$8.03	$8.62	$9.20	$9.77	$10.30	$10.86	$11.45	$12.08	$359.88
NorthWestern Corporation	NWE	$2.13	$2.20	$2.28	$2.36	$2.45	$2.54	$2.64	$2.76	$2.90	$3.05	$3.23	$3.41	$3.60	$3.79	$4.00	$120.33
OGE Energy Corp.	OGE	$1.38	$1.47	$1.57	$1.67	$1.78	$1.86	$1.93	$2.01	$2.09	$2.18	$2.27	$2.39	$2.52	$2.66	$2.80	$73.92
Otter Tail Corporation	OTTR	$1.33	$1.41	$1.49	$1.57	$1.66	$1.82	$1.98	$2.15	$2.32	$2.49	$2.66	$2.81	$2.96	$3.12	$3.29	$100.26
Pinnacle West Capital Corporation	PNW	$2.91	$3.04	$3.18	$3.32	$3.46	$3.65	$3.84	$4.06	$4.30	$4.55	$4.83	$5.10	$5.38	$5.67	$5.98	$163.45
PNM Resources, Inc.	PNM	$1.05	$1.10	$1.15	$1.20	$1.26	$1.39	$1.54	$1.70	$1.88	$2.07	$2.27	$2.39	$2.52	$2.66	$2.81	$84.09
Portland General Electric Company	POR	$1.55	$1.61	$1.68	$1.74	$1.81	$1.89	$1.98	$2.08	$2.18	$2.30	$2.43	$2.56	$2.70	$2.85	$3.01	$93.61
Southern Company	SO	$2.61	$2.65	$2.68	$2.71	$2.75	$2.79	$2.84	$2.90	$2.97	$3.06	$3.16	$3.33	$3.51	$3.70	$3.90	$83.49
WEC Energy Group, Inc.	WEC	$2.18	$2.29	$2.40	$2.51	$2.63	$2.77	$2.92	$3.09	$3.26	$3.44	$3.63	$3.83	$4.04	$4.26	$4.49	$138.42
Xcel Energy Inc.	XEL	$1.51	$1.60	$1.70	$1.80	$1.92	$2.04	$2.17	$2.31	$2.45	$2.60	$2.76	$2.91	$3.07	$3.24	$3.42	$98.94

Projected Annual Data
Investor Cash Flows

Company	Ticker	[61] Initial Outflow	[62] 10/12/18	[63] 12/31/18	[64] 6/30/19	[65] 6/30/20	[66] 6/30/21	[67] 6/30/22	[68] 6/30/23	[69] 6/30/24	[70] 6/30/25	[71] 6/30/26	[72] 6/30/27	[73] 6/30/28	[74] 6/30/29	[75] 6/30/30	[76] 6/30/31	[77] 6/30/32
ALLETE, Inc.	ALE	($75.54)	$0.00	$0.48	$2.24	$2.40	$2.52	$2.64	$2.80	$2.97	$3.15	$3.33	$3.53	$3.74	$3.94	$4.16	$4.38	$159.71
Alliant Energy Corporation	LNT	($43.19)	$0.00	$0.30	$1.39	$1.51	$1.60	$1.70	$1.80	$1.92	$2.03	$2.16	$2.28	$2.42	$2.55	$2.69	$2.84	$91.85
Ameren Corporation	AEE	($64.47)	$0.00	$0.36	$1.72	$1.95	$2.11	$2.29	$2.49	$2.70	$2.92	$3.14	$3.38	$3.63	$3.82	$4.03	$4.25	$140.24
American Electric Power Company, Inc.	AEP	($71.74)	$0.00	$0.55	$2.58	$2.72	$2.83	$2.94	$3.12	$3.31	$3.51	$3.72	$3.95	$4.19	$4.42	$4.66	$4.91	$152.09
Avangrid, Inc.	AGR	($48.46)	$0.00	$0.32	$1.55	$1.66	$1.75	$1.85	$2.02	$2.19	$2.35	$2.51	$2.66	$2.80	$2.95	$3.11	$3.28	$103.87
Black Hills Corporation	BKH	($59.07)	$0.00	$0.42	$1.97	$2.18	$2.32	$2.47	$2.66	$2.87	$3.10	$3.34	$3.60	$3.88	$4.09	$4.31	$4.55	$128.89
CMS Energy Corporation	CMS	($49.58)	$0.00	$0.30	$1.44	$1.57	$1.67	$1.77	$1.92	$2.08	$2.25	$2.42	$2.60	$2.79	$2.94	$3.11	$3.27	$107.35
DTE Energy Company	DTE	($110.97)	$0.00	$0.77	$3.63	$4.00	$4.27	$4.54	$4.91	$5.29	$5.70	$6.12	$6.58	$7.05	$7.44	$7.84	$8.27	$241.10
El Paso Electric	EE	($59.64)	$0.00	$0.32	$1.48	$1.62	$1.72	$1.82	$1.94	$2.06	$2.20	$2.35	$2.51	$2.68	$2.83	$2.99	$3.15	$126.99
Hawaiian Electric Industries, Inc.	HE	($35.51)	$0.00	$0.25	$1.18	$1.21	$1.24	$1.27	$1.37	$1.47	$1.58	$1.70	$1.82	$1.95	$2.06	$2.17	$2.29	$75.97
NextEra Energy, Inc.	NEE	($170.56)	$0.00	$0.87	$4.14	$5.00	$5.61	$6.29	$6.86	$7.44	$8.03	$8.62	$9.20	$9.77	$10.30	$10.86	$11.45	$371.96
NorthWestern Corporation	NWE	($59.53)	$0.00	$0.47	$2.16	$2.28	$2.36	$2.45	$2.54	$2.64	$2.76	$2.90	$3.05	$3.23	$3.41	$3.60	$3.79	$124.33
OGE Energy Corp.	OGE	($36.80)	$0.00	$0.30	$1.42	$1.57	$1.67	$1.78	$1.86	$1.93	$2.01	$2.09	$2.18	$2.27	$2.39	$2.52	$2.66	$76.72
Otter Tail Corporation	OTTR	($47.80)	$0.00	$0.29	$1.38	$1.49	$1.57	$1.66	$1.82	$1.98	$2.15	$2.32	$2.49	$2.66	$2.81	$2.96	$3.12	$103.55
Pinnacle West Capital Corporation	PNW	($80.04)	$0.00	$0.64	$2.98	$3.18	$3.32	$3.46	$3.65	$3.84	$4.06	$4.30	$4.55	$4.83	$5.10	$5.38	$5.67	$169.43
PNM Resources, Inc.	PNM	($39.32)	$0.00	$0.23	$1.08	$1.15	$1.20	$1.26	$1.39	$1.54	$1.70	$1.88	$2.07	$2.27	$2.39	$2.52	$2.66	$86.89
Portland General Electric Company	POR	($46.13)	$0.00	$0.34	$1.58	$1.68	$1.74	$1.81	$1.89	$1.98	$2.08	$2.18	$2.30	$2.43	$2.56	$2.70	$2.85	$96.61
Southern Company	SO	($43.82)	$0.00	$0.57	$2.65	$2.68	$2.71	$2.75	$2.79	$2.84	$2.90	$2.97	$3.06	$3.16	$3.33	$3.51	$3.70	$87.39
WEC Energy Group, Inc.	WEC	($67.80)	$0.00	$0.48	$2.24	$2.40	$2.51	$2.63	$2.77	$2.92	$3.09	$3.26	$3.44	$3.63	$3.83	$4.04	$4.26	$142.91
Xcel Energy Inc.	XEL	($47.96)	$0.00	$0.33	$1.55	$1.70	$1.80	$1.92	$2.04	$2.17	$2.31	$2.45	$2.60	$2.76	$2.91	$3.07	$3.24	$102.35

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 103 of 176

Multi-Stage Growth Discounted Cash Flow Model
30 Day Average Stock Price
High EPS Growth Rate Estimate in First Stage

Inputs		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Stock	EPS Growth Rate Estimates				Long-Term	Payout Ratio			Iterative Solution		Terminal	Terminal
Company	Ticker	Price	Zacks	First Call	Value Line	High Growth	Growth	2018	2022	2028	Proof	IRR	P/E Ratio	PEG Ratio
ALLETE, Inc.	ALE	$75.54	6.00%	6.00%	5.00%	6.00%	5.46%	66.00%	64.00%	65.57%	($0.00)	8.67%	21.52	3.94
Alliant Energy Corporation	LNT	$43.19	5.50%	5.75%	6.50%	6.50%	5.46%	64.00%	64.00%	65.57%	($0.00)	9.15%	18.75	3.44
Ameren Corporation	AEE	$64.47	6.50%	6.90%	7.50%	7.50%	5.46%	56.00%	59.00%	65.57%	($0.00)	9.06%	19.18	3.52
American Electric Power Company, Inc.	AEP	$71.74	5.60%	5.59%	4.50%	5.60%	5.46%	66.00%	63.00%	65.57%	($0.00)	9.27%	18.14	3.32
Avangrid, Inc.	AGR	$48.46	9.10%	9.50%	13.00%	13.00%	5.46%	80.00%	67.00%	65.57%	($0.00)	9.69%	16.34	2.99
Black Hills Corporation	BKH	$59.07	4.50%	4.32%	6.50%	6.50%	5.46%	54.00%	57.00%	65.57%	($0.00)	9.91%	15.52	2.84
CMS Energy Corporation	CMS	$49.58	6.20%	6.97%	7.00%	7.00%	5.46%	60.00%	59.00%	65.57%	($0.00)	9.03%	19.38	3.55
DTE Energy Company	DTE	$110.97	5.30%	5.49%	7.50%	7.50%	5.46%	58.00%	59.00%	65.57%	($0.00)	9.79%	15.98	2.93
El Paso Electric	EE	$59.64	4.70%	4.70%	4.50%	4.70%	5.46%	57.00%	60.00%	65.57%	($0.00)	8.30%	24.32	4.46
Hawaiian Electric Industries, Inc.	HE	$35.51	6.70%	6.65%	3.50%	6.70%	5.46%	66.00%	59.00%	65.57%	($0.00)	9.17%	18.63	3.41
NextEra Energy, Inc.	NEE	$170.56	8.40%	9.44%	9.00%	9.44%	5.46%	56.00%	63.00%	65.57%	($0.00)	9.11%	18.94	3.47
NorthWestern Corporation	NWE	$59.53	2.30%	2.45%	3.50%	3.50%	5.46%	62.00%	64.00%	65.57%	($0.00)	9.14%	18.75	3.44
OGE Energy Corp.	OGE	$36.80	5.20%	5.30%	6.00%	6.00%	5.46%	68.00%	71.00%	65.57%	($0.00)	9.59%	16.74	3.07
Otter Tail Corporation	OTTR	$47.80	NA	9.00%	7.50%	9.00%	5.46%	66.00%	60.00%	65.57%	($0.00)	9.09%	19.03	3.49
Pinnacle West Capital Corporation	PNW	$80.04	4.50%	3.72%	5.00%	5.00%	5.46%	63.00%	63.00%	65.57%	($0.00)	9.47%	17.24	3.16
PNM Resources, Inc.	PNM	$39.32	4.60%	4.45%	7.50%	7.50%	5.46%	52.00%	50.00%	65.57%	($0.00)	9.45%	17.33	3.18
Portland General Electric Company	POR	$46.13	3.10%	4.95%	4.00%	4.95%	5.46%	65.00%	65.00%	65.57%	($0.00)	9.06%	19.19	3.52
Southern Company	SO	$43.82	4.50%	1.37%	3.00%	4.50%	5.46%	79.00%	74.00%	65.57%	($0.00)	10.92%	12.66	2.32
WEC Energy Group, Inc.	WEC	$67.80	4.10%	4.54%	7.00%	7.00%	5.46%	66.00%	65.00%	65.57%	($0.00)	9.30%	17.99	3.30
Xcel Energy Inc.	XEL	$47.96	5.80%	5.95%	5.50%	5.95%	5.46%	62.00%	63.00%	65.57%	($0.00)	9.15%	18.74	3.43
											Mean	9.32%	18.22	
											Max	10.92%		
											Min	8.30%		

Projected Annual Earnings per Share		[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]
Company	Ticker	2017	2018	2019	2020	2021	2022	**2023**	2024	2025	2026	2027	**2028**	2029	2030	2031	2032
ALLETE, Inc.	ALE	$3.13	$3.32	$3.52	$3.73	$3.95	$4.19	$4.44	$4.69	$4.96	$5.24	$5.53	$5.84	$6.15	$6.49	$6.84	$7.22
Alliant Energy Corporation	LNT	$1.99	$2.12	$2.26	$2.40	$2.56	$2.73	$2.90	$3.08	$3.26	$3.45	$3.64	$3.84	$4.05	$4.27	$4.51	$4.75
Ameren Corporation	AEE	$2.77	$2.98	$3.20	$3.44	$3.70	$3.98	$4.26	$4.55	$4.85	$5.14	$5.44	$5.74	$6.05	$6.38	$6.73	$7.10
American Electric Power Company, Inc.	AEP	$3.62	$3.82	$4.04	$4.26	$4.50	$4.75	$5.02	$5.30	$5.59	$5.90	$6.22	$6.56	$6.92	$7.30	$7.69	$8.11
Avangrid, Inc.	AGR	$1.67	$1.89	$2.13	$2.41	$2.72	$3.08	$3.44	$3.80	$4.15	$4.48	$4.78	$5.04	$5.32	$5.61	$5.91	$6.24
Black Hills Corporation	BKH	$3.38	$3.60	$3.83	$4.08	$4.35	$4.63	$4.92	$5.23	$5.54	$5.86	$6.19	$6.53	$6.88	$7.26	$7.66	$8.07
CMS Energy Corporation	CMS	$2.17	$2.32	$2.48	$2.66	$2.84	$3.04	$3.25	$3.46	$3.67	$3.89	$4.12	$4.34	$4.58	$4.83	$5.09	$5.37
DTE Energy Company	DTE	$5.73	$6.16	$6.62	$7.12	$7.65	$8.23	$8.82	$9.42	$10.03	$10.64	$11.26	$11.87	$12.52	$13.20	$13.92	$14.68
El Paso Electric	EE	$2.42	$2.53	$2.65	$2.78	$2.91	$3.04	$3.19	$3.35	$3.52	$3.70	$3.90	$4.11	$4.34	$4.57	$4.82	$5.09
Hawaiian Electric Industries, Inc.	HE	$1.64	$1.75	$1.87	$1.99	$2.13	$2.27	$2.42	$2.57	$2.72	$2.88	$3.05	$3.21	$3.39	$3.57	$3.77	$3.97
NextEra Energy, Inc.	NEE	$6.50	$7.11	$7.79	$8.52	$9.32	$10.20	$11.10	$12.00	$12.89	$13.77	$14.61	$15.41	$16.25	$17.14	$18.07	$19.06
NorthWestern Corporation	NWE	$3.34	$3.46	$3.58	$3.70	$3.83	$3.97	$4.12	$4.29	$4.48	$4.70	$4.94	$5.21	$5.49	$5.79	$6.11	$6.44
OGE Energy Corp.	OGE	$1.92	$2.04	$2.16	$2.29	$2.42	$2.57	$2.72	$2.88	$3.04	$3.22	$3.39	$3.58	$3.78	$3.98	$4.20	$4.43
Otter Tail Corporation	OTTR	$1.86	$2.03	$2.21	$2.41	$2.63	$2.86	$3.10	$3.35	$3.59	$3.83	$4.06	$4.28	$4.51	$4.76	$5.02	$5.29
Pinnacle West Capital Corporation	PNW	$4.43	$4.65	$4.88	$5.13	$5.38	$5.65	$5.94	$6.25	$6.57	$6.92	$7.29	$7.69	$8.11	$8.56	$9.02	$9.51
PNM Resources, Inc.	PNM	$1.92	$2.06	$2.22	$2.39	$2.56	$2.76	$2.95	$3.16	$3.36	$3.57	$3.77	$3.98	$4.20	$4.42	$4.67	$4.92
Portland General Electric Company	POR	$2.29	$2.40	$2.52	$2.65	$2.78	$2.92	$3.06	$3.22	$3.39	$3.57	$3.76	$3.96	$4.18	$4.41	$4.65	$4.90
Southern Company	SO	$3.21	$3.35	$3.51	$3.66	$3.83	$4.00	$4.19	$4.39	$4.61	$4.84	$5.10	$5.38	$5.67	$5.98	$6.31	$6.65
WEC Energy Group, Inc.	WEC	$3.14	$3.36	$3.59	$3.85	$4.12	$4.40	$4.70	$5.01	$5.32	$5.64	$5.96	$6.28	$6.63	$6.99	$7.37	$7.77
Xcel Energy Inc.	XEL	$2.30	$2.44	$2.58	$2.74	$2.90	$3.07	$3.25	$3.44	$3.64	$3.84	$4.05	$4.27	$4.51	$4.75	$5.01	$5.29

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 104 of 176

Projected Annual
Dividend Payout Ratio

Company	Ticker	[30] 2018	[31] 2019	[32] 2020	[33] 2021	[34] 2022	[35] 2023	[36] 2024	[37] 2025	[38] 2026	[39] 2027	[40] 2028	[41] 2029	[42] 2030	[43] 2031	[44] 2032
ALLETE, Inc.	ALE	66.00%	65.50%	65.00%	64.500%	64.00%	64.26%	64.52%	64.79%	65.05%	65.31%	65.57%	65.57%	65.57%	65.57%	65.57%
Alliant Energy Corporation	LNT	64.00%	64.00%	64.00%	64.000%	64.00%	64.26%	64.52%	64.79%	65.05%	65.31%	65.57%	65.57%	65.57%	65.57%	65.57%
Ameren Corporation	AEE	56.00%	56.75%	57.50%	58.250%	59.00%	60.10%	61.19%	62.29%	63.38%	64.48%	65.57%	65.57%	65.57%	65.57%	65.57%
American Electric Power Company, Inc.	AEP	66.00%	65.25%	64.50%	63.750%	63.00%	63.43%	63.86%	64.29%	64.71%	65.14%	65.57%	65.57%	65.57%	65.57%	65.57%
Avangrid, Inc.	AGR	80.00%	76.75%	73.50%	70.250%	67.00%	66.76%	66.52%	66.29%	66.05%	65.81%	65.57%	65.57%	65.57%	65.57%	65.57%
Black Hills Corporation	BKH	54.00%	54.75%	55.50%	56.250%	57.00%	58.43%	59.86%	61.29%	62.71%	64.14%	65.57%	65.57%	65.57%	65.57%	65.57%
CMS Energy Corporation	CMS	60.00%	59.75%	59.50%	59.250%	59.00%	60.10%	61.19%	62.29%	63.38%	64.48%	65.57%	65.57%	65.57%	65.57%	65.57%
DTE Energy Company	DTE	58.00%	58.25%	58.50%	58.750%	59.00%	60.10%	61.19%	62.29%	63.38%	64.48%	65.57%	65.57%	65.57%	65.57%	65.57%
El Paso Electric	EE	57.00%	57.75%	58.50%	59.250%	60.00%	60.93%	61.86%	62.79%	63.71%	64.64%	65.57%	65.57%	65.57%	65.57%	65.57%
Hawaiian Electric Industries, Inc.	HE	66.00%	64.25%	62.50%	60.750%	59.00%	60.10%	61.19%	62.29%	63.38%	64.48%	65.57%	65.57%	65.57%	65.57%	65.57%
NextEra Energy, Inc.	NEE	56.00%	57.75%	59.50%	61.250%	63.00%	63.43%	63.86%	64.29%	64.71%	65.14%	65.57%	65.57%	65.57%	65.57%	65.57%
NorthWestern Corporation	NWE	62.00%	62.50%	63.00%	63.500%	64.00%	64.26%	64.52%	64.79%	65.05%	65.31%	65.57%	65.57%	65.57%	65.57%	65.57%
OGE Energy Corp.	OGE	68.00%	68.75%	69.50%	70.250%	71.00%	70.10%	69.19%	68.29%	67.38%	66.48%	65.57%	65.57%	65.57%	65.57%	65.57%
Otter Tail Corporation	OTTR	66.00%	64.50%	63.00%	61.500%	60.00%	60.93%	61.86%	62.79%	63.71%	64.64%	65.57%	65.57%	65.57%	65.57%	65.57%
Pinnacle West Capital Corporation	PNW	63.00%	63.00%	63.00%	63.000%	63.00%	63.43%	63.86%	64.29%	64.71%	65.14%	65.57%	65.57%	65.57%	65.57%	65.57%
PNM Resources, Inc.	PNM	52.00%	51.50%	51.00%	50.500%	50.00%	52.60%	55.19%	57.79%	60.38%	62.98%	65.57%	65.57%	65.57%	65.57%	65.57%
Portland General Electric Company	POR	65.00%	65.00%	65.00%	65.000%	65.00%	65.10%	65.19%	65.29%	65.38%	65.48%	65.57%	65.57%	65.57%	65.57%	65.57%
Southern Company	SO	79.00%	77.75%	76.50%	75.250%	74.00%	72.60%	71.19%	69.79%	68.38%	66.98%	65.57%	65.57%	65.57%	65.57%	65.57%
WEC Energy Group, Inc.	WEC	66.00%	65.75%	65.50%	65.250%	65.00%	65.10%	65.19%	65.29%	65.38%	65.48%	65.57%	65.57%	65.57%	65.57%	65.57%
Xcel Energy Inc.	XEL	62.00%	62.25%	62.50%	62.750%	63.00%	63.43%	63.86%	64.29%	64.71%	65.14%	65.57%	65.57%	65.57%	65.57%	65.57%

Projected Annual
Cash Flows

Company	Ticker	[45] 2018	[46] 2019	[47] 2020	[48] 2021	[49] 2022	[50] 2023	[51] 2024	[52] 2025	[53] 2026	[54] 2027	[55] 2028	[56] 2029	[57] 2030	[58] 2031	[59] 2032	[60] Terminal Value
ALLETE, Inc.	ALE	$2.19	$2.30	$2.42	$2.55	$2.68	$2.85	$3.03	$3.22	$3.41	$3.61	$3.83	$4.04	$4.26	$4.49	$4.73	$155.33
Alliant Energy Corporation	LNT	$1.36	$1.44	$1.54	$1.64	$1.74	$1.86	$1.99	$2.11	$2.24	$2.38	$2.52	$2.66	$2.80	$2.96	$3.12	$89.14
Ameren Corporation	AEE	$1.67	$1.82	$1.98	$2.15	$2.35	$2.56	$2.79	$3.02	$3.26	$3.51	$3.76	$3.97	$4.19	$4.41	$4.65	$136.19
American Electric Power Company, Inc.	AEP	$2.52	$2.63	$2.75	$2.87	$2.99	$3.18	$3.38	$3.59	$3.82	$4.05	$4.30	$4.54	$4.78	$5.05	$5.32	$147.21
Avangrid, Inc.	AGR	$1.51	$1.64	$1.77	$1.91	$2.06	$2.30	$2.53	$2.75	$2.96	$3.15	$3.31	$3.49	$3.68	$3.88	$4.09	$101.92
Black Hills Corporation	BKH	$1.94	$2.10	$2.27	$2.45	$2.64	$2.88	$3.13	$3.39	$3.68	$3.97	$4.28	$4.51	$4.76	$5.02	$5.29	$125.34
CMS Energy Corporation	CMS	$1.39	$1.48	$1.58	$1.69	$1.80	$1.95	$2.12	$2.29	$2.47	$2.65	$2.85	$3.00	$3.17	$3.34	$3.52	$104.07
DTE Energy Company	DTE	$3.57	$3.86	$4.16	$4.50	$4.85	$5.30	$5.76	$6.24	$6.74	$7.26	$7.79	$8.21	$8.66	$9.13	$9.63	$234.61
El Paso Electric	EE	$1.44	$1.53	$1.62	$1.72	$1.83	$1.94	$2.07	$2.21	$2.36	$2.52	$2.70	$2.84	$3.00	$3.16	$3.34	$123.71
Hawaiian Electric Industries, Inc.	HE	$1.15	$1.20	$1.25	$1.29	$1.34	$1.45	$1.57	$1.70	$1.83	$1.96	$2.11	$2.22	$2.34	$2.47	$2.61	$74.02
NextEra Energy, Inc.	NEE	$3.98	$4.50	$5.07	$5.71	$6.43	$7.04	$7.66	$8.29	$8.91	$9.52	$10.10	$10.66	$11.24	$11.85	$12.50	$360.94
NorthWestern Corporation	NWE	$2.14	$2.24	$2.33	$2.43	$2.54	$2.65	$2.77	$2.90	$3.06	$3.23	$3.41	$3.60	$3.80	$4.00	$4.22	$120.79
OGE Energy Corp.	OGE	$1.38	$1.48	$1.59	$1.70	$1.82	$1.91	$1.99	$2.08	$2.17	$2.26	$2.35	$2.48	$2.61	$2.75	$2.90	$74.11
Otter Tail Corporation	OTTR	$1.34	$1.43	$1.52	$1.61	$1.72	$1.89	$2.07	$2.25	$2.44	$2.62	$2.80	$2.96	$3.12	$3.29	$3.47	$100.70
Pinnacle West Capital Corporation	PNW	$2.93	$3.08	$3.23	$3.39	$3.56	$3.77	$3.99	$4.23	$4.48	$4.75	$5.04	$5.32	$5.61	$5.92	$6.24	$164.02
PNM Resources, Inc.	PNM	$1.07	$1.14	$1.22	$1.29	$1.38	$1.55	$1.74	$1.94	$2.15	$2.38	$2.61	$2.75	$2.90	$3.06	$3.23	$85.28
Portland General Electric Company	POR	$1.56	$1.64	$1.72	$1.81	$1.90	$1.99	$2.10	$2.21	$2.33	$2.46	$2.60	$2.74	$2.89	$3.05	$3.21	$94.04
Southern Company	SO	$2.65	$2.73	$2.80	$2.88	$2.96	$3.04	$3.12	$3.21	$3.31	$3.42	$3.53	$3.72	$3.92	$4.14	$4.36	$84.22
WEC Energy Group, Inc.	WEC	$2.22	$2.36	$2.52	$2.69	$2.86	$3.06	$3.26	$3.47	$3.68	$3.90	$4.12	$4.34	$4.58	$4.83	$5.09	$139.75
Xcel Energy Inc.	XEL	$1.51	$1.61	$1.71	$1.82	$1.93	$2.06	$2.20	$2.34	$2.48	$2.64	$2.80	$2.95	$3.12	$3.29	$3.47	$99.05

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 105 of 176

Projected Annual Data
Investor Cash Flows

Company	Ticker	[61] Initial Outflow	[62] 10/12/18	[63] 12/31/18	[64] 6/30/19	[65] 6/30/20	[66] 6/30/21	[67] 6/30/22	[68] 6/30/23	[69] 6/30/24	[70] 6/30/25	[71] 6/30/26	[72] 6/30/27	[73] 6/30/28	[74] 6/30/29	[75] 6/30/30	[76] 6/30/31	[77] 6/30/32
ALLETE, Inc.	ALE	($75.54)	$0.00	$0.48	$2.26	$2.42	$2.55	$2.68	$2.85	$3.03	$3.22	$3.41	$3.61	$3.83	$4.04	$4.26	$4.49	$160.07
Alliant Energy Corporation	LNT	($43.19)	$0.00	$0.30	$1.40	$1.54	$1.64	$1.74	$1.86	$1.99	$2.11	$2.24	$2.38	$2.52	$2.66	$2.80	$2.96	$92.26
Ameren Corporation	AEE	($64.47)	$0.00	$0.37	$1.73	$1.98	$2.15	$2.35	$2.56	$2.79	$3.02	$3.26	$3.51	$3.76	$3.97	$4.19	$4.41	$140.85
American Electric Power Company, Inc.	AEP	($71.74)	$0.00	$0.55	$2.59	$2.75	$2.87	$2.99	$3.18	$3.38	$3.59	$3.82	$4.05	$4.30	$4.54	$4.78	$5.05	$152.53
Avangrid, Inc.	AGR	($48.46)	$0.00	$0.33	$1.61	$1.77	$1.91	$2.06	$2.30	$2.53	$2.75	$2.96	$3.15	$3.31	$3.49	$3.68	$3.88	$106.00
Black Hills Corporation	BKH	($59.07)	$0.00	$0.43	$2.01	$2.27	$2.45	$2.64	$2.88	$3.13	$3.39	$3.68	$3.97	$4.28	$4.51	$4.76	$5.02	$130.64
CMS Energy Corporation	CMS	($49.58)	$0.00	$0.31	$1.44	$1.58	$1.69	$1.80	$1.95	$2.12	$2.29	$2.47	$2.65	$2.85	$3.00	$3.17	$3.34	$107.59
DTE Energy Company	DTE	($110.97)	$0.00	$0.78	$3.71	$4.16	$4.50	$4.85	$5.30	$5.76	$6.24	$6.74	$7.26	$7.79	$8.21	$8.66	$9.13	$244.24
El Paso Electric	EE	($59.64)	$0.00	$0.32	$1.48	$1.62	$1.72	$1.83	$1.94	$2.07	$2.21	$2.36	$2.52	$2.70	$2.84	$3.00	$3.16	$127.04
Hawaiian Electric Industries, Inc.	HE	($35.51)	$0.00	$0.25	$1.19	$1.25	$1.29	$1.34	$1.45	$1.57	$1.70	$1.83	$1.96	$2.11	$2.22	$2.34	$2.47	$76.62
NextEra Energy, Inc.	NEE	($170.56)	$0.00	$0.87	$4.17	$5.07	$5.71	$6.43	$7.04	$7.66	$8.29	$8.91	$9.52	$10.10	$10.66	$11.24	$11.85	$373.44
NorthWestern Corporation	NWE	($59.53)	$0.00	$0.47	$2.18	$2.33	$2.43	$2.54	$2.65	$2.77	$2.90	$3.06	$3.23	$3.41	$3.60	$3.80	$4.00	$125.01
OGE Energy Corp.	OGE	($36.80)	$0.00	$0.30	$1.43	$1.59	$1.70	$1.82	$1.91	$1.99	$2.08	$2.17	$2.26	$2.35	$2.48	$2.61	$2.75	$77.01
Otter Tail Corporation	OTTR	($47.80)	$0.00	$0.29	$1.40	$1.52	$1.61	$1.72	$1.89	$2.07	$2.25	$2.44	$2.62	$2.80	$2.96	$3.12	$3.29	$104.17
Pinnacle West Capital Corporation	PNW	($80.04)	$0.00	$0.64	$3.00	$3.23	$3.39	$3.56	$3.77	$3.99	$4.23	$4.48	$4.75	$5.04	$5.32	$5.61	$5.92	$170.26
PNM Resources, Inc.	PNM	($39.32)	$0.00	$0.24	$1.11	$1.22	$1.29	$1.38	$1.55	$1.74	$1.94	$2.15	$2.38	$2.61	$2.75	$2.90	$3.06	$88.51
Portland General Electric Company	POR	($46.13)	$0.00	$0.34	$1.60	$1.72	$1.81	$1.90	$1.99	$2.10	$2.21	$2.33	$2.46	$2.60	$2.74	$2.89	$3.05	$97.26
Southern Company	SO	($43.82)	$0.00	$0.58	$2.71	$2.80	$2.88	$2.96	$3.04	$3.12	$3.21	$3.31	$3.42	$3.53	$3.72	$3.92	$4.14	$88.58
WEC Energy Group, Inc.	WEC	($67.80)	$0.00	$0.49	$2.30	$2.52	$2.69	$2.86	$3.06	$3.26	$3.47	$3.68	$3.90	$4.12	$4.34	$4.58	$4.83	$144.84
Xcel Energy Inc.	XEL	($47.96)	$0.00	$0.33	$1.56	$1.71	$1.82	$1.93	$2.06	$2.20	$2.34	$2.48	$2.64	$2.80	$2.95	$3.12	$3.29	$102.51

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 106 of 176

Multi-Stage Growth Discounted Cash Flow Model
30 Day Average Stock Price
Low EPS Growth Rate Estimate in First Stage

Inputs		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Stock	EPS Growth Rate Estimates				Long-Term	Payout Ratio			Iterative Solution		Terminal	Terminal
Company	Ticker	Price	Zacks	First Call	Value Line	Low Growth	Growth	2018	2022	2028	Proof	IRR	P/E Ratio	PEG Ratio
ALLETE, Inc.	ALE	$75.54	6.00%	6.00%	5.00%	5.00%	5.46%	66.00%	64.00%	65.57%	($0.00)	8.46%	23.00	4.21
Alliant Energy Corporation	LNT	$43.19	5.50%	5.75%	6.50%	5.50%	5.46%	64.00%	64.00%	65.57%	($0.00)	8.91%	20.02	3.67
Ameren Corporation	AEE	$64.47	6.50%	6.90%	7.50%	6.50%	5.46%	56.00%	59.00%	65.57%	($0.00)	8.84%	20.46	3.75
American Electric Power Company, Inc.	AEP	$71.74	5.60%	5.59%	4.50%	4.50%	5.46%	66.00%	63.00%	65.57%	($0.00)	9.00%	19.51	3.57
Avangrid, Inc.	AGR	$48.46	9.10%	9.50%	13.00%	9.10%	5.46%	80.00%	67.00%	65.57%	($0.00)	8.78%	20.84	3.82
Black Hills Corporation	BKH	$59.07	4.50%	4.32%	6.50%	4.32%	5.46%	54.00%	57.00%	65.57%	($0.00)	9.33%	17.85	3.27
CMS Energy Corporation	CMS	$49.58	6.20%	6.97%	7.00%	6.20%	5.46%	60.00%	59.00%	65.57%	($0.00)	8.85%	20.41	3.74
DTE Energy Company	DTE	$110.97	5.30%	5.49%	7.50%	5.30%	5.46%	58.00%	59.00%	65.57%	($0.00)	9.22%	18.39	3.37
El Paso Electric	EE	$59.64	4.70%	4.70%	4.50%	4.50%	5.46%	57.00%	60.00%	65.57%	($0.00)	8.26%	24.64	4.52
Hawaiian Electric Industries, Inc.	HE	$35.51	6.70%	6.65%	3.50%	3.50%	5.46%	66.00%	59.00%	65.57%	($0.00)	8.46%	23.01	4.22
NextEra Energy, Inc.	NEE	$170.56	8.40%	9.44%	9.00%	8.40%	5.46%	56.00%	63.00%	65.57%	($0.00)	8.88%	20.23	3.71
NorthWestern Corporation	NWE	$59.53	2.30%	2.45%	3.50%	2.30%	5.46%	62.00%	64.00%	65.57%	($0.00)	8.86%	20.34	3.73
OGE Energy Corp.	OGE	$36.80	5.20%	5.30%	6.00%	5.20%	5.46%	68.00%	71.00%	65.57%	($0.00)	9.38%	17.64	3.23
Otter Tail Corporation	OTTR	$47.80	NA	9.00%	7.50%	7.50%	5.46%	66.00%	60.00%	65.57%	($0.00)	8.76%	20.94	3.84
Pinnacle West Capital Corporation	PNW	$80.04	4.50%	3.72%	5.00%	3.72%	5.46%	63.00%	63.00%	65.57%	($0.00)	9.14%	18.76	3.44
PNM Resources, Inc.	PNM	$39.32	4.60%	4.45%	7.50%	4.45%	5.46%	52.00%	50.00%	65.57%	($0.00)	8.74%	21.06	3.86
Portland General Electric Company	POR	$46.13	3.10%	4.95%	4.00%	3.10%	5.46%	65.00%	65.00%	65.57%	($0.00)	8.64%	21.73	3.98
Southern Company	SO	$43.82	4.50%	1.37%	3.00%	1.37%	5.46%	79.00%	74.00%	65.57%	($0.00)	9.88%	15.64	2.87
WEC Energy Group, Inc.	WEC	$67.80	4.10%	4.54%	7.00%	4.10%	5.46%	66.00%	65.00%	65.57%	($0.00)	8.63%	21.78	3.99
Xcel Energy Inc.	XEL	$47.96	5.80%	5.95%	5.50%	5.50%	5.46%	62.00%	63.00%	65.57%	($0.00)	9.04%	19.30	3.54
											Mean	8.90%	20.28	
											Max	9.88%		
											Min	8.26%		

Projected Annual Earnings per Share		[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]
Company	Ticker	2017	2018	2019	2020	2021	2022	**2023**	2024	2025	2026	2027	**2028**	2029	2030	2031	2032
ALLETE, Inc.	ALE	$3.13	$3.29	$3.45	$3.62	$3.80	$3.99	$4.20	$4.41	$4.64	$4.89	$5.15	$5.44	$5.73	$6.04	$6.37	$6.72
Alliant Energy Corporation	LNT	$1.99	$2.10	$2.21	$2.34	$2.47	$2.60	$2.74	$2.89	$3.05	$3.22	$3.40	$3.58	$3.78	$3.98	$4.20	$4.43
Ameren Corporation	AEE	$2.77	$2.95	$3.14	$3.35	$3.56	$3.80	$4.04	$4.28	$4.54	$4.80	$5.07	$5.35	$5.64	$5.95	$6.28	$6.62
American Electric Power Company, Inc.	AEP	$3.62	$3.78	$3.95	$4.13	$4.32	$4.51	$4.72	$4.95	$5.20	$5.46	$5.75	$6.07	$6.40	$6.75	$7.11	$7.50
Avangrid, Inc.	AGR	$1.67	$1.82	$1.99	$2.17	$2.37	$2.58	$2.80	$3.02	$3.24	$3.46	$3.67	$3.87	$4.08	$4.30	$4.54	$4.78
Black Hills Corporation	BKH	$3.38	$3.53	$3.68	$3.84	$4.00	$4.18	$4.36	$4.57	$4.79	$5.04	$5.30	$5.59	$5.90	$6.22	$6.56	$6.91
CMS Energy Corporation	CMS	$2.17	$2.30	$2.45	$2.60	$2.76	$2.93	$3.11	$3.29	$3.49	$3.69	$3.89	$4.10	$4.33	$4.56	$4.81	$5.08
DTE Energy Company	DTE	$5.73	$6.03	$6.35	$6.69	$7.04	$7.42	$7.81	$8.23	$8.67	$9.14	$9.64	$10.17	$10.72	$11.31	$11.92	$12.57
El Paso Electric	EE	$2.42	$2.53	$2.64	$2.76	$2.89	$3.02	$3.16	$3.31	$3.47	$3.65	$3.85	$4.05	$4.28	$4.51	$4.76	$5.02
Hawaiian Electric Industries, Inc.	HE	$1.64	$1.70	$1.76	$1.82	$1.88	$1.95	$2.02	$2.11	$2.20	$2.31	$2.42	$2.56	$2.70	$2.84	$3.00	$3.16
NextEra Energy, Inc.	NEE	$6.50	$7.05	$7.64	$8.28	$8.97	$9.73	$10.50	$11.28	$12.06	$12.83	$13.60	$14.34	$15.12	$15.95	$16.82	$17.74
NorthWestern Corporation	NWE	$3.34	$3.42	$3.50	$3.58	$3.66	$3.74	$3.85	$3.98	$4.13	$4.31	$4.53	$4.77	$5.03	$5.31	$5.60	$5.90
OGE Energy Corp.	OGE	$1.92	$2.02	$2.12	$2.24	$2.35	$2.47	$2.60	$2.74	$2.89	$3.04	$3.21	$3.38	$3.57	$3.76	$3.97	$4.18
Otter Tail Corporation	OTTR	$1.86	$2.00	$2.15	$2.31	$2.48	$2.67	$2.86	$3.06	$3.25	$3.45	$3.65	$3.85	$4.06	$4.29	$4.52	$4.77
Pinnacle West Capital Corporation	PNW	$4.43	$4.59	$4.77	$4.94	$5.13	$5.32	$5.53	$5.77	$6.03	$6.33	$6.65	$7.02	$7.40	$7.80	$8.23	$8.68
PNM Resources, Inc.	PNM	$1.92	$2.01	$2.09	$2.19	$2.29	$2.39	$2.50	$2.62	$2.75	$2.89	$3.04	$3.21	$3.38	$3.56	$3.76	$3.96
Portland General Electric Company	POR	$2.29	$2.36	$2.43	$2.51	$2.59	$2.67	$2.76	$2.87	$2.99	$3.13	$3.29	$3.47	$3.66	$3.86	$4.07	$4.29
Southern Company	SO	$3.21	$3.25	$3.30	$3.34	$3.39	$3.44	$3.51	$3.60	$3.73	$3.88	$4.06	$4.28	$4.52	$4.77	$5.03	$5.30
WEC Energy Group, Inc.	WEC	$3.14	$3.27	$3.40	$3.54	$3.69	$3.84	$4.00	$4.19	$4.39	$4.61	$4.85	$5.11	$5.39	$5.69	$6.00	$6.32
Xcel Energy Inc.	XEL	$2.30	$2.43	$2.56	$2.70	$2.85	$3.01	$3.17	$3.35	$3.53	$3.72	$3.92	$4.14	$4.36	$4.60	$4.85	$5.12

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 107 of 176

Projected Annual
Dividend Payout Ratio

Company	Ticker	[30] 2018	[31] 2019	[32] 2020	[33] 2021	[34] 2022	[35] 2023	[36] 2024	[37] 2025	[38] 2026	[39] 2027	[40] 2028	[41] 2029	[42] 2030	[43] 2031	[44] 2032
ALLETE, Inc.	ALE	66.00%	65.50%	65.00%	64.500%	64.00%	64.26%	64.52%	64.79%	65.05%	65.31%	65.57%	65.57%	65.57%	65.57%	65.57%
Alliant Energy Corporation	LNT	64.00%	64.00%	64.00%	64.000%	64.00%	64.26%	64.52%	64.79%	65.05%	65.31%	65.57%	65.57%	65.57%	65.57%	65.57%
Ameren Corporation	AEE	56.00%	56.75%	57.50%	58.250%	59.00%	60.10%	61.19%	62.29%	63.38%	64.48%	65.57%	65.57%	65.57%	65.57%	65.57%
American Electric Power Company, Inc.	AEP	66.00%	65.25%	64.50%	63.750%	63.00%	63.43%	63.86%	64.29%	64.71%	65.14%	65.57%	65.57%	65.57%	65.57%	65.57%
Avangrid, Inc.	AGR	80.00%	76.75%	73.50%	70.250%	67.00%	66.76%	66.52%	66.29%	66.05%	65.81%	65.57%	65.57%	65.57%	65.57%	65.57%
Black Hills Corporation	BKH	54.00%	54.75%	55.50%	56.250%	57.00%	58.43%	59.86%	61.29%	62.71%	64.14%	65.57%	65.57%	65.57%	65.57%	65.57%
CMS Energy Corporation	CMS	60.00%	59.75%	59.50%	59.250%	59.00%	60.10%	61.19%	62.29%	63.38%	64.48%	65.57%	65.57%	65.57%	65.57%	65.57%
DTE Energy Company	DTE	58.00%	58.25%	58.50%	58.750%	59.00%	60.10%	61.19%	62.29%	63.38%	64.48%	65.57%	65.57%	65.57%	65.57%	65.57%
El Paso Electric	EE	57.00%	57.75%	58.50%	59.250%	60.00%	60.93%	61.86%	62.79%	63.71%	64.64%	65.57%	65.57%	65.57%	65.57%	65.57%
Hawaiian Electric Industries, Inc.	HE	66.00%	64.25%	62.50%	60.750%	59.00%	60.10%	61.19%	62.29%	63.38%	64.48%	65.57%	65.57%	65.57%	65.57%	65.57%
NextEra Energy, Inc.	NEE	56.00%	57.75%	59.50%	61.250%	63.00%	63.43%	63.86%	64.29%	64.71%	65.14%	65.57%	65.57%	65.57%	65.57%	65.57%
NorthWestern Corporation	NWE	62.00%	62.50%	63.00%	63.500%	64.00%	64.26%	64.52%	64.79%	65.05%	65.31%	65.57%	65.57%	65.57%	65.57%	65.57%
OGE Energy Corp.	OGE	68.00%	68.75%	69.50%	70.250%	71.00%	70.10%	69.19%	68.29%	67.38%	66.48%	65.57%	65.57%	65.57%	65.57%	65.57%
Otter Tail Corporation	OTTR	66.00%	64.50%	63.00%	61.500%	60.00%	60.93%	61.86%	62.79%	63.71%	64.64%	65.57%	65.57%	65.57%	65.57%	65.57%
Pinnacle West Capital Corporation	PNW	63.00%	63.00%	63.00%	63.000%	63.00%	63.43%	63.86%	64.29%	64.71%	65.14%	65.57%	65.57%	65.57%	65.57%	65.57%
PNM Resources, Inc.	PNM	52.00%	51.50%	51.00%	50.500%	50.00%	52.60%	55.19%	57.79%	60.38%	62.98%	65.57%	65.57%	65.57%	65.57%	65.57%
Portland General Electric Company	POR	65.00%	65.00%	65.00%	65.000%	65.00%	65.10%	65.19%	65.29%	65.38%	65.48%	65.57%	65.57%	65.57%	65.57%	65.57%
Southern Company	SO	79.00%	77.75%	76.50%	75.250%	74.00%	72.60%	71.19%	69.79%	68.38%	66.98%	65.57%	65.57%	65.57%	65.57%	65.57%
WEC Energy Group, Inc.	WEC	66.00%	65.75%	65.50%	65.250%	65.00%	65.10%	65.19%	65.29%	65.38%	65.48%	65.57%	65.57%	65.57%	65.57%	65.57%
Xcel Energy Inc.	XEL	62.00%	62.25%	62.50%	62.750%	63.00%	63.43%	63.86%	64.29%	64.71%	65.14%	65.57%	65.57%	65.57%	65.57%	65.57%

Projected Annual
Cash Flows

Company	Ticker	[45] 2018	[46] 2019	[47] 2020	[48] 2021	[49] 2022	[50] 2023	[51] 2024	[52] 2025	[53] 2026	[54] 2027	[55] 2028	[56] 2029	[57] 2030	[58] 2031	[59] 2032	[60] Terminal Value
ALLETE, Inc.	ALE	$2.17	$2.26	$2.36	$2.45	$2.56	$2.70	$2.85	$3.01	$3.18	$3.37	$3.56	$3.76	$3.96	$4.18	$4.41	$154.61
Alliant Energy Corporation	LNT	$1.34	$1.42	$1.50	$1.58	$1.66	$1.76	$1.87	$1.98	$2.09	$2.22	$2.35	$2.48	$2.61	$2.75	$2.90	$88.66
Ameren Corporation	AEE	$1.65	$1.78	$1.92	$2.08	$2.24	$2.42	$2.62	$2.83	$3.04	$3.27	$3.51	$3.70	$3.90	$4.11	$4.34	$135.39
American Electric Power Company, Inc.	AEP	$2.50	$2.58	$2.66	$2.75	$2.84	$2.99	$3.16	$3.34	$3.53	$3.75	$3.98	$4.19	$4.42	$4.66	$4.92	$146.33
Avangrid, Inc.	AGR	$1.46	$1.53	$1.59	$1.66	$1.73	$1.87	$2.01	$2.15	$2.28	$2.41	$2.54	$2.67	$2.82	$2.97	$3.14	$99.66
Black Hills Corporation	BKH	$1.90	$2.01	$2.13	$2.25	$2.38	$2.55	$2.74	$2.94	$3.16	$3.40	$3.67	$3.87	$4.08	$4.30	$4.53	$123.45
CMS Energy Corporation	CMS	$1.38	$1.46	$1.55	$1.64	$1.73	$1.87	$2.02	$2.17	$2.34	$2.51	$2.69	$2.84	$2.99	$3.16	$3.33	$103.58
DTE Energy Company	DTE	$3.50	$3.70	$3.91	$4.14	$4.38	$4.70	$5.04	$5.40	$5.79	$6.22	$6.67	$7.03	$7.41	$7.82	$8.24	$231.21
El Paso Electric	EE	$1.44	$1.53	$1.62	$1.71	$1.81	$1.92	$2.05	$2.18	$2.33	$2.49	$2.66	$2.80	$2.96	$3.12	$3.29	$123.59
Hawaiian Electric Industries, Inc.	HE	$1.12	$1.13	$1.14	$1.14	$1.15	$1.22	$1.29	$1.37	$1.46	$1.56	$1.68	$1.77	$1.86	$1.97	$2.07	$72.76
NextEra Energy, Inc.	NEE	$3.95	$4.41	$4.93	$5.50	$6.13	$6.66	$7.20	$7.75	$8.31	$8.86	$9.40	$9.92	$10.46	$11.03	$11.63	$358.76
NorthWestern Corporation	NWE	$2.12	$2.18	$2.25	$2.32	$2.39	$2.47	$2.57	$2.68	$2.81	$2.96	$3.13	$3.30	$3.48	$3.67	$3.87	$120.07
OGE Energy Corp.	OGE	$1.37	$1.46	$1.55	$1.65	$1.76	$1.82	$1.90	$1.97	$2.05	$2.13	$2.22	$2.34	$2.47	$2.60	$2.74	$73.80
Otter Tail Corporation	OTTR	$1.32	$1.39	$1.46	$1.53	$1.60	$1.74	$1.89	$2.04	$2.20	$2.36	$2.53	$2.67	$2.81	$2.96	$3.13	$99.83
Pinnacle West Capital Corporation	PNW	$2.89	$3.00	$3.11	$3.23	$3.35	$3.51	$3.68	$3.88	$4.09	$4.33	$4.60	$4.85	$5.12	$5.40	$5.69	$162.83
PNM Resources, Inc.	PNM	$1.04	$1.08	$1.12	$1.15	$1.19	$1.31	$1.44	$1.59	$1.74	$1.91	$2.10	$2.22	$2.34	$2.47	$2.60	$83.51
Portland General Electric Company	POR	$1.53	$1.58	$1.63	$1.68	$1.73	$1.80	$1.87	$1.95	$2.05	$2.15	$2.27	$2.40	$2.53	$2.67	$2.81	$93.21
Southern Company	SO	$2.57	$2.56	$2.56	$2.55	$2.54	$2.55	$2.56	$2.60	$2.65	$2.72	$2.81	$2.96	$3.12	$3.30	$3.47	$82.87
WEC Energy Group, Inc.	WEC	$2.16	$2.24	$2.32	$2.41	$2.50	$2.61	$2.73	$2.86	$3.01	$3.17	$3.35	$3.54	$3.73	$3.93	$4.15	$137.69
Xcel Energy Inc.	XEL	$1.50	$1.59	$1.69	$1.79	$1.89	$2.01	$2.14	$2.27	$2.41	$2.56	$2.71	$2.86	$3.02	$3.18	$3.36	$98.80

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 108 of 176

Projected Annual Data
Investor Cash Flows

Company	Ticker	[61] Initial Outflow	[62] 10/12/18	[63] 12/31/18	[64] 6/30/19	[65] 6/30/20	[66] 6/30/21	[67] 6/30/22	[68] 6/30/23	[69] 6/30/24	[70] 6/30/25	[71] 6/30/26	[72] 6/30/27	[73] 6/30/28	[74] 6/30/29	[75] 6/30/30	[76] 6/30/31	[77] 6/30/32
ALLETE, Inc.	ALE	($75.54)	$0.00	$0.48	$2.22	$2.36	$2.45	$2.56	$2.70	$2.85	$3.01	$3.18	$3.37	$3.56	$3.76	$3.96	$4.18	$159.02
Alliant Energy Corporation	LNT	($43.19)	$0.00	$0.29	$1.38	$1.50	$1.58	$1.66	$1.76	$1.87	$1.98	$2.09	$2.22	$2.35	$2.48	$2.61	$2.75	$91.56
Ameren Corporation	AEE	($64.47)	$0.00	$0.36	$1.71	$1.92	$2.08	$2.24	$2.42	$2.62	$2.83	$3.04	$3.27	$3.51	$3.70	$3.90	$4.11	$139.73
American Electric Power Company, Inc.	AEP	($71.74)	$0.00	$0.55	$2.55	$2.66	$2.75	$2.84	$2.99	$3.16	$3.34	$3.53	$3.75	$3.98	$4.19	$4.42	$4.66	$151.25
Avangrid, Inc.	AGR	($48.46)	$0.00	$0.32	$1.52	$1.59	$1.66	$1.73	$1.87	$2.01	$2.15	$2.28	$2.41	$2.54	$2.67	$2.82	$2.97	$102.80
Black Hills Corporation	BKH	($59.07)	$0.00	$0.42	$1.95	$2.13	$2.25	$2.38	$2.55	$2.74	$2.94	$3.16	$3.40	$3.67	$3.87	$4.08	$4.30	$127.99
CMS Energy Corporation	CMS	($49.58)	$0.00	$0.30	$1.43	$1.55	$1.64	$1.73	$1.87	$2.02	$2.17	$2.34	$2.51	$2.69	$2.84	$2.99	$3.16	$106.91
DTE Energy Company	DTE	($110.97)	$0.00	$0.77	$3.59	$3.91	$4.14	$4.38	$4.70	$5.04	$5.40	$5.79	$6.22	$6.67	$7.03	$7.41	$7.82	$239.45
El Paso Electric	EE	($59.64)	$0.00	$0.32	$1.47	$1.62	$1.71	$1.81	$1.92	$2.05	$2.18	$2.33	$2.49	$2.66	$2.80	$2.96	$3.12	$126.88
Hawaiian Electric Industries, Inc.	HE	($35.51)	$0.00	$0.25	$1.14	$1.14	$1.14	$1.15	$1.22	$1.29	$1.37	$1.46	$1.56	$1.68	$1.77	$1.86	$1.97	$74.83
NextEra Energy, Inc.	NEE	($170.56)	$0.00	$0.86	$4.11	$4.93	$5.50	$6.13	$6.66	$7.20	$7.75	$8.31	$8.86	$9.40	$9.92	$10.46	$11.03	$370.39
NorthWestern Corporation	NWE	($59.53)	$0.00	$0.46	$2.14	$2.25	$2.32	$2.39	$2.47	$2.57	$2.68	$2.81	$2.96	$3.13	$3.30	$3.48	$3.67	$123.94
OGE Energy Corp.	OGE	($36.80)	$0.00	$0.30	$1.41	$1.55	$1.65	$1.76	$1.82	$1.90	$1.97	$2.05	$2.13	$2.22	$2.34	$2.47	$2.60	$76.54
Otter Tail Corporation	OTTR	($47.80)	$0.00	$0.29	$1.37	$1.46	$1.53	$1.60	$1.74	$1.89	$2.04	$2.20	$2.36	$2.53	$2.67	$2.81	$2.96	$102.96
Pinnacle West Capital Corporation	PNW	($80.04)	$0.00	$0.63	$2.95	$3.11	$3.23	$3.35	$3.51	$3.68	$3.88	$4.09	$4.33	$4.60	$4.85	$5.12	$5.40	$168.53
PNM Resources, Inc.	PNM	($39.32)	$0.00	$0.23	$1.07	$1.12	$1.15	$1.19	$1.31	$1.44	$1.59	$1.74	$1.91	$2.10	$2.22	$2.34	$2.47	$86.11
Portland General Electric Company	POR	($46.13)	$0.00	$0.34	$1.56	$1.63	$1.68	$1.73	$1.80	$1.87	$1.95	$2.05	$2.15	$2.27	$2.40	$2.53	$2.67	$96.03
Southern Company	SO	($43.82)	$0.00	$0.56	$2.59	$2.56	$2.55	$2.54	$2.55	$2.56	$2.60	$2.65	$2.72	$2.81	$2.96	$3.12	$3.30	$86.34
WEC Energy Group, Inc.	WEC	($67.80)	$0.00	$0.47	$2.20	$2.32	$2.41	$2.50	$2.61	$2.73	$2.86	$3.01	$3.17	$3.35	$3.54	$3.73	$3.93	$141.84
Xcel Energy Inc.	XEL	($47.96)	$0.00	$0.33	$1.55	$1.69	$1.79	$1.89	$2.01	$2.14	$2.27	$2.41	$2.56	$2.71	$2.86	$3.02	$3.18	$102.16

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 109 of 176

Multi-Stage Growth Discounted Cash Flow Model
90 Day Average Stock Price
Average EPS Growth Rate Estimate in First Stage

Inputs		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Stock	EPS Growth Rate Estimates				Long-Term	Payout Ratio			Iterative Solution		Terminal	Terminal
Company	Ticker	Price	Zacks	First Call	Value Line	Average	Growth	2018	2022	2028	Proof	IRR	P/E Ratio	PEG Ratio
ALLETE, Inc.	ALE	$76.26	6.00%	6.00%	5.00%	5.67%	5.46%	66.00%	64.00%	65.57%	($0.00)	8.57%	22.21	4.07
Alliant Energy Corporation	LNT	$42.54	5.50%	5.75%	6.50%	5.92%	5.46%	64.00%	64.00%	65.57%	($0.00)	9.06%	19.18	3.51
Ameren Corporation	AEE	$62.24	6.50%	6.90%	7.50%	6.97%	5.46%	56.00%	59.00%	65.57%	($0.00)	9.06%	19.17	3.51
American Electric Power Company, Inc.	AEP	$70.30	5.60%	5.59%	4.50%	5.23%	5.46%	66.00%	63.00%	65.57%	($0.00)	9.25%	18.21	3.34
Avangrid, Inc.	AGR	$50.18	9.10%	9.50%	13.00%	10.53%	5.46%	80.00%	67.00%	65.57%	($0.00)	8.97%	19.70	3.61
Black Hills Corporation	BKH	$59.75	4.50%	4.32%	6.50%	5.11%	5.46%	54.00%	57.00%	65.57%	($0.00)	9.49%	17.16	3.14
CMS Energy Corporation	CMS	$48.10	6.20%	6.97%	7.00%	6.72%	5.46%	60.00%	59.00%	65.57%	($0.00)	9.07%	19.15	3.51
DTE Energy Company	DTE	$107.77	5.30%	5.49%	7.50%	6.10%	5.46%	58.00%	59.00%	65.57%	($0.00)	9.53%	16.97	3.11
El Paso Electric	EE	$60.19	4.70%	4.70%	4.50%	4.63%	5.46%	57.00%	60.00%	65.57%	($0.00)	8.26%	24.65	4.52
Hawaiian Electric Industries, Inc.	HE	$34.91	6.70%	6.65%	3.50%	5.62%	5.46%	66.00%	59.00%	65.57%	($0.00)	8.98%	19.64	3.60
NextEra Energy, Inc.	NEE	$168.69	8.40%	9.44%	9.00%	8.95%	5.46%	56.00%	63.00%	65.57%	($0.00)	9.04%	19.33	3.54
NorthWestern Corporation	NWE	$58.57	2.30%	2.45%	3.50%	2.75%	5.46%	62.00%	64.00%	65.57%	($0.00)	9.02%	19.40	3.55
OGE Energy Corp.	OGE	$36.07	5.20%	5.30%	6.00%	5.50%	5.46%	68.00%	71.00%	65.57%	($0.00)	9.54%	16.94	3.10
Otter Tail Corporation	OTTR	$47.96	NA	9.00%	7.50%	8.25%	5.46%	66.00%	60.00%	65.57%	($0.00)	8.91%	20.03	3.67
Pinnacle West Capital Corporation	PNW	$79.81	4.50%	3.72%	5.00%	4.41%	5.46%	63.00%	63.00%	65.57%	($0.00)	9.33%	17.87	3.27
PNM Resources, Inc.	PNM	$38.86	4.60%	4.45%	7.50%	5.52%	5.46%	52.00%	50.00%	65.57%	($0.00)	9.02%	19.43	3.56
Portland General Electric Company	POR	$44.81	3.10%	4.95%	4.00%	4.02%	5.46%	65.00%	65.00%	65.57%	($0.00)	8.95%	19.82	3.63
Southern Company	SO	$45.57	4.50%	1.37%	3.00%	2.96%	5.46%	79.00%	74.00%	65.57%	($0.00)	10.18%	14.63	2.68
WEC Energy Group, Inc.	WEC	$65.81	4.10%	4.54%	7.00%	5.21%	5.46%	66.00%	65.00%	65.57%	$0.00	8.98%	19.61	3.59
Xcel Energy Inc.	XEL	$46.66	5.80%	5.95%	5.50%	5.75%	5.46%	62.00%	63.00%	65.57%	($0.00)	9.20%	18.47	3.38
											Mean	9.12%	19.08	
											Max	10.18%		
											Min	8.26%		

Projected Annual Earnings per Share		[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]
Company	Ticker	2017	2018	2019	2020	2021	2022	**2023**	2024	2025	2026	2027	**2028**	2029	2030	2031	2032
ALLETE, Inc.	ALE	$3.13	$3.31	$3.49	$3.69	$3.90	$4.12	$4.36	$4.60	$4.85	$5.12	$5.40	$5.70	$6.01	$6.34	$6.68	$7.05
Alliant Energy Corporation	LNT	$1.99	$2.11	$2.23	$2.36	$2.50	$2.65	$2.81	$2.97	$3.14	$3.31	$3.50	$3.69	$3.89	$4.10	$4.33	$4.56
Ameren Corporation	AEE	$2.77	$2.96	$3.17	$3.39	$3.63	$3.88	$4.14	$4.41	$4.68	$4.96	$5.24	$5.53	$5.83	$6.15	$6.48	$6.84
American Electric Power Company, Inc.	AEP	$3.62	$3.81	$4.01	$4.22	$4.44	$4.67	$4.92	$5.18	$5.45	$5.75	$6.06	$6.39	$6.74	$7.11	$7.49	$7.90
Avangrid, Inc.	AGR	$1.67	$1.85	$2.04	$2.26	$2.49	$2.76	$3.02	$3.29	$3.55	$3.81	$4.05	$4.27	$4.50	$4.75	$5.00	$5.28
Black Hills Corporation	BKH	$3.38	$3.55	$3.73	$3.92	$4.13	$4.34	$4.56	$4.80	$5.05	$5.32	$5.61	$5.91	$6.24	$6.58	$6.94	$7.32
CMS Energy Corporation	CMS	$2.17	$2.32	$2.47	$2.64	$2.82	$3.00	$3.20	$3.40	$3.61	$3.82	$4.04	$4.26	$4.49	$4.74	$4.99	$5.27
DTE Energy Company	DTE	$5.73	$6.08	$6.45	$6.84	$7.26	$7.70	$8.16	$8.64	$9.14	$9.66	$10.20	$10.76	$11.34	$11.96	$12.62	$13.30
El Paso Electric	EE	$2.42	$2.53	$2.65	$2.77	$2.90	$3.04	$3.18	$3.34	$3.50	$3.69	$3.88	$4.09	$4.32	$4.55	$4.80	$5.06
Hawaiian Electric Industries, Inc.	HE	$1.64	$1.73	$1.83	$1.93	$2.04	$2.16	$2.28	$2.40	$2.54	$2.68	$2.82	$2.98	$3.14	$3.31	$3.49	$3.68
NextEra Energy, Inc.	NEE	$6.50	$7.08	$7.72	$8.41	$9.16	$9.98	$10.81	$11.65	$12.49	$13.32	$14.12	$14.89	$15.71	$16.56	$17.47	$18.42
NorthWestern Corporation	NWE	$3.34	$3.43	$3.53	$3.62	$3.72	$3.83	$3.95	$4.09	$4.26	$4.45	$4.68	$4.93	$5.20	$5.48	$5.78	$6.10
OGE Energy Corp.	OGE	$1.92	$2.03	$2.14	$2.25	$2.38	$2.51	$2.65	$2.79	$2.95	$3.11	$3.28	$3.46	$3.64	$3.84	$4.05	$4.27
Otter Tail Corporation	OTTR	$1.86	$2.01	$2.18	$2.36	$2.55	$2.76	$2.98	$3.20	$3.42	$3.64	$3.85	$4.06	$4.28	$4.52	$4.76	$5.02
Pinnacle West Capital Corporation	PNW	$4.43	$4.63	$4.83	$5.04	$5.26	$5.50	$5.75	$6.02	$6.32	$6.64	$6.99	$7.37	$7.78	$8.20	$8.65	$9.12
PNM Resources, Inc.	PNM	$1.92	$2.03	$2.14	$2.26	$2.38	$2.51	$2.65	$2.80	$2.95	$3.11	$3.28	$3.46	$3.65	$3.85	$4.06	$4.28
Portland General Electric Company	POR	$2.29	$2.38	$2.48	$2.58	$2.68	$2.79	$2.91	$3.04	$3.18	$3.34	$3.51	$3.71	$3.91	$4.12	$4.35	$4.58
Southern Company	SO	$3.21	$3.30	$3.40	$3.50	$3.61	$3.71	$3.84	$3.98	$4.15	$4.34	$4.56	$4.81	$5.07	$5.35	$5.64	$5.95
WEC Energy Group, Inc.	WEC	$3.14	$3.30	$3.48	$3.66	$3.85	$4.05	$4.26	$4.49	$4.73	$4.98	$5.25	$5.54	$5.84	$6.16	$6.49	$6.85
Xcel Energy Inc.	XEL	$2.30	$2.43	$2.57	$2.72	$2.88	$3.04	$3.22	$3.40	$3.59	$3.79	$4.00	$4.21	$4.44	$4.69	$4.94	$5.21

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 110 of 176

Projected Annual
Dividend Payout Ratio

Company	Ticker	[30] 2018	[31] 2019	[32] 2020	[33] 2021	[34] 2022	[35] 2023	[36] 2024	[37] 2025	[38] 2026	[39] 2027	[40] 2028	[41] 2029	[42] 2030	[43] 2031	[44] 2032
ALLETE, Inc.	ALE	66.00%	65.50%	65.00%	64.500%	64.00%	64.26%	64.52%	64.79%	65.05%	65.31%	65.57%	65.57%	65.57%	65.57%	65.57%
Alliant Energy Corporation	LNT	64.00%	64.00%	64.00%	64.000%	64.00%	64.26%	64.52%	64.79%	65.05%	65.31%	65.57%	65.57%	65.57%	65.57%	65.57%
Ameren Corporation	AEE	56.00%	56.75%	57.50%	58.250%	59.00%	60.10%	61.19%	62.29%	63.38%	64.48%	65.57%	65.57%	65.57%	65.57%	65.57%
American Electric Power Company, Inc.	AEP	66.00%	65.25%	64.50%	63.750%	63.00%	63.43%	63.86%	64.29%	64.71%	65.14%	65.57%	65.57%	65.57%	65.57%	65.57%
Avangrid, Inc.	AGR	80.00%	76.75%	73.50%	70.250%	67.00%	66.76%	66.52%	66.29%	66.05%	65.81%	65.57%	65.57%	65.57%	65.57%	65.57%
Black Hills Corporation	BKH	54.00%	54.75%	55.50%	56.250%	57.00%	58.43%	59.86%	61.29%	62.71%	64.14%	65.57%	65.57%	65.57%	65.57%	65.57%
CMS Energy Corporation	CMS	60.00%	59.75%	59.50%	59.250%	59.00%	60.10%	61.19%	62.29%	63.38%	64.48%	65.57%	65.57%	65.57%	65.57%	65.57%
DTE Energy Company	DTE	58.00%	58.25%	58.50%	58.750%	59.00%	60.10%	61.19%	62.29%	63.38%	64.48%	65.57%	65.57%	65.57%	65.57%	65.57%
El Paso Electric	EE	57.00%	57.75%	58.50%	59.250%	60.00%	60.93%	61.86%	62.79%	63.71%	64.64%	65.57%	65.57%	65.57%	65.57%	65.57%
Hawaiian Electric Industries, Inc.	HE	66.00%	64.25%	62.50%	60.750%	59.00%	60.10%	61.19%	62.29%	63.38%	64.48%	65.57%	65.57%	65.57%	65.57%	65.57%
NextEra Energy, Inc.	NEE	56.00%	57.75%	59.50%	61.250%	63.00%	63.43%	63.86%	64.29%	64.71%	65.14%	65.57%	65.57%	65.57%	65.57%	65.57%
NorthWestern Corporation	NWE	62.00%	62.50%	63.00%	63.500%	64.00%	64.26%	64.52%	64.79%	65.05%	65.31%	65.57%	65.57%	65.57%	65.57%	65.57%
OGE Energy Corp.	OGE	68.00%	68.75%	69.50%	70.250%	71.00%	70.10%	69.19%	68.29%	67.38%	66.48%	65.57%	65.57%	65.57%	65.57%	65.57%
Otter Tail Corporation	OTTR	66.00%	64.50%	63.00%	61.500%	60.00%	60.93%	61.86%	62.79%	63.71%	64.64%	65.57%	65.57%	65.57%	65.57%	65.57%
Pinnacle West Capital Corporation	PNW	63.00%	63.00%	63.00%	63.000%	63.00%	63.43%	63.86%	64.29%	64.71%	65.14%	65.57%	65.57%	65.57%	65.57%	65.57%
PNM Resources, Inc.	PNM	52.00%	51.50%	51.00%	50.500%	50.00%	52.60%	55.19%	57.79%	60.38%	62.98%	65.57%	65.57%	65.57%	65.57%	65.57%
Portland General Electric Company	POR	65.00%	65.00%	65.00%	65.000%	65.00%	65.10%	65.19%	65.29%	65.38%	65.48%	65.57%	65.57%	65.57%	65.57%	65.57%
Southern Company	SO	79.00%	77.75%	76.50%	75.250%	74.00%	72.60%	71.19%	69.79%	68.38%	66.98%	65.57%	65.57%	65.57%	65.57%	65.57%
WEC Energy Group, Inc.	WEC	66.00%	65.75%	65.50%	65.250%	65.00%	65.10%	65.19%	65.29%	65.38%	65.48%	65.57%	65.57%	65.57%	65.57%	65.57%
Xcel Energy Inc.	XEL	62.00%	62.25%	62.50%	62.750%	63.00%	63.43%	63.86%	64.29%	64.71%	65.14%	65.57%	65.57%	65.57%	65.57%	65.57%

Projected Annual
Cash Flows

Company	Ticker	[45] 2018	[46] 2019	[47] 2020	[48] 2021	[49] 2022	[50] 2023	[51] 2024	[52] 2025	[53] 2026	[54] 2027	[55] 2028	[56] 2029	[57] 2030	[58] 2031	[59] 2032	[60] Terminal Value
ALLETE, Inc.	ALE	$2.18	$2.29	$2.40	$2.52	$2.64	$2.80	$2.97	$3.15	$3.33	$3.53	$3.74	$3.94	$4.16	$4.38	$4.62	$156.59
Alliant Energy Corporation	LNT	$1.35	$1.43	$1.51	$1.60	$1.70	$1.80	$1.92	$2.03	$2.16	$2.28	$2.42	$2.55	$2.69	$2.84	$2.99	$87.50
Ameren Corporation	AEE	$1.66	$1.80	$1.95	$2.11	$2.29	$2.49	$2.70	$2.92	$3.14	$3.38	$3.63	$3.82	$4.03	$4.25	$4.48	$131.11
American Electric Power Company, Inc.	AEP	$2.51	$2.62	$2.72	$2.83	$2.94	$3.12	$3.31	$3.51	$3.72	$3.95	$4.19	$4.42	$4.66	$4.91	$5.18	$143.93
Avangrid, Inc.	AGR	$1.48	$1.57	$1.66	$1.75	$1.85	$2.02	$2.19	$2.35	$2.51	$2.66	$2.80	$2.95	$3.11	$3.28	$3.46	$103.98
Black Hills Corporation	BKH	$1.92	$2.04	$2.18	$2.32	$2.47	$2.66	$2.87	$3.10	$3.34	$3.60	$3.88	$4.09	$4.31	$4.55	$4.80	$125.51
CMS Energy Corporation	CMS	$1.39	$1.48	$1.57	$1.67	$1.77	$1.92	$2.08	$2.25	$2.42	$2.60	$2.79	$2.94	$3.11	$3.27	$3.45	$100.83
DTE Energy Company	DTE	$3.53	$3.76	$4.00	$4.27	$4.54	$4.91	$5.29	$5.70	$6.12	$6.58	$7.05	$7.44	$7.84	$8.27	$8.72	$225.73
El Paso Electric	EE	$1.44	$1.53	$1.62	$1.72	$1.82	$1.94	$2.06	$2.20	$2.35	$2.51	$2.68	$2.83	$2.99	$3.15	$3.32	$124.81
Hawaiian Electric Industries, Inc.	HE	$1.14	$1.18	$1.21	$1.24	$1.27	$1.37	$1.47	$1.58	$1.70	$1.82	$1.95	$2.06	$2.17	$2.29	$2.41	$72.30
NextEra Energy, Inc.	NEE	$3.97	$4.46	$5.00	$5.61	$6.29	$6.86	$7.44	$8.03	$8.62	$9.20	$9.77	$10.30	$10.86	$11.45	$12.08	$355.99
NorthWestern Corporation	NWE	$2.13	$2.20	$2.28	$2.36	$2.45	$2.54	$2.64	$2.76	$2.90	$3.05	$3.23	$3.41	$3.60	$3.79	$4.00	$118.34
OGE Energy Corp.	OGE	$1.38	$1.47	$1.57	$1.67	$1.78	$1.86	$1.93	$2.01	$2.09	$2.18	$2.27	$2.39	$2.52	$2.66	$2.80	$72.40
Otter Tail Corporation	OTTR	$1.33	$1.41	$1.49	$1.57	$1.66	$1.82	$1.98	$2.15	$2.32	$2.49	$2.66	$2.81	$2.96	$3.12	$3.29	$100.59
Pinnacle West Capital Corporation	PNW	$2.91	$3.04	$3.18	$3.32	$3.46	$3.65	$3.84	$4.06	$4.30	$4.55	$4.83	$5.10	$5.38	$5.67	$5.98	$162.98
PNM Resources, Inc.	PNM	$1.05	$1.10	$1.15	$1.20	$1.26	$1.39	$1.54	$1.70	$1.88	$2.07	$2.27	$2.39	$2.52	$2.66	$2.81	$83.12
Portland General Electric Company	POR	$1.55	$1.61	$1.68	$1.74	$1.81	$1.89	$1.98	$2.08	$2.18	$2.30	$2.43	$2.56	$2.70	$2.85	$3.01	$90.87
Southern Company	SO	$2.61	$2.65	$2.68	$2.71	$2.75	$2.79	$2.84	$2.90	$2.97	$3.06	$3.16	$3.33	$3.51	$3.70	$3.90	$87.08
WEC Energy Group, Inc.	WEC	$2.18	$2.29	$2.40	$2.51	$2.63	$2.77	$2.92	$3.09	$3.26	$3.44	$3.63	$3.83	$4.04	$4.26	$4.49	$134.29
Xcel Energy Inc.	XEL	$1.51	$1.60	$1.70	$1.80	$1.92	$2.04	$2.17	$2.31	$2.45	$2.60	$2.76	$2.91	$3.07	$3.24	$3.42	$96.25

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 111 of 176

Projected Annual Data
Investor Cash Flows

Company	Ticker	[61] Initial Outflow	[62] 10/12/18	[63] 12/31/18	[64] 6/30/19	[65] 6/30/20	[66] 6/30/21	[67] 6/30/22	[68] 6/30/23	[69] 6/30/24	[70] 6/30/25	[71] 6/30/26	[72] 6/30/27	[73] 6/30/28	[74] 6/30/29	[75] 6/30/30	[76] 6/30/31	[77] 6/30/32
ALLETE, Inc.	ALE	($76.26)	$0.00	$0.48	$2.24	$2.40	$2.52	$2.64	$2.80	$2.97	$3.15	$3.33	$3.53	$3.74	$3.94	$4.16	$4.38	$161.22
Alliant Energy Corporation	LNT	($42.54)	$0.00	$0.30	$1.39	$1.51	$1.60	$1.70	$1.80	$1.92	$2.03	$2.16	$2.28	$2.42	$2.55	$2.69	$2.84	$90.49
Ameren Corporation	AEE	($62.24)	$0.00	$0.36	$1.72	$1.95	$2.11	$2.29	$2.49	$2.70	$2.92	$3.14	$3.38	$3.63	$3.82	$4.03	$4.25	$135.59
American Electric Power Company, Inc.	AEP	($70.30)	$0.00	$0.55	$2.58	$2.72	$2.83	$2.94	$3.12	$3.31	$3.51	$3.72	$3.95	$4.19	$4.42	$4.66	$4.91	$149.11
Avangrid, Inc.	AGR	($50.18)	$0.00	$0.32	$1.55	$1.66	$1.75	$1.85	$2.02	$2.19	$2.35	$2.51	$2.66	$2.80	$2.95	$3.11	$3.28	$107.44
Black Hills Corporation	BKH	($59.75)	$0.00	$0.42	$1.97	$2.18	$2.32	$2.47	$2.66	$2.87	$3.10	$3.34	$3.60	$3.88	$4.09	$4.31	$4.55	$130.31
CMS Energy Corporation	CMS	($48.10)	$0.00	$0.30	$1.44	$1.57	$1.67	$1.77	$1.92	$2.08	$2.25	$2.42	$2.60	$2.79	$2.94	$3.11	$3.27	$104.28
DTE Energy Company	DTE	($107.77)	$0.00	$0.77	$3.63	$4.00	$4.27	$4.54	$4.91	$5.29	$5.70	$6.12	$6.58	$7.05	$7.44	$7.84	$8.27	$234.45
El Paso Electric	EE	($60.19)	$0.00	$0.32	$1.48	$1.62	$1.72	$1.82	$1.94	$2.06	$2.20	$2.35	$2.51	$2.68	$2.83	$2.99	$3.15	$128.13
Hawaiian Electric Industries, Inc.	HE	($34.91)	$0.00	$0.25	$1.18	$1.21	$1.24	$1.27	$1.37	$1.47	$1.58	$1.70	$1.82	$1.95	$2.06	$2.17	$2.29	$74.71
NextEra Energy, Inc.	NEE	($168.69)	$0.00	$0.87	$4.14	$5.00	$5.61	$6.29	$6.86	$7.44	$8.03	$8.62	$9.20	$9.77	$10.30	$10.86	$11.45	$368.07
NorthWestern Corporation	NWE	($58.57)	$0.00	$0.47	$2.16	$2.28	$2.36	$2.45	$2.54	$2.64	$2.76	$2.90	$3.05	$3.23	$3.41	$3.60	$3.79	$122.34
OGE Energy Corp.	OGE	($36.07)	$0.00	$0.30	$1.42	$1.57	$1.67	$1.78	$1.86	$1.93	$2.01	$2.09	$2.18	$2.27	$2.39	$2.52	$2.66	$75.20
Otter Tail Corporation	OTTR	($47.96)	$0.00	$0.29	$1.38	$1.49	$1.57	$1.66	$1.82	$1.98	$2.15	$2.32	$2.49	$2.66	$2.81	$2.96	$3.12	$103.89
Pinnacle West Capital Corporation	PNW	($79.81)	$0.00	$0.64	$2.98	$3.18	$3.32	$3.46	$3.65	$3.84	$4.06	$4.30	$4.55	$4.83	$5.10	$5.38	$5.67	$168.96
PNM Resources, Inc.	PNM	($38.86)	$0.00	$0.23	$1.08	$1.15	$1.20	$1.26	$1.39	$1.54	$1.70	$1.88	$2.07	$2.27	$2.39	$2.52	$2.66	$85.93
Portland General Electric Company	POR	($44.81)	$0.00	$0.34	$1.58	$1.68	$1.74	$1.81	$1.89	$1.98	$2.08	$2.18	$2.30	$2.43	$2.56	$2.70	$2.85	$93.87
Southern Company	SO	($45.57)	$0.00	$0.57	$2.65	$2.68	$2.71	$2.75	$2.79	$2.84	$2.90	$2.97	$3.06	$3.16	$3.33	$3.51	$3.70	$90.98
WEC Energy Group, Inc.	WEC	($65.81)	$0.00	$0.48	$2.24	$2.40	$2.51	$2.63	$2.77	$2.92	$3.09	$3.26	$3.44	$3.63	$3.83	$4.04	$4.26	$138.78
Xcel Energy Inc.	XEL	($46.66)	$0.00	$0.33	$1.55	$1.70	$1.80	$1.92	$2.04	$2.17	$2.31	$2.45	$2.60	$2.76	$2.91	$3.07	$3.24	$99.67

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 112 of 176

Multi-Stage Growth Discounted Cash Flow Model
90 Day Average Stock Price
High EPS Growth Rate Estimate in First Stage

Inputs		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Stock	EPS Growth Rate Estimates				Long-Term	Payout Ratio			Iterative Solution		Terminal	Terminal
Company	Ticker	Price	Zacks	First Call	Value Line	High Growth	Growth	2018	2022	2028	Proof	IRR	P/E Ratio	PEG Ratio
ALLETE, Inc.	ALE	$76.26	6.00%	6.00%	5.00%	6.00%	5.46%	66.00%	64.00%	65.57%	($0.00)	8.64%	21.73	3.98
Alliant Energy Corporation	LNT	$42.54	5.50%	5.75%	6.50%	6.50%	5.46%	64.00%	64.00%	65.57%	($0.00)	9.20%	18.47	3.38
Ameren Corporation	AEE	$62.24	6.50%	6.90%	7.50%	7.50%	5.46%	56.00%	59.00%	65.57%	($0.00)	9.19%	18.53	3.40
American Electric Power Company, Inc.	AEP	$70.30	5.60%	5.59%	4.50%	5.60%	5.46%	66.00%	63.00%	65.57%	($0.00)	9.35%	17.77	3.26
Avangrid, Inc.	AGR	$50.18	9.10%	9.50%	13.00%	13.00%	5.46%	80.00%	67.00%	65.57%	($0.00)	9.54%	16.92	3.10
Black Hills Corporation	BKH	$59.75	4.50%	4.32%	6.50%	6.50%	5.46%	54.00%	57.00%	65.57%	($0.00)	9.86%	15.70	2.88
CMS Energy Corporation	CMS	$48.10	6.20%	6.97%	7.00%	7.00%	5.46%	60.00%	59.00%	65.57%	($0.00)	9.13%	18.81	3.45
DTE Energy Company	DTE	$107.77	5.30%	5.49%	7.50%	7.50%	5.46%	58.00%	59.00%	65.57%	($0.00)	9.91%	15.52	2.84
El Paso Electric	EE	$60.19	4.70%	4.70%	4.50%	4.70%	5.46%	57.00%	60.00%	65.57%	($0.00)	8.28%	24.54	4.50
Hawaiian Electric Industries, Inc.	HE	$34.91	6.70%	6.65%	3.50%	6.70%	5.46%	66.00%	59.00%	65.57%	($0.00)	9.23%	18.31	3.36
NextEra Energy, Inc.	NEE	$168.69	8.40%	9.44%	9.00%	9.44%	5.46%	56.00%	63.00%	65.57%	($0.00)	9.15%	18.73	3.43
NorthWestern Corporation	NWE	$58.57	2.30%	2.45%	3.50%	3.50%	5.46%	62.00%	64.00%	65.57%	($0.00)	9.21%	18.44	3.38
OGE Energy Corp.	OGE	$36.07	5.20%	5.30%	6.00%	6.00%	5.46%	68.00%	71.00%	65.57%	($0.00)	9.67%	16.40	3.00
Otter Tail Corporation	OTTR	$47.96	NA	9.00%	7.50%	9.00%	5.46%	66.00%	60.00%	65.57%	($0.00)	9.08%	19.10	3.50
Pinnacle West Capital Corporation	PNW	$79.81	4.50%	3.72%	5.00%	5.00%	5.46%	63.00%	63.00%	65.57%	($0.00)	9.48%	17.19	3.15
PNM Resources, Inc.	PNM	$38.86	4.60%	4.45%	7.50%	7.50%	5.46%	52.00%	50.00%	65.57%	($0.00)	9.49%	17.14	3.14
Portland General Electric Company	POR	$44.81	3.10%	4.95%	4.00%	4.95%	5.46%	65.00%	65.00%	65.57%	($0.00)	9.17%	18.63	3.41
Southern Company	SO	$45.57	4.50%	1.37%	3.00%	4.50%	5.46%	79.00%	74.00%	65.57%	($0.00)	10.70%	13.20	2.42
WEC Energy Group, Inc.	WEC	$65.81	4.10%	4.54%	7.00%	7.00%	5.46%	66.00%	65.00%	65.57%	($0.00)	9.42%	17.45	3.20
Xcel Energy Inc.	XEL	$46.66	5.80%	5.95%	5.50%	5.95%	5.46%	62.00%	63.00%	65.57%	($0.00)	9.25%	18.23	3.34
											Mean	9.35%	18.04	
											Max	10.70%		
											Min	8.28%		

Projected Annual Earnings per Share		[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]
Company	Ticker	2017	2018	2019	2020	2021	2022	**2023**	2024	2025	2026	2027	**2028**	2029	2030	2031	2032
ALLETE, Inc.	ALE	$3.13	$3.32	$3.52	$3.73	$3.95	$4.19	$4.44	$4.69	$4.96	$5.24	$5.53	$5.84	$6.15	$6.49	$6.84	$7.22
Alliant Energy Corporation	LNT	$1.99	$2.12	$2.26	$2.40	$2.56	$2.73	$2.90	$3.08	$3.26	$3.45	$3.64	$3.84	$4.05	$4.27	$4.51	$4.75
Ameren Corporation	AEE	$2.77	$2.98	$3.20	$3.44	$3.70	$3.98	$4.26	$4.55	$4.85	$5.14	$5.44	$5.74	$6.05	$6.38	$6.73	$7.10
American Electric Power Company, Inc.	AEP	$3.62	$3.82	$4.04	$4.26	$4.50	$4.75	$5.02	$5.30	$5.59	$5.90	$6.22	$6.56	$6.92	$7.30	$7.69	$8.11
Avangrid, Inc.	AGR	$1.67	$1.89	$2.13	$2.41	$2.72	$3.08	$3.44	$3.80	$4.15	$4.48	$4.78	$5.04	$5.32	$5.61	$5.91	$6.24
Black Hills Corporation	BKH	$3.38	$3.60	$3.83	$4.08	$4.35	$4.63	$4.92	$5.23	$5.54	$5.86	$6.19	$6.53	$6.88	$7.26	$7.66	$8.07
CMS Energy Corporation	CMS	$2.17	$2.32	$2.48	$2.66	$2.84	$3.04	$3.25	$3.46	$3.67	$3.89	$4.12	$4.34	$4.58	$4.83	$5.09	$5.37
DTE Energy Company	DTE	$5.73	$6.16	$6.62	$7.12	$7.65	$8.23	$8.82	$9.42	$10.03	$10.64	$11.26	$11.87	$12.52	$13.20	$13.92	$14.68
El Paso Electric	EE	$2.42	$2.53	$2.65	$2.78	$2.91	$3.04	$3.19	$3.35	$3.52	$3.70	$3.90	$4.11	$4.34	$4.57	$4.82	$5.09
Hawaiian Electric Industries, Inc.	HE	$1.64	$1.75	$1.87	$1.99	$2.13	$2.27	$2.42	$2.57	$2.72	$2.88	$3.05	$3.21	$3.39	$3.57	$3.77	$3.97
NextEra Energy, Inc.	NEE	$6.50	$7.11	$7.79	$8.52	$9.32	$10.20	$11.10	$12.00	$12.89	$13.77	$14.61	$15.41	$16.25	$17.14	$18.07	$19.06
NorthWestern Corporation	NWE	$3.34	$3.46	$3.58	$3.70	$3.83	$3.97	$4.12	$4.29	$4.48	$4.70	$4.94	$5.21	$5.49	$5.79	$6.11	$6.44
OGE Energy Corp.	OGE	$1.92	$2.04	$2.16	$2.29	$2.42	$2.57	$2.72	$2.88	$3.04	$3.22	$3.39	$3.58	$3.78	$3.98	$4.20	$4.43
Otter Tail Corporation	OTTR	$1.86	$2.03	$2.21	$2.41	$2.63	$2.86	$3.10	$3.35	$3.59	$3.83	$4.06	$4.28	$4.51	$4.76	$5.02	$5.29
Pinnacle West Capital Corporation	PNW	$4.43	$4.65	$4.88	$5.13	$5.38	$5.65	$5.94	$6.25	$6.57	$6.92	$7.29	$7.69	$8.11	$8.56	$9.02	$9.51
PNM Resources, Inc.	PNM	$1.92	$2.06	$2.22	$2.39	$2.56	$2.76	$2.95	$3.16	$3.36	$3.57	$3.77	$3.98	$4.20	$4.42	$4.67	$4.92
Portland General Electric Company	POR	$2.29	$2.40	$2.52	$2.65	$2.78	$2.92	$3.06	$3.22	$3.39	$3.57	$3.76	$3.96	$4.18	$4.41	$4.65	$4.90
Southern Company	SO	$3.21	$3.35	$3.51	$3.66	$3.83	$4.00	$4.19	$4.39	$4.61	$4.84	$5.10	$5.38	$5.67	$5.98	$6.31	$6.65
WEC Energy Group, Inc.	WEC	$3.14	$3.36	$3.59	$3.85	$4.12	$4.40	$4.70	$5.01	$5.32	$5.64	$5.96	$6.28	$6.63	$6.99	$7.37	$7.77
Xcel Energy Inc.	XEL	$2.30	$2.44	$2.58	$2.74	$2.90	$3.07	$3.25	$3.44	$3.64	$3.84	$4.05	$4.27	$4.51	$4.75	$5.01	$5.29

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 113 of 176

Projected Annual
Dividend Payout Ratio

Company	Ticker	[30] 2018	[31] 2019	[32] 2020	[33] 2021	[34] 2022	[35] 2023	[36] 2024	[37] 2025	[38] 2026	[39] 2027	[40] 2028	[41] 2029	[42] 2030	[43] 2031	[44] 2032
ALLETE, Inc.	ALE	66.00%	65.50%	65.00%	64.500%	64.00%	64.26%	64.52%	64.79%	65.05%	65.31%	65.57%	65.57%	65.57%	65.57%	65.57%
Alliant Energy Corporation	LNT	64.00%	64.00%	64.00%	64.000%	64.00%	64.26%	64.52%	64.79%	65.05%	65.31%	65.57%	65.57%	65.57%	65.57%	65.57%
Ameren Corporation	AEE	56.00%	56.75%	57.50%	58.250%	59.00%	60.10%	61.19%	62.29%	63.38%	64.48%	65.57%	65.57%	65.57%	65.57%	65.57%
American Electric Power Company, Inc.	AEP	66.00%	65.25%	64.50%	63.750%	63.00%	63.43%	63.86%	64.29%	64.71%	65.14%	65.57%	65.57%	65.57%	65.57%	65.57%
Avangrid, Inc.	AGR	80.00%	76.75%	73.50%	70.250%	67.00%	66.76%	66.52%	66.29%	66.05%	65.81%	65.57%	65.57%	65.57%	65.57%	65.57%
Black Hills Corporation	BKH	54.00%	54.75%	55.50%	56.250%	57.00%	58.43%	59.86%	61.29%	62.71%	64.14%	65.57%	65.57%	65.57%	65.57%	65.57%
CMS Energy Corporation	CMS	60.00%	59.75%	59.50%	59.250%	59.00%	60.10%	61.19%	62.29%	63.38%	64.48%	65.57%	65.57%	65.57%	65.57%	65.57%
DTE Energy Company	DTE	58.00%	58.25%	58.50%	58.750%	59.00%	60.10%	61.19%	62.29%	63.38%	64.48%	65.57%	65.57%	65.57%	65.57%	65.57%
El Paso Electric	EE	57.00%	57.75%	58.50%	59.250%	60.00%	60.93%	61.86%	62.79%	63.71%	64.64%	65.57%	65.57%	65.57%	65.57%	65.57%
Hawaiian Electric Industries, Inc.	HE	66.00%	64.25%	62.50%	60.750%	59.00%	60.10%	61.19%	62.29%	63.38%	64.48%	65.57%	65.57%	65.57%	65.57%	65.57%
NextEra Energy, Inc.	NEE	56.00%	57.75%	59.50%	61.250%	63.00%	63.43%	63.86%	64.29%	64.71%	65.14%	65.57%	65.57%	65.57%	65.57%	65.57%
NorthWestern Corporation	NWE	62.00%	62.50%	63.00%	63.500%	64.00%	64.26%	64.52%	64.79%	65.05%	65.31%	65.57%	65.57%	65.57%	65.57%	65.57%
OGE Energy Corp.	OGE	68.00%	68.75%	69.50%	70.250%	71.00%	70.10%	69.19%	68.29%	67.38%	66.48%	65.57%	65.57%	65.57%	65.57%	65.57%
Otter Tail Corporation	OTTR	66.00%	64.50%	63.00%	61.500%	60.00%	60.93%	61.86%	62.79%	63.71%	64.64%	65.57%	65.57%	65.57%	65.57%	65.57%
Pinnacle West Capital Corporation	PNW	63.00%	63.00%	63.00%	63.000%	63.00%	63.43%	63.86%	64.29%	64.71%	65.14%	65.57%	65.57%	65.57%	65.57%	65.57%
PNM Resources, Inc.	PNM	52.00%	51.50%	51.00%	50.500%	50.00%	52.60%	55.19%	57.79%	60.38%	62.98%	65.57%	65.57%	65.57%	65.57%	65.57%
Portland General Electric Company	POR	65.00%	65.00%	65.00%	65.000%	65.00%	65.10%	65.19%	65.29%	65.38%	65.48%	65.57%	65.57%	65.57%	65.57%	65.57%
Southern Company	SO	79.00%	77.75%	76.50%	75.250%	74.00%	72.60%	71.19%	69.79%	68.38%	66.98%	65.57%	65.57%	65.57%	65.57%	65.57%
WEC Energy Group, Inc.	WEC	66.00%	65.75%	65.50%	65.250%	65.00%	65.10%	65.19%	65.29%	65.38%	65.48%	65.57%	65.57%	65.57%	65.57%	65.57%
Xcel Energy Inc.	XEL	62.00%	62.25%	62.50%	62.750%	63.00%	63.43%	63.86%	64.29%	64.71%	65.14%	65.57%	65.57%	65.57%	65.57%	65.57%

Projected Annual
Cash Flows

Company	Ticker	[45] 2018	[46] 2019	[47] 2020	[48] 2021	[49] 2022	[50] 2023	[51] 2024	[52] 2025	[53] 2026	[54] 2027	[55] 2028	[56] 2029	[57] 2030	[58] 2031	[59] 2032	[60] Terminal Value
ALLETE, Inc.	ALE	$2.19	$2.30	$2.42	$2.55	$2.68	$2.85	$3.03	$3.22	$3.41	$3.61	$3.83	$4.04	$4.26	$4.49	$4.73	$156.84
Alliant Energy Corporation	LNT	$1.36	$1.44	$1.54	$1.64	$1.74	$1.86	$1.99	$2.11	$2.24	$2.38	$2.52	$2.66	$2.80	$2.96	$3.12	$87.79
Ameren Corporation	AEE	$1.67	$1.82	$1.98	$2.15	$2.35	$2.56	$2.79	$3.02	$3.26	$3.51	$3.76	$3.97	$4.19	$4.41	$4.65	$131.55
American Electric Power Company, Inc.	AEP	$2.52	$2.63	$2.75	$2.87	$2.99	$3.18	$3.38	$3.59	$3.82	$4.05	$4.30	$4.54	$4.78	$5.05	$5.32	$144.23
Avangrid, Inc.	AGR	$1.51	$1.64	$1.77	$1.91	$2.06	$2.30	$2.53	$2.75	$2.96	$3.15	$3.31	$3.49	$3.68	$3.88	$4.09	$105.49
Black Hills Corporation	BKH	$1.94	$2.10	$2.27	$2.45	$2.64	$2.88	$3.13	$3.39	$3.68	$3.97	$4.28	$4.51	$4.76	$5.02	$5.29	$126.76
CMS Energy Corporation	CMS	$1.39	$1.48	$1.58	$1.69	$1.80	$1.95	$2.12	$2.29	$2.47	$2.65	$2.85	$3.00	$3.17	$3.34	$3.52	$101.00
DTE Energy Company	DTE	$3.57	$3.86	$4.16	$4.50	$4.85	$5.30	$5.76	$6.24	$6.74	$7.26	$7.79	$8.21	$8.66	$9.13	$9.63	$227.96
El Paso Electric	EE	$1.44	$1.53	$1.62	$1.72	$1.83	$1.94	$2.07	$2.21	$2.36	$2.52	$2.70	$2.84	$3.00	$3.16	$3.34	$124.85
Hawaiian Electric Industries, Inc.	HE	$1.15	$1.20	$1.25	$1.29	$1.34	$1.45	$1.57	$1.70	$1.83	$1.96	$2.11	$2.22	$2.34	$2.47	$2.61	$72.76
NextEra Energy, Inc.	NEE	$3.98	$4.50	$5.07	$5.71	$6.43	$7.04	$7.66	$8.29	$8.91	$9.52	$10.10	$10.66	$11.24	$11.85	$12.50	$357.05
NorthWestern Corporation	NWE	$2.14	$2.24	$2.33	$2.43	$2.54	$2.65	$2.77	$2.90	$3.06	$3.23	$3.41	$3.60	$3.80	$4.00	$4.22	$118.80
OGE Energy Corp.	OGE	$1.38	$1.48	$1.59	$1.70	$1.82	$1.91	$1.99	$2.08	$2.17	$2.26	$2.35	$2.48	$2.61	$2.75	$2.90	$72.59
Otter Tail Corporation	OTTR	$1.34	$1.43	$1.52	$1.61	$1.72	$1.89	$2.07	$2.25	$2.44	$2.62	$2.80	$2.96	$3.12	$3.29	$3.47	$101.04
Pinnacle West Capital Corporation	PNW	$2.93	$3.08	$3.23	$3.39	$3.56	$3.77	$3.99	$4.23	$4.48	$4.75	$5.04	$5.32	$5.61	$5.92	$6.24	$163.55
PNM Resources, Inc.	PNM	$1.07	$1.14	$1.22	$1.29	$1.38	$1.55	$1.74	$1.94	$2.15	$2.38	$2.61	$2.75	$2.90	$3.06	$3.23	$84.32
Portland General Electric Company	POR	$1.56	$1.64	$1.72	$1.81	$1.90	$1.99	$2.10	$2.21	$2.33	$2.46	$2.60	$2.74	$2.89	$3.05	$3.21	$91.30
Southern Company	SO	$2.65	$2.73	$2.80	$2.88	$2.96	$3.04	$3.12	$3.21	$3.31	$3.42	$3.53	$3.72	$3.92	$4.14	$4.36	$87.81
WEC Energy Group, Inc.	WEC	$2.22	$2.36	$2.52	$2.69	$2.86	$3.06	$3.26	$3.47	$3.68	$3.90	$4.12	$4.34	$4.58	$4.83	$5.09	$135.62
Xcel Energy Inc.	XEL	$1.51	$1.61	$1.71	$1.82	$1.93	$2.06	$2.20	$2.34	$2.48	$2.64	$2.80	$2.95	$3.12	$3.29	$3.47	$96.36

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 114 of 176

Projected Annual Data
Investor Cash Flows

Company	Ticker	[61] Initial Outflow	[62] 10/12/18	[63] 12/31/18	[64] 6/30/19	[65] 6/30/20	[66] 6/30/21	[67] 6/30/22	[68] 6/30/23	[69] 6/30/24	[70] 6/30/25	[71] 6/30/26	[72] 6/30/27	[73] 6/30/28	[74] 6/30/29	[75] 6/30/30	[76] 6/30/31	[77] 6/30/32
ALLETE, Inc.	ALE	($76.26)	$0.00	$0.48	$2.26	$2.42	$2.55	$2.68	$2.85	$3.03	$3.22	$3.41	$3.61	$3.83	$4.04	$4.26	$4.49	$161.57
Alliant Energy Corporation	LNT	($42.54)	$0.00	$0.30	$1.40	$1.54	$1.64	$1.74	$1.86	$1.99	$2.11	$2.24	$2.38	$2.52	$2.66	$2.80	$2.96	$90.90
Ameren Corporation	AEE	($62.24)	$0.00	$0.37	$1.73	$1.98	$2.15	$2.35	$2.56	$2.79	$3.02	$3.26	$3.51	$3.76	$3.97	$4.19	$4.41	$136.20
American Electric Power Company, Inc.	AEP	($70.30)	$0.00	$0.55	$2.59	$2.75	$2.87	$2.99	$3.18	$3.38	$3.59	$3.82	$4.05	$4.30	$4.54	$4.78	$5.05	$149.55
Avangrid, Inc.	AGR	($50.18)	$0.00	$0.33	$1.61	$1.77	$1.91	$2.06	$2.30	$2.53	$2.75	$2.96	$3.15	$3.31	$3.49	$3.68	$3.88	$109.58
Black Hills Corporation	BKH	($59.75)	$0.00	$0.43	$2.01	$2.27	$2.45	$2.64	$2.88	$3.13	$3.39	$3.68	$3.97	$4.28	$4.51	$4.76	$5.02	$132.05
CMS Energy Corporation	CMS	($48.10)	$0.00	$0.31	$1.44	$1.58	$1.69	$1.80	$1.95	$2.12	$2.29	$2.47	$2.65	$2.85	$3.00	$3.17	$3.34	$104.52
DTE Energy Company	DTE	($107.77)	$0.00	$0.78	$3.71	$4.16	$4.50	$4.85	$5.30	$5.76	$6.24	$6.74	$7.26	$7.79	$8.21	$8.66	$9.13	$237.59
El Paso Electric	EE	($60.19)	$0.00	$0.32	$1.48	$1.62	$1.72	$1.83	$1.94	$2.07	$2.21	$2.36	$2.52	$2.70	$2.84	$3.00	$3.16	$128.18
Hawaiian Electric Industries, Inc.	HE	($34.91)	$0.00	$0.25	$1.19	$1.25	$1.29	$1.34	$1.45	$1.57	$1.70	$1.83	$1.96	$2.11	$2.22	$2.34	$2.47	$75.37
NextEra Energy, Inc.	NEE	($168.69)	$0.00	$0.87	$4.17	$5.07	$5.71	$6.43	$7.04	$7.66	$8.29	$8.91	$9.52	$10.10	$10.66	$11.24	$11.85	$369.55
NorthWestern Corporation	NWE	($58.57)	$0.00	$0.47	$2.18	$2.33	$2.43	$2.54	$2.65	$2.77	$2.90	$3.06	$3.23	$3.41	$3.60	$3.80	$4.00	$123.02
OGE Energy Corp.	OGE	($36.07)	$0.00	$0.30	$1.43	$1.59	$1.70	$1.82	$1.91	$1.99	$2.08	$2.17	$2.26	$2.35	$2.48	$2.61	$2.75	$75.50
Otter Tail Corporation	OTTR	($47.96)	$0.00	$0.29	$1.40	$1.52	$1.61	$1.72	$1.89	$2.07	$2.25	$2.44	$2.62	$2.80	$2.96	$3.12	$3.29	$104.51
Pinnacle West Capital Corporation	PNW	($79.81)	$0.00	$0.64	$3.00	$3.23	$3.39	$3.56	$3.77	$3.99	$4.23	$4.48	$4.75	$5.04	$5.32	$5.61	$5.92	$169.79
PNM Resources, Inc.	PNM	($38.86)	$0.00	$0.24	$1.11	$1.22	$1.29	$1.38	$1.55	$1.74	$1.94	$2.15	$2.38	$2.61	$2.75	$2.90	$3.06	$87.54
Portland General Electric Company	POR	($44.81)	$0.00	$0.34	$1.60	$1.72	$1.81	$1.90	$1.99	$2.10	$2.21	$2.33	$2.46	$2.60	$2.74	$2.89	$3.05	$94.52
Southern Company	SO	($45.57)	$0.00	$0.58	$2.71	$2.80	$2.88	$2.96	$3.04	$3.12	$3.21	$3.31	$3.42	$3.53	$3.72	$3.92	$4.14	$92.17
WEC Energy Group, Inc.	WEC	($65.81)	$0.00	$0.49	$2.30	$2.52	$2.69	$2.86	$3.06	$3.26	$3.47	$3.68	$3.90	$4.12	$4.34	$4.58	$4.83	$140.71
Xcel Energy Inc.	XEL	($46.66)	$0.00	$0.33	$1.56	$1.71	$1.82	$1.93	$2.06	$2.20	$2.34	$2.48	$2.64	$2.80	$2.95	$3.12	$3.29	$99.83

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 115 of 176

Multi-Stage Growth Discounted Cash Flow Model
90 Day Average Stock Price
Low EPS Growth Rate Estimate in First Stage

Inputs		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Stock	EPS Growth Rate Estimates				Long-Term	Payout Ratio			Iterative Solution		Terminal	Terminal
Company	Ticker	Price	Zacks	First Call	Value Line	Low Growth	Growth	2018	2022	2028	Proof	IRR	P/E Ratio	PEG Ratio
ALLETE, Inc.	ALE	$76.26	6.00%	6.00%	5.00%	5.00%	5.46%	66.00%	64.00%	65.57%	($0.00)	8.43%	23.22	4.26
Alliant Energy Corporation	LNT	$42.54	5.50%	5.75%	6.50%	5.50%	5.46%	64.00%	64.00%	65.57%	($0.00)	8.97%	19.71	3.61
Ameren Corporation	AEE	$62.24	6.50%	6.90%	7.50%	6.50%	5.46%	56.00%	59.00%	65.57%	($0.00)	8.96%	19.76	3.62
American Electric Power Company, Inc.	AEP	$70.30	5.60%	5.59%	4.50%	4.50%	5.46%	66.00%	63.00%	65.57%	($0.00)	9.08%	19.11	3.50
Avangrid, Inc.	AGR	$50.18	9.10%	9.50%	13.00%	9.10%	5.46%	80.00%	67.00%	65.57%	($0.00)	8.66%	21.58	3.95
Black Hills Corporation	BKH	$59.75	4.50%	4.32%	6.50%	4.32%	5.46%	54.00%	57.00%	65.57%	($0.00)	9.29%	18.06	3.31
CMS Energy Corporation	CMS	$48.10	6.20%	6.97%	7.00%	6.20%	5.46%	60.00%	59.00%	65.57%	($0.00)	8.95%	19.80	3.63
DTE Energy Company	DTE	$107.77	5.30%	5.49%	7.50%	5.30%	5.46%	58.00%	59.00%	65.57%	($0.00)	9.33%	17.86	3.27
El Paso Electric	EE	$60.19	4.70%	4.70%	4.50%	4.50%	5.46%	57.00%	60.00%	65.57%	($0.00)	8.24%	24.87	4.56
Hawaiian Electric Industries, Inc.	HE	$34.91	6.70%	6.65%	3.50%	3.50%	5.46%	66.00%	59.00%	65.57%	($0.00)	8.52%	22.61	4.14
NextEra Energy, Inc.	NEE	$168.69	8.40%	9.44%	9.00%	8.40%	5.46%	56.00%	63.00%	65.57%	($0.00)	8.91%	20.01	3.67
NorthWestern Corporation	NWE	$58.57	2.30%	2.45%	3.50%	2.30%	5.46%	62.00%	64.00%	65.57%	($0.00)	8.91%	20.00	3.67
OGE Energy Corp.	OGE	$36.07	5.20%	5.30%	6.00%	5.20%	5.46%	68.00%	71.00%	65.57%	($0.00)	9.46%	17.28	3.17
Otter Tail Corporation	OTTR	$47.96	NA	9.00%	7.50%	7.50%	5.46%	66.00%	60.00%	65.57%	($0.00)	8.75%	21.01	3.85
Pinnacle West Capital Corporation	PNW	$79.81	4.50%	3.72%	5.00%	3.72%	5.46%	63.00%	63.00%	65.57%	($0.00)	9.15%	18.71	3.43
PNM Resources, Inc.	PNM	$38.86	4.60%	4.45%	7.50%	4.45%	5.46%	52.00%	50.00%	65.57%	($0.00)	8.78%	20.82	3.82
Portland General Electric Company	POR	$44.81	3.10%	4.95%	4.00%	3.10%	5.46%	65.00%	65.00%	65.57%	($0.00)	8.74%	21.09	3.86
Southern Company	SO	$45.57	4.50%	1.37%	3.00%	1.37%	5.46%	79.00%	74.00%	65.57%	($0.00)	9.70%	16.31	2.99
WEC Energy Group, Inc.	WEC	$65.81	4.10%	4.54%	7.00%	4.10%	5.46%	66.00%	65.00%	65.57%	($0.00)	8.73%	21.12	3.87
Xcel Energy Inc.	XEL	$46.66	5.80%	5.95%	5.50%	5.50%	5.46%	62.00%	63.00%	65.57%	($0.00)	9.14%	18.78	3.44
											Mean	8.93%	20.09	
											Max	9.70%		
											Min	8.24%		

Projected Annual Earnings per Share		[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]
Company	Ticker	2017	2018	2019	2020	2021	2022	**2023**	2024	2025	2026	2027	**2028**	2029	2030	2031	2032
ALLETE, Inc.	ALE	$3.13	$3.29	$3.45	$3.62	$3.80	$3.99	$4.20	$4.41	$4.64	$4.89	$5.15	$5.44	$5.73	$6.04	$6.37	$6.72
Alliant Energy Corporation	LNT	$1.99	$2.10	$2.21	$2.34	$2.47	$2.60	$2.74	$2.89	$3.05	$3.22	$3.40	$3.58	$3.78	$3.98	$4.20	$4.43
Ameren Corporation	AEE	$2.77	$2.95	$3.14	$3.35	$3.56	$3.80	$4.04	$4.28	$4.54	$4.80	$5.07	$5.35	$5.64	$5.95	$6.28	$6.62
American Electric Power Company, Inc.	AEP	$3.62	$3.78	$3.95	$4.13	$4.32	$4.51	$4.72	$4.95	$5.20	$5.46	$5.75	$6.07	$6.40	$6.75	$7.11	$7.50
Avangrid, Inc.	AGR	$1.67	$1.82	$1.99	$2.17	$2.37	$2.58	$2.80	$3.02	$3.24	$3.46	$3.67	$3.87	$4.08	$4.30	$4.54	$4.78
Black Hills Corporation	BKH	$3.38	$3.53	$3.68	$3.84	$4.00	$4.18	$4.36	$4.57	$4.79	$5.04	$5.30	$5.59	$5.90	$6.22	$6.56	$6.91
CMS Energy Corporation	CMS	$2.17	$2.30	$2.45	$2.60	$2.76	$2.93	$3.11	$3.29	$3.49	$3.69	$3.89	$4.10	$4.33	$4.56	$4.81	$5.08
DTE Energy Company	DTE	$5.73	$6.03	$6.35	$6.69	$7.04	$7.42	$7.81	$8.23	$8.67	$9.14	$9.64	$10.17	$10.72	$11.31	$11.92	$12.57
El Paso Electric	EE	$2.42	$2.53	$2.64	$2.76	$2.89	$3.02	$3.16	$3.31	$3.47	$3.65	$3.85	$4.05	$4.28	$4.51	$4.76	$5.02
Hawaiian Electric Industries, Inc.	HE	$1.64	$1.70	$1.76	$1.82	$1.88	$1.95	$2.02	$2.11	$2.20	$2.31	$2.42	$2.56	$2.70	$2.84	$3.00	$3.16
NextEra Energy, Inc.	NEE	$6.50	$7.05	$7.64	$8.28	$8.97	$9.73	$10.50	$11.28	$12.06	$12.83	$13.60	$14.34	$15.12	$15.95	$16.82	$17.74
NorthWestern Corporation	NWE	$3.34	$3.42	$3.50	$3.58	$3.66	$3.74	$3.85	$3.98	$4.13	$4.31	$4.53	$4.77	$5.03	$5.31	$5.60	$5.90
OGE Energy Corp.	OGE	$1.92	$2.02	$2.12	$2.24	$2.35	$2.47	$2.60	$2.74	$2.89	$3.04	$3.21	$3.38	$3.57	$3.76	$3.97	$4.18
Otter Tail Corporation	OTTR	$1.86	$2.00	$2.15	$2.31	$2.48	$2.67	$2.86	$3.06	$3.25	$3.45	$3.65	$3.85	$4.06	$4.29	$4.52	$4.77
Pinnacle West Capital Corporation	PNW	$4.43	$4.59	$4.77	$4.94	$5.13	$5.32	$5.53	$5.77	$6.03	$6.33	$6.65	$7.02	$7.40	$7.80	$8.23	$8.68
PNM Resources, Inc.	PNM	$1.92	$2.01	$2.09	$2.19	$2.29	$2.39	$2.50	$2.62	$2.75	$2.89	$3.04	$3.21	$3.38	$3.56	$3.76	$3.96
Portland General Electric Company	POR	$2.29	$2.36	$2.43	$2.51	$2.59	$2.67	$2.76	$2.87	$2.99	$3.13	$3.29	$3.47	$3.66	$3.86	$4.07	$4.29
Southern Company	SO	$3.21	$3.25	$3.30	$3.34	$3.39	$3.44	$3.51	$3.60	$3.73	$3.88	$4.06	$4.28	$4.52	$4.77	$5.03	$5.30
WEC Energy Group, Inc.	WEC	$3.14	$3.27	$3.40	$3.54	$3.69	$3.84	$4.00	$4.19	$4.39	$4.61	$4.85	$5.11	$5.39	$5.69	$6.00	$6.32
Xcel Energy Inc.	XEL	$2.30	$2.43	$2.56	$2.70	$2.85	$3.01	$3.17	$3.35	$3.53	$3.72	$3.92	$4.14	$4.36	$4.60	$4.85	$5.12

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 116 of 176

Projected Annual
Dividend Payout Ratio

Company	Ticker	[30] 2018	[31] 2019	[32] 2020	[33] 2021	[34] 2022	[35] 2023	[36] 2024	[37] 2025	[38] 2026	[39] 2027	[40] 2028	[41] 2029	[42] 2030	[43] 2031	[44] 2032
ALLETE, Inc.	ALE	66.00%	65.50%	65.00%	64.500%	64.00%	64.26%	64.52%	64.79%	65.05%	65.31%	65.57%	65.57%	65.57%	65.57%	65.57%
Alliant Energy Corporation	LNT	64.00%	64.00%	64.00%	64.000%	64.00%	64.26%	64.52%	64.79%	65.05%	65.31%	65.57%	65.57%	65.57%	65.57%	65.57%
Ameren Corporation	AEE	56.00%	56.75%	57.50%	58.250%	59.00%	60.10%	61.19%	62.29%	63.38%	64.48%	65.57%	65.57%	65.57%	65.57%	65.57%
American Electric Power Company, Inc.	AEP	66.00%	65.25%	64.50%	63.750%	63.00%	63.43%	63.86%	64.29%	64.71%	65.14%	65.57%	65.57%	65.57%	65.57%	65.57%
Avangrid, Inc.	AGR	80.00%	76.75%	73.50%	70.250%	67.00%	66.76%	66.52%	66.29%	66.05%	65.81%	65.57%	65.57%	65.57%	65.57%	65.57%
Black Hills Corporation	BKH	54.00%	54.75%	55.50%	56.250%	57.00%	58.43%	59.86%	61.29%	62.71%	64.14%	65.57%	65.57%	65.57%	65.57%	65.57%
CMS Energy Corporation	CMS	60.00%	59.75%	59.50%	59.250%	59.00%	60.10%	61.19%	62.29%	63.38%	64.48%	65.57%	65.57%	65.57%	65.57%	65.57%
DTE Energy Company	DTE	58.00%	58.25%	58.50%	58.750%	59.00%	60.10%	61.19%	62.29%	63.38%	64.48%	65.57%	65.57%	65.57%	65.57%	65.57%
El Paso Electric	EE	57.00%	57.75%	58.50%	59.250%	60.00%	60.93%	61.86%	62.79%	63.71%	64.64%	65.57%	65.57%	65.57%	65.57%	65.57%
Hawaiian Electric Industries, Inc.	HE	66.00%	64.25%	62.50%	60.750%	59.00%	60.10%	61.19%	62.29%	63.38%	64.48%	65.57%	65.57%	65.57%	65.57%	65.57%
NextEra Energy, Inc.	NEE	56.00%	57.75%	59.50%	61.250%	63.00%	63.43%	63.86%	64.29%	64.71%	65.14%	65.57%	65.57%	65.57%	65.57%	65.57%
NorthWestern Corporation	NWE	62.00%	62.50%	63.00%	63.500%	64.00%	64.26%	64.52%	64.79%	65.05%	65.31%	65.57%	65.57%	65.57%	65.57%	65.57%
OGE Energy Corp.	OGE	68.00%	68.75%	69.50%	70.250%	71.00%	70.10%	69.19%	68.29%	67.38%	66.48%	65.57%	65.57%	65.57%	65.57%	65.57%
Otter Tail Corporation	OTTR	66.00%	64.50%	63.00%	61.500%	60.00%	60.93%	61.86%	62.79%	63.71%	64.64%	65.57%	65.57%	65.57%	65.57%	65.57%
Pinnacle West Capital Corporation	PNW	63.00%	63.00%	63.00%	63.000%	63.00%	63.43%	63.86%	64.29%	64.71%	65.14%	65.57%	65.57%	65.57%	65.57%	65.57%
PNM Resources, Inc.	PNM	52.00%	51.50%	51.00%	50.500%	50.00%	52.60%	55.19%	57.79%	60.38%	62.98%	65.57%	65.57%	65.57%	65.57%	65.57%
Portland General Electric Company	POR	65.00%	65.00%	65.00%	65.000%	65.00%	65.10%	65.19%	65.29%	65.38%	65.48%	65.57%	65.57%	65.57%	65.57%	65.57%
Southern Company	SO	79.00%	77.75%	76.50%	75.250%	74.00%	72.60%	71.19%	69.79%	68.38%	66.98%	65.57%	65.57%	65.57%	65.57%	65.57%
WEC Energy Group, Inc.	WEC	66.00%	65.75%	65.50%	65.250%	65.00%	65.10%	65.19%	65.29%	65.38%	65.48%	65.57%	65.57%	65.57%	65.57%	65.57%
Xcel Energy Inc.	XEL	62.00%	62.25%	62.50%	62.750%	63.00%	63.43%	63.86%	64.29%	64.71%	65.14%	65.57%	65.57%	65.57%	65.57%	65.57%

Projected Annual
Cash Flows

Company	Ticker	[45] 2018	[46] 2019	[47] 2020	[48] 2021	[49] 2022	[50] 2023	[51] 2024	[52] 2025	[53] 2026	[54] 2027	[55] 2028	[56] 2029	[57] 2030	[58] 2031	[59] 2032	[60] Terminal Value
ALLETE, Inc.	ALE	$2.17	$2.26	$2.36	$2.45	$2.56	$2.70	$2.85	$3.01	$3.18	$3.37	$3.56	$3.76	$3.96	$4.18	$4.41	$156.12
Alliant Energy Corporation	LNT	$1.34	$1.42	$1.50	$1.58	$1.66	$1.76	$1.87	$1.98	$2.09	$2.22	$2.35	$2.48	$2.61	$2.75	$2.90	$87.31
Ameren Corporation	AEE	$1.65	$1.78	$1.92	$2.08	$2.24	$2.42	$2.62	$2.83	$3.04	$3.27	$3.51	$3.70	$3.90	$4.11	$4.34	$130.74
American Electric Power Company, Inc.	AEP	$2.50	$2.58	$2.66	$2.75	$2.84	$2.99	$3.16	$3.34	$3.53	$3.75	$3.98	$4.19	$4.42	$4.66	$4.92	$143.35
Avangrid, Inc.	AGR	$1.46	$1.53	$1.59	$1.66	$1.73	$1.87	$2.01	$2.15	$2.28	$2.41	$2.54	$2.67	$2.82	$2.97	$3.14	$103.23
Black Hills Corporation	BKH	$1.90	$2.01	$2.13	$2.25	$2.38	$2.55	$2.74	$2.94	$3.16	$3.40	$3.67	$3.87	$4.08	$4.30	$4.53	$124.87
CMS Energy Corporation	CMS	$1.38	$1.46	$1.55	$1.64	$1.73	$1.87	$2.02	$2.17	$2.34	$2.51	$2.69	$2.84	$2.99	$3.16	$3.33	$100.52
DTE Energy Company	DTE	$3.50	$3.70	$3.91	$4.14	$4.38	$4.70	$5.04	$5.40	$5.79	$6.22	$6.67	$7.03	$7.41	$7.82	$8.24	$224.57
El Paso Electric	EE	$1.44	$1.53	$1.62	$1.71	$1.81	$1.92	$2.05	$2.18	$2.33	$2.49	$2.66	$2.80	$2.96	$3.12	$3.29	$124.73
Hawaiian Electric Industries, Inc.	HE	$1.12	$1.13	$1.14	$1.14	$1.15	$1.22	$1.29	$1.37	$1.46	$1.56	$1.68	$1.77	$1.86	$1.97	$2.07	$71.50
NextEra Energy, Inc.	NEE	$3.95	$4.41	$4.93	$5.50	$6.13	$6.66	$7.20	$7.75	$8.31	$8.86	$9.40	$9.92	$10.46	$11.03	$11.63	$354.87
NorthWestern Corporation	NWE	$2.12	$2.18	$2.25	$2.32	$2.39	$2.47	$2.57	$2.68	$2.81	$2.96	$3.13	$3.30	$3.48	$3.67	$3.87	$118.08
OGE Energy Corp.	OGE	$1.37	$1.46	$1.55	$1.65	$1.76	$1.82	$1.90	$1.97	$2.05	$2.13	$2.22	$2.34	$2.47	$2.60	$2.74	$72.28
Otter Tail Corporation	OTTR	$1.32	$1.39	$1.46	$1.53	$1.60	$1.74	$1.89	$2.04	$2.20	$2.36	$2.53	$2.67	$2.81	$2.96	$3.13	$100.17
Pinnacle West Capital Corporation	PNW	$2.89	$3.00	$3.11	$3.23	$3.35	$3.51	$3.68	$3.88	$4.09	$4.33	$4.60	$4.85	$5.12	$5.40	$5.69	$162.37
PNM Resources, Inc.	PNM	$1.04	$1.08	$1.12	$1.15	$1.19	$1.31	$1.44	$1.59	$1.74	$1.91	$2.10	$2.22	$2.34	$2.47	$2.60	$82.55
Portland General Electric Company	POR	$1.53	$1.58	$1.63	$1.68	$1.73	$1.80	$1.87	$1.95	$2.05	$2.15	$2.27	$2.40	$2.53	$2.67	$2.81	$90.48
Southern Company	SO	$2.57	$2.56	$2.56	$2.55	$2.54	$2.55	$2.56	$2.60	$2.65	$2.72	$2.81	$2.96	$3.12	$3.30	$3.47	$86.46
WEC Energy Group, Inc.	WEC	$2.16	$2.24	$2.32	$2.41	$2.50	$2.61	$2.73	$2.86	$3.01	$3.17	$3.35	$3.54	$3.73	$3.93	$4.15	$133.56
Xcel Energy Inc.	XEL	$1.50	$1.59	$1.69	$1.79	$1.89	$2.01	$2.14	$2.27	$2.41	$2.56	$2.71	$2.86	$3.02	$3.18	$3.36	$96.11

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 117 of 176

Projected Annual Data
Investor Cash Flows

Company	Ticker	[61] Initial Outflow	[62] 10/12/18	[63] 12/31/18	[64] 6/30/19	[65] 6/30/20	[66] 6/30/21	[67] 6/30/22	[68] 6/30/23	[69] 6/30/24	[70] 6/30/25	[71] 6/30/26	[72] 6/30/27	[73] 6/30/28	[74] 6/30/29	[75] 6/30/30	[76] 6/30/31	[77] 6/30/32
ALLETE, Inc.	ALE	($76.26)	$0.00	$0.48	$2.22	$2.36	$2.45	$2.56	$2.70	$2.85	$3.01	$3.18	$3.37	$3.56	$3.76	$3.96	$4.18	$160.53
Alliant Energy Corporation	LNT	($42.54)	$0.00	$0.29	$1.38	$1.50	$1.58	$1.66	$1.76	$1.87	$1.98	$2.09	$2.22	$2.35	$2.48	$2.61	$2.75	$90.21
Ameren Corporation	AEE	($62.24)	$0.00	$0.36	$1.71	$1.92	$2.08	$2.24	$2.42	$2.62	$2.83	$3.04	$3.27	$3.51	$3.70	$3.90	$4.11	$135.08
American Electric Power Company, Inc.	AEP	($70.30)	$0.00	$0.55	$2.55	$2.66	$2.75	$2.84	$2.99	$3.16	$3.34	$3.53	$3.75	$3.98	$4.19	$4.42	$4.66	$148.27
Avangrid, Inc.	AGR	($50.18)	$0.00	$0.32	$1.52	$1.59	$1.66	$1.73	$1.87	$2.01	$2.15	$2.28	$2.41	$2.54	$2.67	$2.82	$2.97	$106.36
Black Hills Corporation	BKH	($59.75)	$0.00	$0.42	$1.95	$2.13	$2.25	$2.38	$2.55	$2.74	$2.94	$3.16	$3.40	$3.67	$3.87	$4.08	$4.30	$129.40
CMS Energy Corporation	CMS	($48.10)	$0.00	$0.30	$1.43	$1.55	$1.64	$1.73	$1.87	$2.02	$2.17	$2.34	$2.51	$2.69	$2.84	$2.99	$3.16	$103.84
DTE Energy Company	DTE	($107.77)	$0.00	$0.77	$3.59	$3.91	$4.14	$4.38	$4.70	$5.04	$5.40	$5.79	$6.22	$6.67	$7.03	$7.41	$7.82	$232.81
El Paso Electric	EE	($60.19)	$0.00	$0.32	$1.47	$1.62	$1.71	$1.81	$1.92	$2.05	$2.18	$2.33	$2.49	$2.66	$2.80	$2.96	$3.12	$128.02
Hawaiian Electric Industries, Inc.	HE	($34.91)	$0.00	$0.25	$1.14	$1.14	$1.14	$1.15	$1.22	$1.29	$1.37	$1.46	$1.56	$1.68	$1.77	$1.86	$1.97	$73.58
NextEra Energy, Inc.	NEE	($168.69)	$0.00	$0.86	$4.11	$4.93	$5.50	$6.13	$6.66	$7.20	$7.75	$8.31	$8.86	$9.40	$9.92	$10.46	$11.03	$366.50
NorthWestern Corporation	NWE	($58.57)	$0.00	$0.46	$2.14	$2.25	$2.32	$2.39	$2.47	$2.57	$2.68	$2.81	$2.96	$3.13	$3.30	$3.48	$3.67	$121.95
OGE Energy Corp.	OGE	($36.07)	$0.00	$0.30	$1.41	$1.55	$1.65	$1.76	$1.82	$1.90	$1.97	$2.05	$2.13	$2.22	$2.34	$2.47	$2.60	$75.03
Otter Tail Corporation	OTTR	($47.96)	$0.00	$0.29	$1.37	$1.46	$1.53	$1.60	$1.74	$1.89	$2.04	$2.20	$2.36	$2.53	$2.67	$2.81	$2.96	$103.30
Pinnacle West Capital Corporation	PNW	($79.81)	$0.00	$0.63	$2.95	$3.11	$3.23	$3.35	$3.51	$3.68	$3.88	$4.09	$4.33	$4.60	$4.85	$5.12	$5.40	$168.06
PNM Resources, Inc.	PNM	($38.86)	$0.00	$0.23	$1.07	$1.12	$1.15	$1.19	$1.31	$1.44	$1.59	$1.74	$1.91	$2.10	$2.22	$2.34	$2.47	$85.15
Portland General Electric Company	POR	($44.81)	$0.00	$0.34	$1.56	$1.63	$1.68	$1.73	$1.80	$1.87	$1.95	$2.05	$2.15	$2.27	$2.40	$2.53	$2.67	$93.29
Southern Company	SO	($45.57)	$0.00	$0.56	$2.59	$2.56	$2.55	$2.54	$2.55	$2.56	$2.60	$2.65	$2.72	$2.81	$2.96	$3.12	$3.30	$89.93
WEC Energy Group, Inc.	WEC	($65.81)	$0.00	$0.47	$2.20	$2.32	$2.41	$2.50	$2.61	$2.73	$2.86	$3.01	$3.17	$3.35	$3.54	$3.73	$3.93	$137.71
Xcel Energy Inc.	XEL	($46.66)	$0.00	$0.33	$1.55	$1.69	$1.79	$1.89	$2.01	$2.14	$2.27	$2.41	$2.56	$2.71	$2.86	$3.02	$3.18	$99.47

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 118 of 176

Multi-Stage Growth Discounted Cash Flow Model
180 Day Average Stock Price
Average EPS Growth Rate Estimate in First Stage

Inputs		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Stock	EPS Growth Rate Estimates				Long-Term	Payout Ratio			Iterative Solution		Terminal	Terminal
Company	Ticker	Price	Zacks	First Call	Value Line	Average	Growth	2018	2022	2028	Proof	IRR	P/E Ratio	PEG Ratio
ALLETE, Inc.	ALE	$74.31	6.00%	6.00%	5.00%	5.67%	5.46%	66.00%	64.00%	65.57%	($0.00)	8.65%	21.64	3.96
Alliant Energy Corporation	LNT	$41.40	5.50%	5.75%	6.50%	5.92%	5.46%	64.00%	64.00%	65.57%	($0.00)	9.16%	18.66	3.42
Ameren Corporation	AEE	$59.17	6.50%	6.90%	7.50%	6.97%	5.46%	56.00%	59.00%	65.57%	($0.00)	9.25%	18.24	3.34
American Electric Power Company, Inc.	AEP	$68.70	5.60%	5.59%	4.50%	5.23%	5.46%	66.00%	63.00%	65.57%	($0.00)	9.34%	17.79	3.26
Avangrid, Inc.	AGR	$50.30	9.10%	9.50%	13.00%	10.53%	5.46%	80.00%	67.00%	65.57%	($0.00)	8.96%	19.75	3.62
Black Hills Corporation	BKH	$57.07	4.50%	4.32%	6.50%	5.11%	5.46%	54.00%	57.00%	65.57%	($0.00)	9.67%	16.40	3.00
CMS Energy Corporation	CMS	$46.23	6.20%	6.97%	7.00%	6.72%	5.46%	60.00%	59.00%	65.57%	($0.00)	9.21%	18.41	3.37
DTE Energy Company	DTE	$105.09	5.30%	5.49%	7.50%	6.10%	5.46%	58.00%	59.00%	65.57%	($0.00)	9.64%	16.55	3.03
El Paso Electric	EE	$55.93	4.70%	4.70%	4.50%	4.63%	5.46%	57.00%	60.00%	65.57%	($0.00)	8.48%	22.91	4.20
Hawaiian Electric Industries, Inc.	HE	$34.36	6.70%	6.65%	3.50%	5.62%	5.46%	66.00%	59.00%	65.57%	($0.00)	9.03%	19.33	3.54
NextEra Energy, Inc.	NEE	$163.58	8.40%	9.44%	9.00%	8.95%	5.46%	56.00%	63.00%	65.57%	($0.00)	9.15%	18.75	3.44
NorthWestern Corporation	NWE	$55.76	2.30%	2.45%	3.50%	2.75%	5.46%	62.00%	64.00%	65.57%	($0.00)	9.21%	18.45	3.38
OGE Energy Corp.	OGE	$34.24	5.20%	5.30%	6.00%	5.50%	5.46%	68.00%	71.00%	65.57%	($0.00)	9.76%	16.06	2.94
Otter Tail Corporation	OTTR	$45.52	NA	9.00%	7.50%	8.25%	5.46%	66.00%	60.00%	65.57%	($0.00)	9.09%	19.02	3.48
Pinnacle West Capital Corporation	PNW	$78.93	4.50%	3.72%	5.00%	4.41%	5.46%	63.00%	63.00%	65.57%	($0.00)	9.37%	17.67	3.24
PNM Resources, Inc.	PNM	$38.14	4.60%	4.45%	7.50%	5.52%	5.46%	52.00%	50.00%	65.57%	($0.00)	9.08%	19.08	3.50
Portland General Electric Company	POR	$42.71	3.10%	4.95%	4.00%	4.02%	5.46%	65.00%	65.00%	65.57%	($0.00)	9.12%	18.88	3.46
Southern Company	SO	$44.96	4.50%	1.37%	3.00%	2.96%	5.46%	79.00%	74.00%	65.57%	($0.00)	10.25%	14.42	2.64
WEC Energy Group, Inc.	WEC	$63.81	4.10%	4.54%	7.00%	5.21%	5.46%	66.00%	65.00%	65.57%	($0.00)	9.10%	19.01	3.48
Xcel Energy Inc.	XEL	$45.61	5.80%	5.95%	5.50%	5.75%	5.46%	62.00%	63.00%	65.57%	($0.00)	9.29%	18.05	3.31
											Mean	9.24%	18.45	
											Max	10.25%		
											Min	8.48%		

Projected Annual Earnings per Share		[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]
Company	Ticker	2017	2018	2019	2020	2021	2022	**2023**	2024	2025	2026	2027	**2028**	2029	2030	2031	2032
ALLETE, Inc.	ALE	$3.13	$3.31	$3.49	$3.69	$3.90	$4.12	$4.36	$4.60	$4.85	$5.12	$5.40	$5.70	$6.01	$6.34	$6.68	$7.05
Alliant Energy Corporation	LNT	$1.99	$2.11	$2.23	$2.36	$2.50	$2.65	$2.81	$2.97	$3.14	$3.31	$3.50	$3.69	$3.89	$4.10	$4.33	$4.56
Ameren Corporation	AEE	$2.77	$2.96	$3.17	$3.39	$3.63	$3.88	$4.14	$4.41	$4.68	$4.96	$5.24	$5.53	$5.83	$6.15	$6.48	$6.84
American Electric Power Company, Inc.	AEP	$3.62	$3.81	$4.01	$4.22	$4.44	$4.67	$4.92	$5.18	$5.45	$5.75	$6.06	$6.39	$6.74	$7.11	$7.49	$7.90
Avangrid, Inc.	AGR	$1.67	$1.85	$2.04	$2.26	$2.49	$2.76	$3.02	$3.29	$3.55	$3.81	$4.05	$4.27	$4.50	$4.75	$5.00	$5.28
Black Hills Corporation	BKH	$3.38	$3.55	$3.73	$3.92	$4.13	$4.34	$4.56	$4.80	$5.05	$5.32	$5.61	$5.91	$6.24	$6.58	$6.94	$7.32
CMS Energy Corporation	CMS	$2.17	$2.32	$2.47	$2.64	$2.82	$3.00	$3.20	$3.40	$3.61	$3.82	$4.04	$4.26	$4.49	$4.74	$4.99	$5.27
DTE Energy Company	DTE	$5.73	$6.08	$6.45	$6.84	$7.26	$7.70	$8.16	$8.64	$9.14	$9.66	$10.20	$10.76	$11.34	$11.96	$12.62	$13.30
El Paso Electric	EE	$2.42	$2.53	$2.65	$2.77	$2.90	$3.04	$3.18	$3.34	$3.50	$3.69	$3.88	$4.09	$4.32	$4.55	$4.80	$5.06
Hawaiian Electric Industries, Inc.	HE	$1.64	$1.73	$1.83	$1.93	$2.04	$2.16	$2.28	$2.40	$2.54	$2.68	$2.82	$2.98	$3.14	$3.31	$3.49	$3.68
NextEra Energy, Inc.	NEE	$6.50	$7.08	$7.72	$8.41	$9.16	$9.98	$10.81	$11.65	$12.49	$13.32	$14.12	$14.89	$15.71	$16.56	$17.47	$18.42
NorthWestern Corporation	NWE	$3.34	$3.43	$3.53	$3.62	$3.72	$3.83	$3.95	$4.09	$4.26	$4.45	$4.68	$4.93	$5.20	$5.48	$5.78	$6.10
OGE Energy Corp.	OGE	$1.92	$2.03	$2.14	$2.25	$2.38	$2.51	$2.65	$2.79	$2.95	$3.11	$3.28	$3.46	$3.64	$3.84	$4.05	$4.27
Otter Tail Corporation	OTTR	$1.86	$2.01	$2.18	$2.36	$2.55	$2.76	$2.98	$3.20	$3.42	$3.64	$3.85	$4.06	$4.28	$4.52	$4.76	$5.02
Pinnacle West Capital Corporation	PNW	$4.43	$4.63	$4.83	$5.04	$5.26	$5.50	$5.75	$6.02	$6.32	$6.64	$6.99	$7.37	$7.78	$8.20	$8.65	$9.12
PNM Resources, Inc.	PNM	$1.92	$2.03	$2.14	$2.26	$2.38	$2.51	$2.65	$2.80	$2.95	$3.11	$3.28	$3.46	$3.65	$3.85	$4.06	$4.28
Portland General Electric Company	POR	$2.29	$2.38	$2.48	$2.58	$2.68	$2.79	$2.91	$3.04	$3.18	$3.34	$3.51	$3.71	$3.91	$4.12	$4.35	$4.58
Southern Company	SO	$3.21	$3.30	$3.40	$3.50	$3.61	$3.71	$3.84	$3.98	$4.15	$4.34	$4.56	$4.81	$5.07	$5.35	$5.64	$5.95
WEC Energy Group, Inc.	WEC	$3.14	$3.30	$3.48	$3.66	$3.85	$4.05	$4.26	$4.49	$4.73	$4.98	$5.25	$5.54	$5.84	$6.16	$6.49	$6.85
Xcel Energy Inc.	XEL	$2.30	$2.43	$2.57	$2.72	$2.88	$3.04	$3.22	$3.40	$3.59	$3.79	$4.00	$4.21	$4.44	$4.69	$4.94	$5.21

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 119 of 176

Projected Annual
Dividend Payout Ratio

Company	Ticker	[30] 2018	[31] 2019	[32] 2020	[33] 2021	[34] 2022	[35] 2023	[36] 2024	[37] 2025	[38] 2026	[39] 2027	[40] 2028	[41] 2029	[42] 2030	[43] 2031	[44] 2032
ALLETE, Inc.	ALE	66.00%	65.50%	65.00%	64.500%	64.00%	64.26%	64.52%	64.79%	65.05%	65.31%	65.57%	65.57%	65.57%	65.57%	65.57%
Alliant Energy Corporation	LNT	64.00%	64.00%	64.00%	64.000%	64.00%	64.26%	64.52%	64.79%	65.05%	65.31%	65.57%	65.57%	65.57%	65.57%	65.57%
Ameren Corporation	AEE	56.00%	56.75%	57.50%	58.250%	59.00%	60.10%	61.19%	62.29%	63.38%	64.48%	65.57%	65.57%	65.57%	65.57%	65.57%
American Electric Power Company, Inc.	AEP	66.00%	65.25%	64.50%	63.750%	63.00%	63.43%	63.86%	64.29%	64.71%	65.14%	65.57%	65.57%	65.57%	65.57%	65.57%
Avangrid, Inc.	AGR	80.00%	76.75%	73.50%	70.250%	67.00%	66.76%	66.52%	66.29%	66.05%	65.81%	65.57%	65.57%	65.57%	65.57%	65.57%
Black Hills Corporation	BKH	54.00%	54.75%	55.50%	56.250%	57.00%	58.43%	59.86%	61.29%	62.71%	64.14%	65.57%	65.57%	65.57%	65.57%	65.57%
CMS Energy Corporation	CMS	60.00%	59.75%	59.50%	59.250%	59.00%	60.10%	61.19%	62.29%	63.38%	64.48%	65.57%	65.57%	65.57%	65.57%	65.57%
DTE Energy Company	DTE	58.00%	58.25%	58.50%	58.750%	59.00%	60.10%	61.19%	62.29%	63.38%	64.48%	65.57%	65.57%	65.57%	65.57%	65.57%
El Paso Electric	EE	57.00%	57.75%	58.50%	59.250%	60.00%	60.93%	61.86%	62.79%	63.71%	64.64%	65.57%	65.57%	65.57%	65.57%	65.57%
Hawaiian Electric Industries, Inc.	HE	66.00%	64.25%	62.50%	60.750%	59.00%	60.10%	61.19%	62.29%	63.38%	64.48%	65.57%	65.57%	65.57%	65.57%	65.57%
NextEra Energy, Inc.	NEE	56.00%	57.75%	59.50%	61.250%	63.00%	63.43%	63.86%	64.29%	64.71%	65.14%	65.57%	65.57%	65.57%	65.57%	65.57%
NorthWestern Corporation	NWE	62.00%	62.50%	63.00%	63.500%	64.00%	64.26%	64.52%	64.79%	65.05%	65.31%	65.57%	65.57%	65.57%	65.57%	65.57%
OGE Energy Corp.	OGE	68.00%	68.75%	69.50%	70.250%	71.00%	70.10%	69.19%	68.29%	67.38%	66.48%	65.57%	65.57%	65.57%	65.57%	65.57%
Otter Tail Corporation	OTTR	66.00%	64.50%	63.00%	61.500%	60.00%	60.93%	61.86%	62.79%	63.71%	64.64%	65.57%	65.57%	65.57%	65.57%	65.57%
Pinnacle West Capital Corporation	PNW	63.00%	63.00%	63.00%	63.000%	63.00%	63.43%	63.86%	64.29%	64.71%	65.14%	65.57%	65.57%	65.57%	65.57%	65.57%
PNM Resources, Inc.	PNM	52.00%	51.50%	51.00%	50.500%	50.00%	52.60%	55.19%	57.79%	60.38%	62.98%	65.57%	65.57%	65.57%	65.57%	65.57%
Portland General Electric Company	POR	65.00%	65.00%	65.00%	65.000%	65.00%	65.10%	65.19%	65.29%	65.38%	65.48%	65.57%	65.57%	65.57%	65.57%	65.57%
Southern Company	SO	79.00%	77.75%	76.50%	75.250%	74.00%	72.60%	71.19%	69.79%	68.38%	66.98%	65.57%	65.57%	65.57%	65.57%	65.57%
WEC Energy Group, Inc.	WEC	66.00%	65.75%	65.50%	65.250%	65.00%	65.10%	65.19%	65.29%	65.38%	65.48%	65.57%	65.57%	65.57%	65.57%	65.57%
Xcel Energy Inc.	XEL	62.00%	62.25%	62.50%	62.750%	63.00%	63.43%	63.86%	64.29%	64.71%	65.14%	65.57%	65.57%	65.57%	65.57%	65.57%

Projected Annual
Cash Flows

Company	Ticker	[45] 2018	[46] 2019	[47] 2020	[48] 2021	[49] 2022	[50] 2023	[51] 2024	[52] 2025	[53] 2026	[54] 2027	[55] 2028	[56] 2029	[57] 2030	[58] 2031	[59] 2032	[60] Terminal Value
ALLETE, Inc.	ALE	$2.18	$2.29	$2.40	$2.52	$2.64	$2.80	$2.97	$3.15	$3.33	$3.53	$3.74	$3.94	$4.16	$4.38	$4.62	$152.53
Alliant Energy Corporation	LNT	$1.35	$1.43	$1.51	$1.60	$1.70	$1.80	$1.92	$2.03	$2.16	$2.28	$2.42	$2.55	$2.69	$2.84	$2.99	$85.14
Ameren Corporation	AEE	$1.66	$1.80	$1.95	$2.11	$2.29	$2.49	$2.70	$2.92	$3.14	$3.38	$3.63	$3.82	$4.03	$4.25	$4.48	$124.74
American Electric Power Company, Inc.	AEP	$2.51	$2.62	$2.72	$2.83	$2.94	$3.12	$3.31	$3.51	$3.72	$3.95	$4.19	$4.42	$4.66	$4.91	$5.18	$140.61
Avangrid, Inc.	AGR	$1.48	$1.57	$1.66	$1.75	$1.85	$2.02	$2.19	$2.35	$2.51	$2.66	$2.80	$2.95	$3.11	$3.28	$3.46	$104.24
Black Hills Corporation	BKH	$1.92	$2.04	$2.18	$2.32	$2.47	$2.66	$2.87	$3.10	$3.34	$3.60	$3.88	$4.09	$4.31	$4.55	$4.80	$119.94
CMS Energy Corporation	CMS	$1.39	$1.48	$1.57	$1.67	$1.77	$1.92	$2.08	$2.25	$2.42	$2.60	$2.79	$2.94	$3.11	$3.27	$3.45	$96.94
DTE Energy Company	DTE	$3.53	$3.76	$4.00	$4.27	$4.54	$4.91	$5.29	$5.70	$6.12	$6.58	$7.05	$7.44	$7.84	$8.27	$8.72	$220.14
El Paso Electric	EE	$1.44	$1.53	$1.62	$1.72	$1.82	$1.94	$2.06	$2.20	$2.35	$2.51	$2.68	$2.83	$2.99	$3.15	$3.32	$115.97
Hawaiian Electric Industries, Inc.	HE	$1.14	$1.18	$1.21	$1.24	$1.27	$1.37	$1.47	$1.58	$1.70	$1.82	$1.95	$2.06	$2.17	$2.29	$2.41	$71.15
NextEra Energy, Inc.	NEE	$3.97	$4.46	$5.00	$5.61	$6.29	$6.86	$7.44	$8.03	$8.62	$9.20	$9.77	$10.30	$10.86	$11.45	$12.08	$345.37
NorthWestern Corporation	NWE	$2.13	$2.20	$2.28	$2.36	$2.45	$2.54	$2.64	$2.76	$2.90	$3.05	$3.23	$3.41	$3.60	$3.79	$4.00	$112.53
OGE Energy Corp.	OGE	$1.38	$1.47	$1.57	$1.67	$1.78	$1.86	$1.93	$2.01	$2.09	$2.18	$2.27	$2.39	$2.52	$2.66	$2.80	$68.62
Otter Tail Corporation	OTTR	$1.33	$1.41	$1.49	$1.57	$1.66	$1.82	$1.98	$2.15	$2.32	$2.49	$2.66	$2.81	$2.96	$3.12	$3.29	$95.52
Pinnacle West Capital Corporation	PNW	$2.91	$3.04	$3.18	$3.32	$3.46	$3.65	$3.84	$4.06	$4.30	$4.55	$4.83	$5.10	$5.38	$5.67	$5.98	$161.15
PNM Resources, Inc.	PNM	$1.05	$1.10	$1.15	$1.20	$1.26	$1.39	$1.54	$1.70	$1.88	$2.07	$2.27	$2.39	$2.52	$2.66	$2.81	$81.62
Portland General Electric Company	POR	$1.55	$1.61	$1.68	$1.74	$1.81	$1.89	$1.98	$2.08	$2.18	$2.30	$2.43	$2.56	$2.70	$2.85	$3.01	$86.52
Southern Company	SO	$2.61	$2.65	$2.68	$2.71	$2.75	$2.79	$2.84	$2.90	$2.97	$3.06	$3.16	$3.33	$3.51	$3.70	$3.90	$85.83
WEC Energy Group, Inc.	WEC	$2.18	$2.29	$2.40	$2.51	$2.63	$2.77	$2.92	$3.09	$3.26	$3.44	$3.63	$3.83	$4.04	$4.26	$4.49	$130.15
Xcel Energy Inc.	XEL	$1.51	$1.60	$1.70	$1.80	$1.92	$2.04	$2.17	$2.31	$2.45	$2.60	$2.76	$2.91	$3.07	$3.24	$3.42	$94.06

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 120 of 176

Projected Annual Data
Investor Cash Flows

Company	Ticker	[61] Initial Outflow	[62] 10/12/18	[63] 12/31/18	[64] 6/30/19	[65] 6/30/20	[66] 6/30/21	[67] 6/30/22	[68] 6/30/23	[69] 6/30/24	[70] 6/30/25	[71] 6/30/26	[72] 6/30/27	[73] 6/30/28	[74] 6/30/29	[75] 6/30/30	[76] 6/30/31	[77] 6/30/32
ALLETE, Inc.	ALE	($74.31)	$0.00	$0.48	$2.24	$2.40	$2.52	$2.64	$2.80	$2.97	$3.15	$3.33	$3.53	$3.74	$3.94	$4.16	$4.38	$157.15
Alliant Energy Corporation	LNT	($41.40)	$0.00	$0.30	$1.39	$1.51	$1.60	$1.70	$1.80	$1.92	$2.03	$2.16	$2.28	$2.42	$2.55	$2.69	$2.84	$88.13
Ameren Corporation	AEE	($59.18)	$0.00	$0.36	$1.72	$1.95	$2.11	$2.29	$2.49	$2.70	$2.92	$3.14	$3.38	$3.63	$3.82	$4.03	$4.25	$129.22
American Electric Power Company, Inc.	AEP	($68.70)	$0.00	$0.55	$2.58	$2.72	$2.83	$2.94	$3.12	$3.31	$3.51	$3.72	$3.95	$4.19	$4.42	$4.66	$4.91	$145.80
Avangrid, Inc.	AGR	($50.30)	$0.00	$0.32	$1.55	$1.66	$1.75	$1.85	$2.02	$2.19	$2.35	$2.51	$2.66	$2.80	$2.95	$3.11	$3.28	$107.70
Black Hills Corporation	BKH	($57.07)	$0.00	$0.42	$1.97	$2.18	$2.32	$2.47	$2.66	$2.87	$3.10	$3.34	$3.60	$3.88	$4.09	$4.31	$4.55	$124.74
CMS Energy Corporation	CMS	($46.23)	$0.00	$0.30	$1.44	$1.57	$1.67	$1.77	$1.92	$2.08	$2.25	$2.42	$2.60	$2.79	$2.94	$3.11	$3.27	$100.39
DTE Energy Company	DTE	($105.09)	$0.00	$0.77	$3.63	$4.00	$4.27	$4.54	$4.91	$5.29	$5.70	$6.12	$6.58	$7.05	$7.44	$7.84	$8.27	$228.86
El Paso Electric	EE	($55.93)	$0.00	$0.32	$1.48	$1.62	$1.72	$1.82	$1.94	$2.06	$2.20	$2.35	$2.51	$2.68	$2.83	$2.99	$3.15	$119.29
Hawaiian Electric Industries, Inc.	HE	($34.36)	$0.00	$0.25	$1.18	$1.21	$1.24	$1.27	$1.37	$1.47	$1.58	$1.70	$1.82	$1.95	$2.06	$2.17	$2.29	$73.57
NextEra Energy, Inc.	NEE	($163.58)	$0.00	$0.87	$4.14	$5.00	$5.61	$6.29	$6.86	$7.44	$8.03	$8.62	$9.20	$9.77	$10.30	$10.86	$11.45	$357.45
NorthWestern Corporation	NWE	($55.76)	$0.00	$0.47	$2.16	$2.28	$2.36	$2.45	$2.54	$2.64	$2.76	$2.90	$3.05	$3.23	$3.41	$3.60	$3.79	$116.53
OGE Energy Corp.	OGE	($34.24)	$0.00	$0.30	$1.42	$1.57	$1.67	$1.78	$1.86	$1.93	$2.01	$2.09	$2.18	$2.27	$2.39	$2.52	$2.66	$71.42
Otter Tail Corporation	OTTR	($45.52)	$0.00	$0.29	$1.38	$1.49	$1.57	$1.66	$1.82	$1.98	$2.15	$2.32	$2.49	$2.66	$2.81	$2.96	$3.12	$98.81
Pinnacle West Capital Corporation	PNW	($78.93)	$0.00	$0.64	$2.98	$3.18	$3.32	$3.46	$3.65	$3.84	$4.06	$4.30	$4.55	$4.83	$5.10	$5.38	$5.67	$167.13
PNM Resources, Inc.	PNM	($38.14)	$0.00	$0.23	$1.08	$1.15	$1.20	$1.26	$1.39	$1.54	$1.70	$1.88	$2.07	$2.27	$2.39	$2.52	$2.66	$84.43
Portland General Electric Company	POR	($42.71)	$0.00	$0.34	$1.58	$1.68	$1.74	$1.81	$1.89	$1.98	$2.08	$2.18	$2.30	$2.43	$2.56	$2.70	$2.85	$89.53
Southern Company	SO	($44.96)	$0.00	$0.57	$2.65	$2.68	$2.71	$2.75	$2.79	$2.84	$2.90	$2.97	$3.06	$3.16	$3.33	$3.51	$3.70	$89.74
WEC Energy Group, Inc.	WEC	($63.81)	$0.00	$0.48	$2.24	$2.40	$2.51	$2.63	$2.77	$2.92	$3.09	$3.26	$3.44	$3.63	$3.83	$4.04	$4.26	$134.64
Xcel Energy Inc.	XEL	($45.61)	$0.00	$0.33	$1.55	$1.70	$1.80	$1.92	$2.04	$2.17	$2.31	$2.45	$2.60	$2.76	$2.91	$3.07	$3.24	$97.48

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 121 of 176

Multi-Stage Growth Discounted Cash Flow Model
180 Day Average Stock Price
High EPS Growth Rate Estimate in First Stage

Inputs		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Stock	EPS Growth Rate Estimates				Long-Term	Payout Ratio			Iterative Solution		Terminal	Terminal
Company	Ticker	Price	Zacks	First Call	Value Line	High Growth	Growth	2018	2022	2028	Proof	IRR	P/E Ratio	PEG Ratio
ALLETE, Inc.	ALE	$74.31	6.00%	6.00%	5.00%	6.00%	5.46%	66.00%	64.00%	65.57%	($0.00)	8.72%	21.17	3.88
Alliant Energy Corporation	LNT	$41.40	5.50%	5.75%	6.50%	6.50%	5.46%	64.00%	64.00%	65.57%	($0.00)	9.31%	17.97	3.29
Ameren Corporation	AEE	$59.17	6.50%	6.90%	7.50%	7.50%	5.46%	56.00%	59.00%	65.57%	($0.00)	9.38%	17.63	3.23
American Electric Power Company, Inc.	AEP	$68.70	5.60%	5.59%	4.50%	5.60%	5.46%	66.00%	63.00%	65.57%	($0.00)	9.44%	17.37	3.18
Avangrid, Inc.	AGR	$50.30	9.10%	9.50%	13.00%	13.00%	5.46%	80.00%	67.00%	65.57%	($0.00)	9.53%	16.96	3.11
Black Hills Corporation	BKH	$57.07	4.50%	4.32%	6.50%	6.50%	5.46%	54.00%	57.00%	65.57%	($0.00)	10.07%	15.01	2.75
CMS Energy Corporation	CMS	$46.23	6.20%	6.97%	7.00%	7.00%	5.46%	60.00%	59.00%	65.57%	($0.00)	9.28%	18.08	3.31
DTE Energy Company	DTE	$105.09	5.30%	5.49%	7.50%	7.50%	5.46%	58.00%	59.00%	65.57%	($0.00)	10.02%	15.14	2.77
El Paso Electric	EE	$55.93	4.70%	4.70%	4.50%	4.70%	5.46%	57.00%	60.00%	65.57%	($0.00)	8.49%	22.80	4.18
Hawaiian Electric Industries, Inc.	HE	$34.36	6.70%	6.65%	3.50%	6.70%	5.46%	66.00%	59.00%	65.57%	($0.00)	9.29%	18.02	3.30
NextEra Energy, Inc.	NEE	$163.58	8.40%	9.44%	9.00%	9.44%	5.46%	56.00%	63.00%	65.57%	($0.00)	9.26%	18.18	3.33
NorthWestern Corporation	NWE	$55.76	2.30%	2.45%	3.50%	3.50%	5.46%	62.00%	64.00%	65.57%	($0.00)	9.40%	17.54	3.21
OGE Energy Corp.	OGE	$34.24	5.20%	5.30%	6.00%	6.00%	5.46%	68.00%	71.00%	65.57%	($0.00)	9.91%	15.54	2.85
Otter Tail Corporation	OTTR	$45.52	NA	9.00%	7.50%	9.00%	5.46%	66.00%	60.00%	65.57%	($0.00)	9.27%	18.14	3.32
Pinnacle West Capital Corporation	PNW	$78.93	4.50%	3.72%	5.00%	5.00%	5.46%	63.00%	63.00%	65.57%	($0.00)	9.53%	17.00	3.11
PNM Resources, Inc.	PNM	$38.14	4.60%	4.45%	7.50%	7.50%	5.46%	52.00%	50.00%	65.57%	($0.00)	9.57%	16.83	3.08
Portland General Electric Company	POR	$42.71	3.10%	4.95%	4.00%	4.95%	5.46%	65.00%	65.00%	65.57%	($0.00)	9.35%	17.74	3.25
Southern Company	SO	$44.96	4.50%	1.37%	3.00%	4.50%	5.46%	79.00%	74.00%	65.57%	($0.00)	10.77%	13.01	2.38
WEC Energy Group, Inc.	WEC	$63.81	4.10%	4.54%	7.00%	7.00%	5.46%	66.00%	65.00%	65.57%	($0.00)	9.54%	16.92	3.10
Xcel Energy Inc.	XEL	$45.61	5.80%	5.95%	5.50%	5.95%	5.46%	62.00%	63.00%	65.57%	($0.00)	9.34%	17.82	3.26
											Mean	9.47%	17.44	
											Max	10.77%		
											Min	8.49%		

Projected Annual Earnings per Share		[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]
Company	Ticker	2017	2018	2019	2020	2021	2022	**2023**	2024	2025	2026	2027	**2028**	2029	2030	2031	2032
ALLETE, Inc.	ALE	$3.13	$3.32	$3.52	$3.73	$3.95	$4.19	$4.44	$4.69	$4.96	$5.24	$5.53	$5.84	$6.15	$6.49	$6.84	$7.22
Alliant Energy Corporation	LNT	$1.99	$2.12	$2.26	$2.40	$2.56	$2.73	$2.90	$3.08	$3.26	$3.45	$3.64	$3.84	$4.05	$4.27	$4.51	$4.75
Ameren Corporation	AEE	$2.77	$2.98	$3.20	$3.44	$3.70	$3.98	$4.26	$4.55	$4.85	$5.14	$5.44	$5.74	$6.05	$6.38	$6.73	$7.10
American Electric Power Company, Inc.	AEP	$3.62	$3.82	$4.04	$4.26	$4.50	$4.75	$5.02	$5.30	$5.59	$5.90	$6.22	$6.56	$6.92	$7.30	$7.69	$8.11
Avangrid, Inc.	AGR	$1.67	$1.89	$2.13	$2.41	$2.72	$3.08	$3.44	$3.80	$4.15	$4.48	$4.78	$5.04	$5.32	$5.61	$5.91	$6.24
Black Hills Corporation	BKH	$3.38	$3.60	$3.83	$4.08	$4.35	$4.63	$4.92	$5.23	$5.54	$5.86	$6.19	$6.53	$6.88	$7.26	$7.66	$8.07
CMS Energy Corporation	CMS	$2.17	$2.32	$2.48	$2.66	$2.84	$3.04	$3.25	$3.46	$3.67	$3.89	$4.12	$4.34	$4.58	$4.83	$5.09	$5.37
DTE Energy Company	DTE	$5.73	$6.16	$6.62	$7.12	$7.65	$8.23	$8.82	$9.42	$10.03	$10.64	$11.26	$11.87	$12.52	$13.20	$13.92	$14.68
El Paso Electric	EE	$2.42	$2.53	$2.65	$2.78	$2.91	$3.04	$3.19	$3.35	$3.52	$3.70	$3.90	$4.11	$4.34	$4.57	$4.82	$5.09
Hawaiian Electric Industries, Inc.	HE	$1.64	$1.75	$1.87	$1.99	$2.13	$2.27	$2.42	$2.57	$2.72	$2.88	$3.05	$3.21	$3.39	$3.57	$3.77	$3.97
NextEra Energy, Inc.	NEE	$6.50	$7.11	$7.79	$8.52	$9.32	$10.20	$11.10	$12.00	$12.89	$13.77	$14.61	$15.41	$16.25	$17.14	$18.07	$19.06
NorthWestern Corporation	NWE	$3.34	$3.46	$3.58	$3.70	$3.83	$3.97	$4.12	$4.29	$4.48	$4.70	$4.94	$5.21	$5.49	$5.79	$6.11	$6.44
OGE Energy Corp.	OGE	$1.92	$2.04	$2.16	$2.29	$2.42	$2.57	$2.72	$2.88	$3.04	$3.22	$3.39	$3.58	$3.78	$3.98	$4.20	$4.43
Otter Tail Corporation	OTTR	$1.86	$2.03	$2.21	$2.41	$2.63	$2.86	$3.10	$3.35	$3.59	$3.83	$4.06	$4.28	$4.51	$4.76	$5.02	$5.29
Pinnacle West Capital Corporation	PNW	$4.43	$4.65	$4.88	$5.13	$5.38	$5.65	$5.94	$6.25	$6.57	$6.92	$7.29	$7.69	$8.11	$8.56	$9.02	$9.51
PNM Resources, Inc.	PNM	$1.92	$2.06	$2.22	$2.39	$2.56	$2.76	$2.95	$3.16	$3.36	$3.57	$3.77	$3.98	$4.20	$4.42	$4.67	$4.92
Portland General Electric Company	POR	$2.29	$2.40	$2.52	$2.65	$2.78	$2.92	$3.06	$3.22	$3.39	$3.57	$3.76	$3.96	$4.18	$4.41	$4.65	$4.90
Southern Company	SO	$3.21	$3.35	$3.51	$3.66	$3.83	$4.00	$4.19	$4.39	$4.61	$4.84	$5.10	$5.38	$5.67	$5.98	$6.31	$6.65
WEC Energy Group, Inc.	WEC	$3.14	$3.36	$3.59	$3.85	$4.12	$4.40	$4.70	$5.01	$5.32	$5.64	$5.96	$6.28	$6.63	$6.99	$7.37	$7.77
Xcel Energy Inc.	XEL	$2.30	$2.44	$2.58	$2.74	$2.90	$3.07	$3.25	$3.44	$3.64	$3.84	$4.05	$4.27	$4.51	$4.75	$5.01	$5.29

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 122 of 176

Projected Annual
Dividend Payout Ratio

Company	Ticker	[30] 2018	[31] 2019	[32] 2020	[33] 2021	[34] 2022	[35] 2023	[36] 2024	[37] 2025	[38] 2026	[39] 2027	[40] 2028	[41] 2029	[42] 2030	[43] 2031	[44] 2032
ALLETE, Inc.	ALE	66.00%	65.50%	65.00%	64.500%	64.00%	64.26%	64.52%	64.79%	65.05%	65.31%	65.57%	65.57%	65.57%	65.57%	65.57%
Alliant Energy Corporation	LNT	64.00%	64.00%	64.00%	64.000%	64.00%	64.26%	64.52%	64.79%	65.05%	65.31%	65.57%	65.57%	65.57%	65.57%	65.57%
Ameren Corporation	AEE	56.00%	56.75%	57.50%	58.250%	59.00%	60.10%	61.19%	62.29%	63.38%	64.48%	65.57%	65.57%	65.57%	65.57%	65.57%
American Electric Power Company, Inc.	AEP	66.00%	65.25%	64.50%	63.750%	63.00%	63.43%	63.86%	64.29%	64.71%	65.14%	65.57%	65.57%	65.57%	65.57%	65.57%
Avangrid, Inc.	AGR	80.00%	76.75%	73.50%	70.250%	67.00%	66.76%	66.52%	66.29%	66.05%	65.81%	65.57%	65.57%	65.57%	65.57%	65.57%
Black Hills Corporation	BKH	54.00%	54.75%	55.50%	56.250%	57.00%	58.43%	59.86%	61.29%	62.71%	64.14%	65.57%	65.57%	65.57%	65.57%	65.57%
CMS Energy Corporation	CMS	60.00%	59.75%	59.50%	59.250%	59.00%	60.10%	61.19%	62.29%	63.38%	64.48%	65.57%	65.57%	65.57%	65.57%	65.57%
DTE Energy Company	DTE	58.00%	58.25%	58.50%	58.750%	59.00%	60.10%	61.19%	62.29%	63.38%	64.48%	65.57%	65.57%	65.57%	65.57%	65.57%
El Paso Electric	EE	57.00%	57.75%	58.50%	59.250%	60.00%	60.93%	61.86%	62.79%	63.71%	64.64%	65.57%	65.57%	65.57%	65.57%	65.57%
Hawaiian Electric Industries, Inc.	HE	66.00%	64.25%	62.50%	60.750%	59.00%	60.10%	61.19%	62.29%	63.38%	64.48%	65.57%	65.57%	65.57%	65.57%	65.57%
NextEra Energy, Inc.	NEE	56.00%	57.75%	59.50%	61.250%	63.00%	63.43%	63.86%	64.29%	64.71%	65.14%	65.57%	65.57%	65.57%	65.57%	65.57%
NorthWestern Corporation	NWE	62.00%	62.50%	63.00%	63.500%	64.00%	64.26%	64.52%	64.79%	65.05%	65.31%	65.57%	65.57%	65.57%	65.57%	65.57%
OGE Energy Corp.	OGE	68.00%	68.75%	69.50%	70.250%	71.00%	70.10%	69.19%	68.29%	67.38%	66.48%	65.57%	65.57%	65.57%	65.57%	65.57%
Otter Tail Corporation	OTTR	66.00%	64.50%	63.00%	61.500%	60.00%	60.93%	61.86%	62.79%	63.71%	64.64%	65.57%	65.57%	65.57%	65.57%	65.57%
Pinnacle West Capital Corporation	PNW	63.00%	63.00%	63.00%	63.000%	63.00%	63.43%	63.86%	64.29%	64.71%	65.14%	65.57%	65.57%	65.57%	65.57%	65.57%
PNM Resources, Inc.	PNM	52.00%	51.50%	51.00%	50.500%	50.00%	52.60%	55.19%	57.79%	60.38%	62.98%	65.57%	65.57%	65.57%	65.57%	65.57%
Portland General Electric Company	POR	65.00%	65.00%	65.00%	65.000%	65.00%	65.10%	65.19%	65.29%	65.38%	65.48%	65.57%	65.57%	65.57%	65.57%	65.57%
Southern Company	SO	79.00%	77.75%	76.50%	75.250%	74.00%	72.60%	71.19%	69.79%	68.38%	66.98%	65.57%	65.57%	65.57%	65.57%	65.57%
WEC Energy Group, Inc.	WEC	66.00%	65.75%	65.50%	65.250%	65.00%	65.10%	65.19%	65.29%	65.38%	65.48%	65.57%	65.57%	65.57%	65.57%	65.57%
Xcel Energy Inc.	XEL	62.00%	62.25%	62.50%	62.750%	63.00%	63.43%	63.86%	64.29%	64.71%	65.14%	65.57%	65.57%	65.57%	65.57%	65.57%

Projected Annual
Cash Flows

Company	Ticker	[45] 2018	[46] 2019	[47] 2020	[48] 2021	[49] 2022	[50] 2023	[51] 2024	[52] 2025	[53] 2026	[54] 2027	[55] 2028	[56] 2029	[57] 2030	[58] 2031	[59] 2032	[60] Terminal Value
ALLETE, Inc.	ALE	$2.19	$2.30	$2.42	$2.55	$2.68	$2.85	$3.03	$3.22	$3.41	$3.61	$3.83	$4.04	$4.26	$4.49	$4.73	$152.78
Alliant Energy Corporation	LNT	$1.36	$1.44	$1.54	$1.64	$1.74	$1.86	$1.99	$2.11	$2.24	$2.38	$2.52	$2.66	$2.80	$2.96	$3.12	$85.43
Ameren Corporation	AEE	$1.67	$1.82	$1.98	$2.15	$2.35	$2.56	$2.79	$3.02	$3.26	$3.51	$3.76	$3.97	$4.19	$4.41	$4.65	$125.17
American Electric Power Company, Inc.	AEP	$2.52	$2.63	$2.75	$2.87	$2.99	$3.18	$3.38	$3.59	$3.82	$4.05	$4.30	$4.54	$4.78	$5.05	$5.32	$140.92
Avangrid, Inc.	AGR	$1.51	$1.64	$1.77	$1.91	$2.06	$2.30	$2.53	$2.75	$2.96	$3.15	$3.31	$3.49	$3.68	$3.88	$4.09	$105.75
Black Hills Corporation	BKH	$1.94	$2.10	$2.27	$2.45	$2.64	$2.88	$3.13	$3.39	$3.68	$3.97	$4.28	$4.51	$4.76	$5.02	$5.29	$121.18
CMS Energy Corporation	CMS	$1.39	$1.48	$1.58	$1.69	$1.80	$1.95	$2.12	$2.29	$2.47	$2.65	$2.85	$3.00	$3.17	$3.34	$3.52	$97.11
DTE Energy Company	DTE	$3.57	$3.86	$4.16	$4.50	$4.85	$5.30	$5.76	$6.24	$6.74	$7.26	$7.79	$8.21	$8.66	$9.13	$9.63	$222.36
El Paso Electric	EE	$1.44	$1.53	$1.62	$1.72	$1.83	$1.94	$2.07	$2.21	$2.36	$2.52	$2.70	$2.84	$3.00	$3.16	$3.34	$116.01
Hawaiian Electric Industries, Inc.	HE	$1.15	$1.20	$1.25	$1.29	$1.34	$1.45	$1.57	$1.70	$1.83	$1.96	$2.11	$2.22	$2.34	$2.47	$2.61	$71.62
NextEra Energy, Inc.	NEE	$3.98	$4.50	$5.07	$5.71	$6.43	$7.04	$7.66	$8.29	$8.91	$9.52	$10.10	$10.66	$11.24	$11.85	$12.50	$346.43
NorthWestern Corporation	NWE	$2.14	$2.24	$2.33	$2.43	$2.54	$2.65	$2.77	$2.90	$3.06	$3.23	$3.41	$3.60	$3.80	$4.00	$4.22	$112.98
OGE Energy Corp.	OGE	$1.38	$1.48	$1.59	$1.70	$1.82	$1.91	$1.99	$2.08	$2.17	$2.26	$2.35	$2.48	$2.61	$2.75	$2.90	$68.81
Otter Tail Corporation	OTTR	$1.34	$1.43	$1.52	$1.61	$1.72	$1.89	$2.07	$2.25	$2.44	$2.62	$2.80	$2.96	$3.12	$3.29	$3.47	$95.96
Pinnacle West Capital Corporation	PNW	$2.93	$3.08	$3.23	$3.39	$3.56	$3.77	$3.99	$4.23	$4.48	$4.75	$5.04	$5.32	$5.61	$5.92	$6.24	$161.71
PNM Resources, Inc.	PNM	$1.07	$1.14	$1.22	$1.29	$1.38	$1.55	$1.74	$1.94	$2.15	$2.38	$2.61	$2.75	$2.90	$3.06	$3.23	$82.82
Portland General Electric Company	POR	$1.56	$1.64	$1.72	$1.81	$1.90	$1.99	$2.10	$2.21	$2.33	$2.46	$2.60	$2.74	$2.89	$3.05	$3.21	$86.95
Southern Company	SO	$2.65	$2.73	$2.80	$2.88	$2.96	$3.04	$3.12	$3.21	$3.31	$3.42	$3.53	$3.72	$3.92	$4.14	$4.36	$86.56
WEC Energy Group, Inc.	WEC	$2.22	$2.36	$2.52	$2.69	$2.86	$3.06	$3.26	$3.47	$3.68	$3.90	$4.12	$4.34	$4.58	$4.83	$5.09	$131.47
Xcel Energy Inc.	XEL	$1.51	$1.61	$1.71	$1.82	$1.93	$2.06	$2.20	$2.34	$2.48	$2.64	$2.80	$2.95	$3.12	$3.29	$3.47	$94.17

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 123 of 176

Projected Annual Data
Investor Cash Flows

Company	Ticker	[61] Initial Outflow	[62] 10/12/18	[63] 12/31/18	[64] 6/30/19	[65] 6/30/20	[66] 6/30/21	[67] 6/30/22	[68] 6/30/23	[69] 6/30/24	[70] 6/30/25	[71] 6/30/26	[72] 6/30/27	[73] 6/30/28	[74] 6/30/29	[75] 6/30/30	[76] 6/30/31	[77] 6/30/32
ALLETE, Inc.	ALE	($74.31)	$0.00	$0.48	$2.26	$2.42	$2.55	$2.68	$2.85	$3.03	$3.22	$3.41	$3.61	$3.83	$4.04	$4.26	$4.49	$157.51
Alliant Energy Corporation	LNT	($41.40)	$0.00	$0.30	$1.40	$1.54	$1.64	$1.74	$1.86	$1.99	$2.11	$2.24	$2.38	$2.52	$2.66	$2.80	$2.96	$88.54
Ameren Corporation	AEE	($59.18)	$0.00	$0.37	$1.73	$1.98	$2.15	$2.35	$2.56	$2.79	$3.02	$3.26	$3.51	$3.76	$3.97	$4.19	$4.41	$129.82
American Electric Power Company, Inc.	AEP	($68.70)	$0.00	$0.55	$2.59	$2.75	$2.87	$2.99	$3.18	$3.38	$3.59	$3.82	$4.05	$4.30	$4.54	$4.78	$5.05	$146.24
Avangrid, Inc.	AGR	($50.30)	$0.00	$0.33	$1.61	$1.77	$1.91	$2.06	$2.30	$2.53	$2.75	$2.96	$3.15	$3.31	$3.49	$3.68	$3.88	$109.84
Black Hills Corporation	BKH	($57.07)	$0.00	$0.43	$2.01	$2.27	$2.45	$2.64	$2.88	$3.13	$3.39	$3.68	$3.97	$4.28	$4.51	$4.76	$5.02	$126.47
CMS Energy Corporation	CMS	($46.23)	$0.00	$0.31	$1.44	$1.58	$1.69	$1.80	$1.95	$2.12	$2.29	$2.47	$2.65	$2.85	$3.00	$3.17	$3.34	$100.63
DTE Energy Company	DTE	($105.09)	$0.00	$0.78	$3.71	$4.16	$4.50	$4.85	$5.30	$5.76	$6.24	$6.74	$7.26	$7.79	$8.21	$8.66	$9.13	$231.99
El Paso Electric	EE	($55.93)	$0.00	$0.32	$1.48	$1.62	$1.72	$1.83	$1.94	$2.07	$2.21	$2.36	$2.52	$2.70	$2.84	$3.00	$3.16	$119.35
Hawaiian Electric Industries, Inc.	HE	($34.36)	$0.00	$0.25	$1.19	$1.25	$1.29	$1.34	$1.45	$1.57	$1.70	$1.83	$1.96	$2.11	$2.22	$2.34	$2.47	$74.22
NextEra Energy, Inc.	NEE	($163.58)	$0.00	$0.87	$4.17	$5.07	$5.71	$6.43	$7.04	$7.66	$8.29	$8.91	$9.52	$10.10	$10.66	$11.24	$11.85	$358.93
NorthWestern Corporation	NWE	($55.76)	$0.00	$0.47	$2.18	$2.33	$2.43	$2.54	$2.65	$2.77	$2.90	$3.06	$3.23	$3.41	$3.60	$3.80	$4.00	$117.21
OGE Energy Corp.	OGE	($34.24)	$0.00	$0.30	$1.43	$1.59	$1.70	$1.82	$1.91	$1.99	$2.08	$2.17	$2.26	$2.35	$2.48	$2.61	$2.75	$71.71
Otter Tail Corporation	OTTR	($45.52)	$0.00	$0.29	$1.40	$1.52	$1.61	$1.72	$1.89	$2.07	$2.25	$2.44	$2.62	$2.80	$2.96	$3.12	$3.29	$99.43
Pinnacle West Capital Corporation	PNW	($78.93)	$0.00	$0.64	$3.00	$3.23	$3.39	$3.56	$3.77	$3.99	$4.23	$4.48	$4.75	$5.04	$5.32	$5.61	$5.92	$167.95
PNM Resources, Inc.	PNM	($38.14)	$0.00	$0.24	$1.11	$1.22	$1.29	$1.38	$1.55	$1.74	$1.94	$2.15	$2.38	$2.61	$2.75	$2.90	$3.06	$86.04
Portland General Electric Company	POR	($42.71)	$0.00	$0.34	$1.60	$1.72	$1.81	$1.90	$1.99	$2.10	$2.21	$2.33	$2.46	$2.60	$2.74	$2.89	$3.05	$90.17
Southern Company	SO	($44.96)	$0.00	$0.58	$2.71	$2.80	$2.88	$2.96	$3.04	$3.12	$3.21	$3.31	$3.42	$3.53	$3.72	$3.92	$4.14	$90.93
WEC Energy Group, Inc.	WEC	($63.81)	$0.00	$0.49	$2.30	$2.52	$2.69	$2.86	$3.06	$3.26	$3.47	$3.68	$3.90	$4.12	$4.34	$4.58	$4.83	$136.57
Xcel Energy Inc.	XEL	($45.61)	$0.00	$0.33	$1.56	$1.71	$1.82	$1.93	$2.06	$2.20	$2.34	$2.48	$2.64	$2.80	$2.95	$3.12	$3.29	$97.63

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 124 of 176

Multi-Stage Growth Discounted Cash Flow Model
180 Day Average Stock Price
Low EPS Growth Rate Estimate in First Stage

Inputs		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Stock	EPS Growth Rate Estimates				Long-Term	Payout Ratio			Iterative Solution		Terminal	Terminal
Company	Ticker	Price	Zacks	First Call	Value Line	Low Growth	Growth	2018	2022	2028	Proof	IRR	P/E Ratio	PEG Ratio
ALLETE, Inc.	ALE	$74.31	6.00%	6.00%	5.00%	5.00%	5.46%	66.00%	64.00%	65.57%	($0.00)	8.51%	22.62	4.14
Alliant Energy Corporation	LNT	$41.40	5.50%	5.75%	6.50%	5.50%	5.46%	64.00%	64.00%	65.57%	($0.00)	9.06%	19.18	3.51
Ameren Corporation	AEE	$59.17	6.50%	6.90%	7.50%	6.50%	5.46%	56.00%	59.00%	65.57%	($0.00)	9.14%	18.79	3.44
American Electric Power Company, Inc.	AEP	$68.70	5.60%	5.59%	4.50%	4.50%	5.46%	66.00%	63.00%	65.57%	($0.00)	9.16%	18.67	3.42
Avangrid, Inc.	AGR	$50.30	9.10%	9.50%	13.00%	9.10%	5.46%	80.00%	67.00%	65.57%	($0.00)	8.65%	21.64	3.96
Black Hills Corporation	BKH	$57.07	4.50%	4.32%	6.50%	4.32%	5.46%	54.00%	57.00%	65.57%	($0.00)	9.47%	17.25	3.16
CMS Energy Corporation	CMS	$46.23	6.20%	6.97%	7.00%	6.20%	5.46%	60.00%	59.00%	65.57%	($0.00)	9.09%	19.04	3.49
DTE Energy Company	DTE	$105.09	5.30%	5.49%	7.50%	5.30%	5.46%	58.00%	59.00%	65.57%	($0.00)	9.43%	17.42	3.19
El Paso Electric	EE	$55.93	4.70%	4.70%	4.50%	4.50%	5.46%	57.00%	60.00%	65.57%	($0.00)	8.45%	23.11	4.23
Hawaiian Electric Industries, Inc.	HE	$34.36	6.70%	6.65%	3.50%	3.50%	5.46%	66.00%	59.00%	65.57%	($0.00)	8.57%	22.25	4.08
NextEra Energy, Inc.	NEE	$163.58	8.40%	9.44%	9.00%	8.40%	5.46%	56.00%	63.00%	65.57%	($0.00)	9.02%	19.41	3.56
NorthWestern Corporation	NWE	$55.76	2.30%	2.45%	3.50%	2.30%	5.46%	62.00%	64.00%	65.57%	($0.00)	9.09%	19.02	3.48
OGE Energy Corp.	OGE	$34.24	5.20%	5.30%	6.00%	5.20%	5.46%	68.00%	71.00%	65.57%	($0.00)	9.68%	16.38	3.00
Otter Tail Corporation	OTTR	$45.52	NA	9.00%	7.50%	7.50%	5.46%	66.00%	60.00%	65.57%	($0.00)	8.92%	19.95	3.66
Pinnacle West Capital Corporation	PNW	$78.93	4.50%	3.72%	5.00%	3.72%	5.46%	63.00%	63.00%	65.57%	($0.00)	9.20%	18.49	3.39
PNM Resources, Inc.	PNM	$38.14	4.60%	4.45%	7.50%	4.45%	5.46%	52.00%	50.00%	65.57%	($0.00)	8.84%	20.44	3.75
Portland General Electric Company	POR	$42.71	3.10%	4.95%	4.00%	3.10%	5.46%	65.00%	65.00%	65.57%	($0.00)	8.90%	20.08	3.68
Southern Company	SO	$44.96	4.50%	1.37%	3.00%	1.37%	5.46%	79.00%	74.00%	65.57%	($0.00)	9.76%	16.08	2.95
WEC Energy Group, Inc.	WEC	$63.81	4.10%	4.54%	7.00%	4.10%	5.46%	66.00%	65.00%	65.57%	($0.00)	8.84%	20.47	3.75
Xcel Energy Inc.	XEL	$45.61	5.80%	5.95%	5.50%	5.50%	5.46%	62.00%	63.00%	65.57%	($0.00)	9.23%	18.35	3.36
											Mean	9.05%	19.43	
											Max	9.76%		
											Min	8.45%		

Projected Annual Earnings per Share		[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]
Company	Ticker	2017	2018	2019	2020	2021	2022	**2023**	2024	2025	2026	2027	**2028**	2029	2030	2031	2032
ALLETE, Inc.	ALE	$3.13	$3.29	$3.45	$3.62	$3.80	$3.99	$4.20	$4.41	$4.64	$4.89	$5.15	$5.44	$5.73	$6.04	$6.37	$6.72
Alliant Energy Corporation	LNT	$1.99	$2.10	$2.21	$2.34	$2.47	$2.60	$2.74	$2.89	$3.05	$3.22	$3.40	$3.58	$3.78	$3.98	$4.20	$4.43
Ameren Corporation	AEE	$2.77	$2.95	$3.14	$3.35	$3.56	$3.80	$4.04	$4.28	$4.54	$4.80	$5.07	$5.35	$5.64	$5.95	$6.28	$6.62
American Electric Power Company, Inc.	AEP	$3.62	$3.78	$3.95	$4.13	$4.32	$4.51	$4.72	$4.95	$5.20	$5.46	$5.75	$6.07	$6.40	$6.75	$7.11	$7.50
Avangrid, Inc.	AGR	$1.67	$1.82	$1.99	$2.17	$2.37	$2.58	$2.80	$3.02	$3.24	$3.46	$3.67	$3.87	$4.08	$4.30	$4.54	$4.78
Black Hills Corporation	BKH	$3.38	$3.53	$3.68	$3.84	$4.00	$4.18	$4.36	$4.57	$4.79	$5.04	$5.30	$5.59	$5.90	$6.22	$6.56	$6.91
CMS Energy Corporation	CMS	$2.17	$2.30	$2.45	$2.60	$2.76	$2.93	$3.11	$3.29	$3.49	$3.69	$3.89	$4.10	$4.33	$4.56	$4.81	$5.08
DTE Energy Company	DTE	$5.73	$6.03	$6.35	$6.69	$7.04	$7.42	$7.81	$8.23	$8.67	$9.14	$9.64	$10.17	$10.72	$11.31	$11.92	$12.57
El Paso Electric	EE	$2.42	$2.53	$2.64	$2.76	$2.89	$3.02	$3.16	$3.31	$3.47	$3.65	$3.85	$4.05	$4.28	$4.51	$4.76	$5.02
Hawaiian Electric Industries, Inc.	HE	$1.64	$1.70	$1.76	$1.82	$1.88	$1.95	$2.02	$2.11	$2.20	$2.31	$2.42	$2.56	$2.70	$2.84	$3.00	$3.16
NextEra Energy, Inc.	NEE	$6.50	$7.05	$7.64	$8.28	$8.97	$9.73	$10.50	$11.28	$12.06	$12.83	$13.60	$14.34	$15.12	$15.95	$16.82	$17.74
NorthWestern Corporation	NWE	$3.34	$3.42	$3.50	$3.58	$3.66	$3.74	$3.85	$3.98	$4.13	$4.31	$4.53	$4.77	$5.03	$5.31	$5.60	$5.90
OGE Energy Corp.	OGE	$1.92	$2.02	$2.12	$2.24	$2.35	$2.47	$2.60	$2.74	$2.89	$3.04	$3.21	$3.38	$3.57	$3.76	$3.97	$4.18
Otter Tail Corporation	OTTR	$1.86	$2.00	$2.15	$2.31	$2.48	$2.67	$2.86	$3.06	$3.25	$3.45	$3.65	$3.85	$4.06	$4.29	$4.52	$4.77
Pinnacle West Capital Corporation	PNW	$4.43	$4.59	$4.77	$4.94	$5.13	$5.32	$5.53	$5.77	$6.03	$6.33	$6.65	$7.02	$7.40	$7.80	$8.23	$8.68
PNM Resources, Inc.	PNM	$1.92	$2.01	$2.09	$2.19	$2.29	$2.39	$2.50	$2.62	$2.75	$2.89	$3.04	$3.21	$3.38	$3.56	$3.76	$3.96
Portland General Electric Company	POR	$2.29	$2.36	$2.43	$2.51	$2.59	$2.67	$2.76	$2.87	$2.99	$3.13	$3.29	$3.47	$3.66	$3.86	$4.07	$4.29
Southern Company	SO	$3.21	$3.25	$3.30	$3.34	$3.39	$3.44	$3.51	$3.60	$3.73	$3.88	$4.06	$4.28	$4.52	$4.77	$5.03	$5.30
WEC Energy Group, Inc.	WEC	$3.14	$3.27	$3.40	$3.54	$3.69	$3.84	$4.00	$4.19	$4.39	$4.61	$4.85	$5.11	$5.39	$5.69	$6.00	$6.32
Xcel Energy Inc.	XEL	$2.30	$2.43	$2.56	$2.70	$2.85	$3.01	$3.17	$3.35	$3.53	$3.72	$3.92	$4.14	$4.36	$4.60	$4.85	$5.12

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 125 of 176

Projected Annual
Dividend Payout Ratio

Company	Ticker	[30] 2018	[31] 2019	[32] 2020	[33] 2021	[34] 2022	[35] 2023	[36] 2024	[37] 2025	[38] 2026	[39] 2027	[40] 2028	[41] 2029	[42] 2030	[43] 2031	[44] 2032
ALLETE, Inc.	ALE	66.00%	65.50%	65.00%	64.500%	64.00%	64.26%	64.52%	64.79%	65.05%	65.31%	65.57%	65.57%	65.57%	65.57%	65.57%
Alliant Energy Corporation	LNT	64.00%	64.00%	64.00%	64.000%	64.00%	64.26%	64.52%	64.79%	65.05%	65.31%	65.57%	65.57%	65.57%	65.57%	65.57%
Ameren Corporation	AEE	56.00%	56.75%	57.50%	58.250%	59.00%	60.10%	61.19%	62.29%	63.38%	64.48%	65.57%	65.57%	65.57%	65.57%	65.57%
American Electric Power Company, Inc.	AEP	66.00%	65.25%	64.50%	63.750%	63.00%	63.43%	63.86%	64.29%	64.71%	65.14%	65.57%	65.57%	65.57%	65.57%	65.57%
Avangrid, Inc.	AGR	80.00%	76.75%	73.50%	70.250%	67.00%	66.76%	66.52%	66.29%	66.05%	65.81%	65.57%	65.57%	65.57%	65.57%	65.57%
Black Hills Corporation	BKH	54.00%	54.75%	55.50%	56.250%	57.00%	58.43%	59.86%	61.29%	62.71%	64.14%	65.57%	65.57%	65.57%	65.57%	65.57%
CMS Energy Corporation	CMS	60.00%	59.75%	59.50%	59.250%	59.00%	60.10%	61.19%	62.29%	63.38%	64.48%	65.57%	65.57%	65.57%	65.57%	65.57%
DTE Energy Company	DTE	58.00%	58.25%	58.50%	58.750%	59.00%	60.10%	61.19%	62.29%	63.38%	64.48%	65.57%	65.57%	65.57%	65.57%	65.57%
El Paso Electric	EE	57.00%	57.75%	58.50%	59.250%	60.00%	60.93%	61.86%	62.79%	63.71%	64.64%	65.57%	65.57%	65.57%	65.57%	65.57%
Hawaiian Electric Industries, Inc.	HE	66.00%	64.25%	62.50%	60.750%	59.00%	60.10%	61.19%	62.29%	63.38%	64.48%	65.57%	65.57%	65.57%	65.57%	65.57%
NextEra Energy, Inc.	NEE	56.00%	57.75%	59.50%	61.250%	63.00%	63.43%	63.86%	64.29%	64.71%	65.14%	65.57%	65.57%	65.57%	65.57%	65.57%
NorthWestern Corporation	NWE	62.00%	62.50%	63.00%	63.500%	64.00%	64.26%	64.52%	64.79%	65.05%	65.31%	65.57%	65.57%	65.57%	65.57%	65.57%
OGE Energy Corp.	OGE	68.00%	68.75%	69.50%	70.250%	71.00%	70.10%	69.19%	68.29%	67.38%	66.48%	65.57%	65.57%	65.57%	65.57%	65.57%
Otter Tail Corporation	OTTR	66.00%	64.50%	63.00%	61.500%	60.00%	60.93%	61.86%	62.79%	63.71%	64.64%	65.57%	65.57%	65.57%	65.57%	65.57%
Pinnacle West Capital Corporation	PNW	63.00%	63.00%	63.00%	63.000%	63.00%	63.43%	63.86%	64.29%	64.71%	65.14%	65.57%	65.57%	65.57%	65.57%	65.57%
PNM Resources, Inc.	PNM	52.00%	51.50%	51.00%	50.500%	50.00%	52.60%	55.19%	57.79%	60.38%	62.98%	65.57%	65.57%	65.57%	65.57%	65.57%
Portland General Electric Company	POR	65.00%	65.00%	65.00%	65.000%	65.00%	65.10%	65.19%	65.29%	65.38%	65.48%	65.57%	65.57%	65.57%	65.57%	65.57%
Southern Company	SO	79.00%	77.75%	76.50%	75.250%	74.00%	72.60%	71.19%	69.79%	68.38%	66.98%	65.57%	65.57%	65.57%	65.57%	65.57%
WEC Energy Group, Inc.	WEC	66.00%	65.75%	65.50%	65.250%	65.00%	65.10%	65.19%	65.29%	65.38%	65.48%	65.57%	65.57%	65.57%	65.57%	65.57%
Xcel Energy Inc.	XEL	62.00%	62.25%	62.50%	62.750%	63.00%	63.43%	63.86%	64.29%	64.71%	65.14%	65.57%	65.57%	65.57%	65.57%	65.57%

Projected Annual
Cash Flows

Company	Ticker	[45] 2018	[46] 2019	[47] 2020	[48] 2021	[49] 2022	[50] 2023	[51] 2024	[52] 2025	[53] 2026	[54] 2027	[55] 2028	[56] 2029	[57] 2030	[58] 2031	[59] 2032	[60] Terminal Value
ALLETE, Inc.	ALE	$2.17	$2.26	$2.36	$2.45	$2.56	$2.70	$2.85	$3.01	$3.18	$3.37	$3.56	$3.76	$3.96	$4.18	$4.41	$152.05
Alliant Energy Corporation	LNT	$1.34	$1.42	$1.50	$1.58	$1.66	$1.76	$1.87	$1.98	$2.09	$2.22	$2.35	$2.48	$2.61	$2.75	$2.90	$84.95
Ameren Corporation	AEE	$1.65	$1.78	$1.92	$2.08	$2.24	$2.42	$2.62	$2.83	$3.04	$3.27	$3.51	$3.70	$3.90	$4.11	$4.34	$124.37
American Electric Power Company, Inc.	AEP	$2.50	$2.58	$2.66	$2.75	$2.84	$2.99	$3.16	$3.34	$3.53	$3.75	$3.98	$4.19	$4.42	$4.66	$4.92	$140.04
Avangrid, Inc.	AGR	$1.46	$1.53	$1.59	$1.66	$1.73	$1.87	$2.01	$2.15	$2.28	$2.41	$2.54	$2.67	$2.82	$2.97	$3.14	$103.49
Black Hills Corporation	BKH	$1.90	$2.01	$2.13	$2.25	$2.38	$2.55	$2.74	$2.94	$3.16	$3.40	$3.67	$3.87	$4.08	$4.30	$4.53	$119.30
CMS Energy Corporation	CMS	$1.38	$1.46	$1.55	$1.64	$1.73	$1.87	$2.02	$2.17	$2.34	$2.51	$2.69	$2.84	$2.99	$3.16	$3.33	$96.63
DTE Energy Company	DTE	$3.50	$3.70	$3.91	$4.14	$4.38	$4.70	$5.04	$5.40	$5.79	$6.22	$6.67	$7.03	$7.41	$7.82	$8.24	$218.98
El Paso Electric	EE	$1.44	$1.53	$1.62	$1.71	$1.81	$1.92	$2.05	$2.18	$2.33	$2.49	$2.66	$2.80	$2.96	$3.12	$3.29	$115.90
Hawaiian Electric Industries, Inc.	HE	$1.12	$1.13	$1.14	$1.14	$1.15	$1.22	$1.29	$1.37	$1.46	$1.56	$1.68	$1.77	$1.86	$1.97	$2.07	$70.36
NextEra Energy, Inc.	NEE	$3.95	$4.41	$4.93	$5.50	$6.13	$6.66	$7.20	$7.75	$8.31	$8.86	$9.40	$9.92	$10.46	$11.03	$11.63	$344.25
NorthWestern Corporation	NWE	$2.12	$2.18	$2.25	$2.32	$2.39	$2.47	$2.57	$2.68	$2.81	$2.96	$3.13	$3.30	$3.48	$3.67	$3.87	$112.27
OGE Energy Corp.	OGE	$1.37	$1.46	$1.55	$1.65	$1.76	$1.82	$1.90	$1.97	$2.05	$2.13	$2.22	$2.34	$2.47	$2.60	$2.74	$68.50
Otter Tail Corporation	OTTR	$1.32	$1.39	$1.46	$1.53	$1.60	$1.74	$1.89	$2.04	$2.20	$2.36	$2.53	$2.67	$2.81	$2.96	$3.13	$95.10
Pinnacle West Capital Corporation	PNW	$2.89	$3.00	$3.11	$3.23	$3.35	$3.51	$3.68	$3.88	$4.09	$4.33	$4.60	$4.85	$5.12	$5.40	$5.69	$160.53
PNM Resources, Inc.	PNM	$1.04	$1.08	$1.12	$1.15	$1.19	$1.31	$1.44	$1.59	$1.74	$1.91	$2.10	$2.22	$2.34	$2.47	$2.60	$81.05
Portland General Electric Company	POR	$1.53	$1.58	$1.63	$1.68	$1.73	$1.80	$1.87	$1.95	$2.05	$2.15	$2.27	$2.40	$2.53	$2.67	$2.81	$86.13
Southern Company	SO	$2.57	$2.56	$2.56	$2.55	$2.54	$2.55	$2.56	$2.60	$2.65	$2.72	$2.81	$2.96	$3.12	$3.30	$3.47	$85.21
WEC Energy Group, Inc.	WEC	$2.16	$2.24	$2.32	$2.41	$2.50	$2.61	$2.73	$2.86	$3.01	$3.17	$3.35	$3.54	$3.73	$3.93	$4.15	$129.42
Xcel Energy Inc.	XEL	$1.50	$1.59	$1.69	$1.79	$1.89	$2.01	$2.14	$2.27	$2.41	$2.56	$2.71	$2.86	$3.02	$3.18	$3.36	$93.92

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 126 of 176

Projected Annual Data
Investor Cash Flows

Company	Ticker	[61] Initial Outflow	[62] 10/12/18	[63] 12/31/18	[64] 6/30/19	[65] 6/30/20	[66] 6/30/21	[67] 6/30/22	[68] 6/30/23	[69] 6/30/24	[70] 6/30/25	[71] 6/30/26	[72] 6/30/27	[73] 6/30/28	[74] 6/30/29	[75] 6/30/30	[76] 6/30/31	[77] 6/30/32
ALLETE, Inc.	ALE	($74.31)	$0.00	$0.48	$2.22	$2.36	$2.45	$2.56	$2.70	$2.85	$3.01	$3.18	$3.37	$3.56	$3.76	$3.96	$4.18	$156.46
Alliant Energy Corporation	LNT	($41.40)	$0.00	$0.29	$1.38	$1.50	$1.58	$1.66	$1.76	$1.87	$1.98	$2.09	$2.22	$2.35	$2.48	$2.61	$2.75	$87.85
Ameren Corporation	AEE	($59.18)	$0.00	$0.36	$1.71	$1.92	$2.08	$2.24	$2.42	$2.62	$2.83	$3.04	$3.27	$3.51	$3.70	$3.90	$4.11	$128.71
American Electric Power Company, Inc.	AEP	($68.70)	$0.00	$0.55	$2.55	$2.66	$2.75	$2.84	$2.99	$3.16	$3.34	$3.53	$3.75	$3.98	$4.19	$4.42	$4.66	$144.96
Avangrid, Inc.	AGR	($50.30)	$0.00	$0.32	$1.52	$1.59	$1.66	$1.73	$1.87	$2.01	$2.15	$2.28	$2.41	$2.54	$2.67	$2.82	$2.97	$106.62
Black Hills Corporation	BKH	($57.07)	$0.00	$0.42	$1.95	$2.13	$2.25	$2.38	$2.55	$2.74	$2.94	$3.16	$3.40	$3.67	$3.87	$4.08	$4.30	$123.83
CMS Energy Corporation	CMS	($46.23)	$0.00	$0.30	$1.43	$1.55	$1.64	$1.73	$1.87	$2.02	$2.17	$2.34	$2.51	$2.69	$2.84	$2.99	$3.16	$99.96
DTE Energy Company	DTE	($105.09)	$0.00	$0.77	$3.59	$3.91	$4.14	$4.38	$4.70	$5.04	$5.40	$5.79	$6.22	$6.67	$7.03	$7.41	$7.82	$227.23
El Paso Electric	EE	($55.93)	$0.00	$0.32	$1.47	$1.62	$1.71	$1.81	$1.92	$2.05	$2.18	$2.33	$2.49	$2.66	$2.80	$2.96	$3.12	$119.19
Hawaiian Electric Industries, Inc.	HE	($34.36)	$0.00	$0.25	$1.14	$1.14	$1.14	$1.15	$1.22	$1.29	$1.37	$1.46	$1.56	$1.68	$1.77	$1.86	$1.97	$72.44
NextEra Energy, Inc.	NEE	($163.58)	$0.00	$0.86	$4.11	$4.93	$5.50	$6.13	$6.66	$7.20	$7.75	$8.31	$8.86	$9.40	$9.92	$10.46	$11.03	$355.88
NorthWestern Corporation	NWE	($55.76)	$0.00	$0.46	$2.14	$2.25	$2.32	$2.39	$2.47	$2.57	$2.68	$2.81	$2.96	$3.13	$3.30	$3.48	$3.67	$116.14
OGE Energy Corp.	OGE	($34.24)	$0.00	$0.30	$1.41	$1.55	$1.65	$1.76	$1.82	$1.90	$1.97	$2.05	$2.13	$2.22	$2.34	$2.47	$2.60	$71.25
Otter Tail Corporation	OTTR	($45.52)	$0.00	$0.29	$1.37	$1.46	$1.53	$1.60	$1.74	$1.89	$2.04	$2.20	$2.36	$2.53	$2.67	$2.81	$2.96	$98.22
Pinnacle West Capital Corporation	PNW	($78.93)	$0.00	$0.63	$2.95	$3.11	$3.23	$3.35	$3.51	$3.68	$3.88	$4.09	$4.33	$4.60	$4.85	$5.12	$5.40	$166.22
PNM Resources, Inc.	PNM	($38.14)	$0.00	$0.23	$1.07	$1.12	$1.15	$1.19	$1.31	$1.44	$1.59	$1.74	$1.91	$2.10	$2.22	$2.34	$2.47	$83.65
Portland General Electric Company	POR	($42.71)	$0.00	$0.34	$1.56	$1.63	$1.68	$1.73	$1.80	$1.87	$1.95	$2.05	$2.15	$2.27	$2.40	$2.53	$2.67	$88.94
Southern Company	SO	($44.96)	$0.00	$0.56	$2.59	$2.56	$2.55	$2.54	$2.55	$2.56	$2.60	$2.65	$2.72	$2.81	$2.96	$3.12	$3.30	$88.68
WEC Energy Group, Inc.	WEC	($63.81)	$0.00	$0.47	$2.20	$2.32	$2.41	$2.50	$2.61	$2.73	$2.86	$3.01	$3.17	$3.35	$3.54	$3.73	$3.93	$133.57
Xcel Energy Inc.	XEL	($45.61)	$0.00	$0.33	$1.55	$1.69	$1.79	$1.89	$2.01	$2.14	$2.27	$2.41	$2.56	$2.71	$2.86	$3.02	$3.18	$97.28

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 127 of 176

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 128 of 176

Multi-Stage DCF Notes:

[1] Source: Bloomberg; based on 30-, 90-, and 180-day historical average as of October 12, 2018
[2] Source: Zacks
[3] Source: Yahoo! Finance
[4] Source: Value Line
[5] Equals indicated value (average, minimum, maximum) of Columns [2], [3], [4]
[6] Source: Federal Reserve, Bureau of Economic Analysis, Blue Chip Financial Forecast
[7] Source: Value Line
[8] Source: Value Line
[9] Source: Bloomberg Professional
[10] Equals Column [1] + Column [61]
[11] Equals result of Excel Solver function; goal: Column [10] equals $0.00
[12] Equals Column [60] / Column [29]
[13] Equals Column [12] / (Column [6] x 100)
[14] Source: Value Line
[15] Equals Column [14] x (1 + Column [5])
[16] Equals Column [15] x (1 + Column [5])
[17] Equals Column [16] x (1 + Column [5])
[18] Equals Column [17] x (1 + Column [5])
[19] Equals Column [18] x (1 + Column [5])
[20] Equals (1 + (Column [5] + (((Column [6] − Column [5]) / (2028 − 2023 + 1)) x (2023 − 2022)))) x Column [19]
[21] Equals (1 + (Column [5] + (((Column [6] − Column [5]) / (2028 − 2023 + 1)) x (2024 − 2022)))) x Column [20]
[22] Equals (1 + (Column [5] + (((Column [6] − Column [5]) / (2028 − 2023 + 1)) x (2025 − 2022)))) x Column [21]
[23] Equals (1 + (Column [5] + (((Column [6] − Column [5]) / (2028 − 2023 + 1)) x (2026 − 2022)))) x Column [22]
[24] Equals (1 + (Column [5] + (((Column [6] − Column [5]) / (2028 − 2023 + 1)) x (2027 − 2022)))) x Column [23]
[25] Equals Column [24] x (1 + Column [6])
[26] Equals Column [25] x (1 + Column [6])
[27] Equals Column [26] x (1 + Column [6])
[28] Equals Column [27] x (1 + Column [6])
[29] Equals Column [28] x (1 + Column [6])
[30] Equals Column [7]
[31] Equals Column [30] + ((Column [34] − Column [30]) / 4)
[32] Equals Column [31] + ((Column [34] − Column [30]) / 4)
[33] Equals Column [32] + ((Column [34] − Column [30]) / 4)
[34] Equals Column [8]
[35] Equals Column [34] + ((Column [40] − Column [34]) / 6)
[36] Equals Column [35] + ((Column [40] − Column [34]) / 6)
[37] Equals Column [36] + ((Column [40] − Column [34]) / 6)
[38] Equals Column [37] + ((Column [40] − Column [34]) / 6)
[39] Equals Column [38] + ((Column [40] − Column [34]) / 6)
[40] Equals Column [9]
[41] Equals Column [9]
[42] Equals Column [9]
[43] Equals Column [9]
[44] Equals Column [9]
[45] Equals Column [15] x Column [30]
[46] Equals Column [16] x Column [31]
[47] Equals Column [17] x Column [32]
[48] Equals Column [18] x Column [33]
[49] Equals Column [19] x Column [34]
[50] Equals Column [20] x Column [35]
[51] Equals Column [21] x Column [36]
[52] Equals Column [22] x Column [37]
[53] Equals Column [23] x Column [38]
[54] Equals Column [24] x Column [39]
[55] Equals Column [25] x Column [40]
[56] Equals Column [26] x Column [41]
[57] Equals Column [27] x Column [42]
[58] Equals Column [28] x Column [43]
[59] Equals Column [29] x Column [44]
[60] Equals (Column [59] x (1 + Column [6])) / (Column [11] − Column [6])
[61] Equals negative net present value; discount rate equals Column [11], cash flows equal Column [63] through Column [77]
[62] Equals $0.00
[63] Equals Column [45] x (12/31/2018 - 10/12/2018) / 365
[64] Equals Column [45] x (1 + (0.5 x Column [5]))
[65] Equals Column [47]
[66] Equals Column [48]
[67] Equals Column [49]
[68] Equals Column [50]
[69] Equals Column [51]
[70] Equals Column [52]
[71] Equals Column [53]
[72] Equals Column [54]
[73] Equals Column [55]
[74] Equals Column [56]
[75] Equals Column [57]
[76] Equals Column [58]
[77] Equals Column [59] + [60]

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 129 of 176

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

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

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

Company	Ticker	Market Capitalization	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est.	DCF Result	Weighted DCF Result
Broadridge Financial Solutions Inc	BR	$ 13,671.39	0.06%	1.59%	10.00%	11.67%	0.0065%
Berkshire Hathaway Inc	BRK/B	$ 510,159.24	2.07%	0.00%	-5.60%	-5.60%	-0.1162%
Boston Scientific Corp	BSX	$ 51,154.39	0.21%	0.00%	22.04%	22.04%	0.0458%
BorgWarner Inc	BWA	$ 7,905.63	0.03%	1.79%	6.52%	8.36%	0.0027%
Boston Properties Inc	BXP	$ 17,711.95	0.07%	2.87%	6.03%	8.99%	0.0065%
Citigroup Inc	C	$ 170,556.26	0.69%	2.21%	13.11%	15.45%	0.1072%
CA Inc	CA	$ 18,273.85	0.07%	2.38%	3.20%	5.62%	0.0042%
Conagra Brands Inc	CAG	$ 14,424.45	0.06%	2.42%	7.85%	10.37%	0.0061%
Cardinal Health Inc	CAH	$ 15,482.03	0.06%	3.82%	9.36%	13.35%	0.0084%
Caterpillar Inc	CAT	$ 84,435.81	0.34%	2.29%	27.65%	30.26%	0.1039%
Chubb Ltd	CB	$ 58,210.86	0.24%	2.31%	10.83%	13.27%	0.0314%
Cboe Global Markets Inc	CBOE	$ 11,194.18	0.05%	1.16%	12.92%	14.16%	0.0064%
CBRE Group Inc	CBRE	$ 13,221.55	0.05%	0.00%	9.75%	9.75%	0.0052%
CBS Corp	CBS	$ 20,418.10	0.08%	1.39%	16.37%	17.87%	0.0148%
Crown Castle International Corp	CCI	$ 43,537.45	0.18%	4.07%	19.23%	23.69%	0.0419%
Carnival Corp	CCL	$ 40,457.95	0.16%	3.30%	12.90%	16.41%	0.0270%
Cadence Design Systems Inc	CDNS	$ 11,309.49	0.05%	0.00%	12.00%	12.00%	0.0055%
Celgene Corp	CELG	$ 58,083.72	0.24%	0.00%	21.65%	21.65%	0.0511%
Cerner Corp	CERN	$ 20,437.75	0.08%	0.00%	11.66%	11.66%	0.0097%
CF Industries Holdings Inc	CF	$ 12,240.76	0.05%	2.29%	15.30%	17.76%	0.0088%
Citizens Financial Group Inc	CFG	$ 17,186.43	0.07%	2.71%	14.50%	17.41%	0.0122%
Church & Dwight Co Inc	CHD	$ 13,760.02	0.06%	1.55%	9.63%	11.25%	0.0063%
CH Robinson Worldwide Inc	CHRW	$ 12,701.76	0.05%	2.05%	10.23%	12.38%	0.0064%
Charter Communications Inc	CHTR	$ 79,554.18	0.32%	0.00%	45.75%	45.75%	0.1480%
Cigna Corp	CI	$ 50,398.37	0.20%	0.02%	13.65%	13.67%	0.0280%
Cincinnati Financial Corp	CINF	$ 11,764.64	N/A	3.16%	N/A	N/A	N/A
Colgate-Palmolive Co	CL	$ 54,268.38	0.22%	2.65%	7.73%	10.49%	0.0231%
Clorox Co/The	CLX	$ 18,494.66	0.08%	2.65%	6.62%	9.36%	0.0070%
Comerica Inc	CMA	$ 14,522.65	0.06%	2.17%	18.95%	21.33%	0.0126%
Comcast Corp	CMCSA	$ 158,626.53	0.65%	2.15%	14.85%	17.16%	0.1107%
CME Group Inc	CME	$ 60,117.65	0.24%	3.14%	9.30%	12.59%	0.0308%
Chipotle Mexican Grill Inc	CMG	$ 12,114.53	0.05%	0.00%	19.11%	19.11%	0.0094%
Cummins Inc	CMI	$ 23,719.32	0.10%	3.03%	9.58%	12.75%	0.0123%
CMS Energy Corp	CMS	$ 13,837.52	0.06%	2.92%	6.16%	9.18%	0.0052%
Centene Corp	CNC	$ 28,904.24	0.12%	0.00%	15.27%	15.27%	0.0179%
CenterPoint Energy Inc	CNP	$ 13,702.50	0.06%	4.11%	6.17%	10.40%	0.0058%
Capital One Financial Corp	COF	$ 43,436.21	0.18%	1.76%	16.00%	17.90%	0.0316%
Cabot Oil & Gas Corp	COG	$ 10,314.73	0.04%	1.01%	44.61%	45.85%	0.0192%
Rockwell Collins Inc	COL	$ 22,075.96	0.09%	1.15%	11.60%	12.82%	0.0115%
Cooper Cos Inc/The	COO	$ 12,590.57	0.05%	0.03%	10.80%	10.83%	0.0055%
ConocoPhillips	COP	$ 85,797.50	0.35%	1.56%	6.00%	7.61%	0.0265%
Costco Wholesale Corp	COST	$ 99,446.99	0.40%	1.03%	11.03%	12.12%	0.0490%
Coty Inc	COTY	$ 8,281.37	0.03%	4.61%	13.15%	18.06%	0.0061%
Campbell Soup Co	CPB	$ 11,154.34	0.05%	3.86%	3.46%	7.39%	0.0034%
Copart Inc	CPRT	$ 11,784.70	0.05%	0.00%	10.00%	10.00%	0.0048%
salesforce.com Inc	CRM	$ 111,038.16	0.45%	0.00%	26.12%	26.12%	0.1179%
Cisco Systems Inc	CSCO	$ 208,955.68	0.85%	3.08%	7.18%	10.38%	0.0882%
CSX Corp	CSX	$ 60,288.50	0.25%	1.25%	11.96%	13.29%	0.0326%
Cintas Corp	CTAS	$ 19,986.30	0.08%	0.93%	11.85%	12.84%	0.0104%
CenturyLink Inc	CTL	$ 22,315.35	0.09%	10.45%	-15.59%	-5.95%	-0.0054%
Cognizant Technology Solutions Corp	CTSH	$ 41,875.48	0.17%	1.08%	14.03%	15.18%	0.0258%
Citrix Systems Inc	CTXS	$ 13,909.06	0.06%	0.00%	9.00%	9.00%	0.0051%
CVS Health Corp	CVS	$ 75,927.20	0.31%	2.80%	11.66%	14.63%	0.0452%
Chevron Corp	CVX	$ 225,664.64	0.92%	3.81%	7.02%	10.96%	0.1006%
Concho Resources Inc	CXO	$ 30,125.64	0.12%	0.00%	30.75%	30.75%	0.0377%
Dominion Energy Inc	D	$ 46,659.26	0.19%	4.68%	5.60%	10.41%	0.0197%
Delta Air Lines Inc	DAL	$ 35,686.45	0.15%	2.50%	14.35%	17.02%	0.0247%
Deere & Co	DE	$ 47,742.78	0.19%	1.68%	7.33%	9.08%	0.0176%
Discover Financial Services	DFS	$ 25,541.75	0.10%	2.02%	10.17%	12.29%	0.0128%
Dollar General Corp	DG	$ 27,817.38	0.11%	1.10%	15.26%	16.44%	0.0186%
Quest Diagnostics Inc	DGX	$ 13,700.83	0.06%	1.93%	9.20%	11.22%	0.0063%
DR Horton Inc	DHI	$ 14,189.09	0.06%	1.32%	20.48%	21.94%	0.0127%
Danaher Corp	DHR	$ 72,340.66	0.29%	0.60%	7.13%	7.75%	0.0228%
Walt Disney Co/The	DIS	$ 167,478.39	0.68%	1.50%	12.98%	14.57%	0.0993%
Discovery Inc	DISCA	$ 21,617.15	N/A	0.00%	N/A	N/A	N/A
DISH Network Corp	DISH	$ 15,390.64	0.06%	0.00%	-12.71%	-12.71%	-0.0080%
Digital Realty Trust Inc	DLR	$ 22,948.81	0.09%	3.74%	7.28%	11.15%	0.0104%
Dollar Tree Inc	DLTR	$ 19,302.27	0.08%	0.00%	11.36%	11.36%	0.0089%
Dover Corp	DOV	$ 12,138.28	0.05%	2.34%	12.50%	14.99%	0.0074%
Duke Realty Corp	DRE	$ 9,578.41	0.04%	3.01%	5.34%	8.43%	0.0033%
Darden Restaurants Inc	DRI	$ 13,250.03	0.05%	2.81%	10.54%	13.50%	0.0073%
DTE Energy Co	DTE	$ 19,988.56	0.08%	3.23%	6.03%	9.36%	0.0076%
Duke Energy Corp	DUK	$ 56,981.25	0.23%	4.57%	5.04%	9.73%	0.0225%
DaVita Inc	DVA	$ 11,504.42	0.05%	0.00%	18.00%	18.00%	0.0084%
Devon Energy Corp	DVN	$ 18,637.34	0.08%	0.86%	14.46%	15.38%	0.0117%
DowDuPont Inc	DWDP	$ 137,658.10	0.56%	2.76%	8.37%	11.24%	0.0629%
DXC Technology Co	DXC	$ 24,646.55	0.10%	0.87%	6.36%	7.25%	0.0073%
Electronic Arts Inc	EA	$ 32,341.22	0.13%	0.00%	15.20%	15.20%	0.0200%
eBay Inc	EBAY	$ 31,388.51	0.13%	0.00%	10.21%	10.21%	0.0130%
Ecolab Inc	ECL	$ 42,174.16	0.17%	1.14%	13.03%	14.24%	0.0244%
Consolidated Edison Inc	ED	$ 23,404.28	0.10%	3.80%	3.60%	7.47%	0.0071%
Equifax Inc	EFX	$ 14,816.72	0.06%	1.27%	7.43%	8.75%	0.0053%
Edison International	EIX	$ 22,366.94	0.09%	3.53%	5.40%	9.03%	0.0082%
Estee Lauder Cos Inc/The	EL	$ 46,288.58	0.19%	1.30%	16.32%	17.73%	0.0334%
Eastman Chemical Co	EMN	$ 11,654.19	0.05%	2.72%	5.90%	8.70%	0.0041%
Emerson Electric Co	EMR	$ 45,199.24	0.18%	2.70%	11.20%	14.04%	0.0258%
EOG Resources Inc	EOG	$ 70,766.75	0.29%	0.64%	12.14%	12.83%	0.0369%
Equinix Inc	EQIX	$ 31,480.41	0.13%	2.29%	19.55%	22.06%	0.0282%

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 130 of 176

Company	Ticker	Market Capitalization	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est.	DCF Result	Weighted DCF Result
Equity Residential	EQR	$ 23,080.23	0.09%	3.42%	5.69%	9.21%	0.0086%
EQT Corp	EQT	$ 11,985.60	0.05%	0.26%	17.50%	17.79%	0.0087%
Eversource Energy	ES	$ 19,494.81	0.08%	3.29%	6.03%	9.42%	0.0075%
Express Scripts Holding Co	ESRX	$ 53,012.57	0.22%	0.00%	6.60%	6.60%	0.0142%
Essex Property Trust Inc	ESS	$ 15,760.88	0.06%	3.09%	5.94%	9.13%	0.0059%
E*TRADE Financial Corp	ETFC	$ 12,931.82	0.05%	0.00%	28.57%	28.57%	0.0150%
Eaton Corp PLC	ETN	$ 34,564.34	0.14%	3.28%	8.92%	12.35%	0.0174%
Entergy Corp	ETR	$ 14,712.56	0.06%	4.42%	2.83%	7.30%	0.0044%
Evergy Inc	EVRG	$ 15,111.28	0.06%	3.37%	8.19%	11.70%	0.0072%
Edwards Lifesciences Corp	EW	$ 30,023.86	0.12%	0.00%	14.00%	14.00%	0.0171%
Exelon Corp	EXC	$ 41,447.06	0.17%	3.22%	4.45%	7.74%	0.0131%
Expeditors International of Washington I	EXPD	$ 11,663.05	0.05%	1.35%	11.60%	13.02%	0.0062%
Expedia Group Inc	EXPE	$ 17,718.92	0.07%	1.03%	14.23%	15.32%	0.0110%
Extra Space Storage Inc	EXR	$ 10,734.97	0.04%	3.93%	5.46%	9.49%	0.0041%
Ford Motor Co	F	$ 34,436.68	0.14%	7.63%	-7.52%	-0.18%	-0.0003%
Fastenal Co	FAST	$ 14,947.04	0.06%	2.94%	17.50%	20.70%	0.0126%
Facebook Inc	FB	$ 443,881.00	1.81%	0.00%	21.09%	21.09%	0.3807%
Fortune Brands Home & Security Inc	FBHS	$ 6,783.45	0.03%	1.66%	12.79%	14.55%	0.0040%
Freeport-McMoRan Inc	FCX	$ 18,460.30	0.08%	1.44%	-16.60%	-15.28%	-0.0115%
FedEx Corp	FDX	$ 58,237.00	0.24%	1.17%	15.60%	16.86%	0.0399%
FirstEnergy Corp	FE	$ 18,104.30	0.07%	3.87%	-0.35%	3.51%	0.0026%
F5 Networks Inc	FFIV	$ 10,201.06	0.04%	0.00%	10.27%	10.27%	0.0043%
Fidelity National Information Services I	FIS	$ 33,664.66	0.14%	1.23%	4.40%	5.66%	0.0077%
Fiserv Inc	FISV	$ 31,236.08	0.13%	0.00%	11.00%	11.00%	0.0140%
Fifth Third Bancorp	FITB	$ 17,884.67	0.07%	2.83%	5.65%	8.56%	0.0062%
Foot Locker Inc	FL	$ 5,710.33	0.02%	2.77%	4.91%	7.75%	0.0018%
FLIR Systems Inc	FLIR	$ 7,737.38	N/A	1.13%	N/A	N/A	N/A
Fluor Corp	FLR	$ 6,568.31	0.03%	1.80%	26.17%	28.21%	0.0075%
Flowserve Corp	FLS	$ 6,547.86	0.03%	1.54%	19.90%	21.59%	0.0057%
FleetCor Technologies Inc	FLT	$ 18,407.80	N/A	0.00%	N/A	N/A	N/A
FMC Corp	FMC	$ 11,424.67	0.05%	0.83%	23.10%	24.03%	0.0112%
Twenty-First Century Fox Inc	FOX	$ 83,829.81	0.34%	1.00%	9.95%	11.00%	0.0375%
Federal Realty Investment Trust	FRT	$ 8,701.37	0.04%	3.43%	5.17%	8.69%	0.0031%
TechnipFMC PLC	FTI	$ 13,680.44	0.06%	1.72%	9.85%	11.66%	0.0065%
Fortinet Inc	FTNT	$ 13,522.50	0.05%	0.00%	19.30%	19.30%	0.0106%
Fortive Corp	FTV	$ 26,399.53	0.11%	0.36%	14.07%	14.46%	0.0155%
General Dynamics Corp	GD	$ 56,841.59	0.23%	1.90%	11.28%	13.28%	0.0307%
General Electric Co	GE	$ 107,074.12	0.44%	3.90%	2.63%	6.58%	0.0287%
Gilead Sciences Inc	GILD	$ 95,397.70	0.39%	3.10%	5.89%	9.08%	0.0352%
General Mills Inc	GIS	$ 25,697.51	0.10%	4.61%	6.43%	11.19%	0.0117%
Corning Inc	GLW	$ 26,025.78	0.11%	2.24%	8.98%	11.32%	0.0120%
General Motors Co	GM	$ 44,852.14	0.18%	4.80%	10.78%	15.83%	0.0289%
Alphabet Inc	GOOG	$ 775,629.81	3.15%	0.00%	18.22%	18.22%	0.5748%
Genuine Parts Co	GPC	$ 13,919.50	0.06%	3.01%	5.68%	8.78%	0.0050%
Global Payments Inc	GPN	$ 18,564.65	0.08%	0.03%	17.00%	17.04%	0.0129%
Gap Inc/The	GPS	$ 10,260.17	0.04%	3.63%	10.22%	14.04%	0.0059%
Garmin Ltd	GRMN	$ 11,816.80	0.05%	3.35%	5.98%	9.43%	0.0045%
Goldman Sachs Group Inc/The	GS	$ 83,870.76	0.34%	1.49%	12.12%	13.70%	0.0467%
Goodyear Tire & Rubber Co/The	GT	$ 4,880.15	N/A	2.62%	N/A	N/A	N/A
WW Grainger Inc	GWW	$ 17,487.93	0.07%	1.78%	14.87%	16.78%	0.0119%
Halliburton Co	HAL	$ 34,843.87	0.14%	1.82%	74.00%	76.49%	0.1084%
Hasbro Inc	HAS	$ 12,479.37	0.05%	2.54%	8.13%	10.78%	0.0055%
Huntington Bancshares Inc/OH	HBAN	$ 15,867.74	0.06%	3.47%	13.36%	17.06%	0.0110%
Hanesbrands Inc	HBI	$ 5,897.90	0.02%	3.67%	5.04%	8.80%	0.0021%
HCA Healthcare Inc	HCA	$ 46,321.72	0.19%	1.05%	13.58%	14.70%	0.0277%
HCP Inc	HCP	$ 11,609.56	0.05%	5.99%	3.20%	9.28%	0.0044%
Home Depot Inc/The	HD	$ 220,212.28	0.90%	2.12%	13.27%	15.53%	0.1391%
Hess Corp	HES	$ 19,827.37	0.08%	1.57%	-21.61%	-20.21%	-0.0163%
HollyFrontier Corp	HFC	$ 11,710.38	0.05%	2.01%	7.14%	9.23%	0.0044%
Hartford Financial Services Group Inc/Th	HIG	$ 16,770.43	0.07%	2.33%	9.50%	11.94%	0.0081%
Huntington Ingalls Industries Inc	HII	$ 9,800.78	0.04%	1.28%	27.50%	28.95%	0.0115%
Hilton Worldwide Holdings Inc	HLT	$ 21,952.46	0.09%	0.82%	11.20%	12.07%	0.0108%
Harley-Davidson Inc	HOG	$ 6,815.41	0.03%	3.62%	10.00%	13.80%	0.0038%
Hologic Inc	HOLX	$ 10,895.80	0.04%	0.00%	8.74%	8.74%	0.0039%
Honeywell International Inc	HON	$ 115,995.76	0.47%	1.95%	15.22%	17.32%	0.0817%
Helmerich & Payne Inc	HP	$ 7,561.79	N/A	4.05%	N/A	N/A	N/A
Hewlett Packard Enterprise Co	HPE	$ 22,692.82	0.09%	2.48%	9.30%	11.89%	0.0110%
HP Inc	HPQ	$ 37,455.61	0.15%	2.36%	9.08%	11.55%	0.0176%
H&R Block Inc	HRB	$ 5,279.83	0.02%	3.88%	10.00%	14.07%	0.0030%
Hormel Foods Corp	HRL	$ 21,159.45	0.09%	1.87%	5.00%	6.92%	0.0060%
Harris Corp	HRS	$ 18,198.24	N/A	1.66%	N/A	N/A	N/A
Henry Schein Inc	HSIC	$ 12,853.71	0.05%	0.00%	9.96%	9.96%	0.0052%
Host Hotels & Resorts Inc	HST	$ 14,225.37	0.06%	4.33%	2.97%	7.36%	0.0043%
Hershey Co/The	HSY	$ 21,645.03	0.09%	2.67%	9.00%	11.79%	0.0104%
Humana Inc	HUM	$ 43,856.98	0.18%	0.63%	14.50%	15.17%	0.0271%
International Business Machines Corp	IBM	$ 128,563.40	0.52%	4.42%	4.25%	8.76%	0.0458%
Intercontinental Exchange Inc	ICE	$ 42,032.90	0.17%	1.31%	8.82%	10.18%	0.0174%
IDEXX Laboratories Inc	IDXX	$ 19,259.56	0.08%	0.00%	21.88%	21.88%	0.0171%
International Flavors & Fragrances Inc	IFF	$ 13,963.12	0.06%	2.16%	9.20%	11.46%	0.0065%
Illumina Inc	ILMN	$ 47,288.43	0.19%	0.00%	19.34%	19.34%	0.0372%
Incyte Corp	INCY	$ 13,298.85	0.05%	0.00%	52.58%	52.58%	0.0284%
IHS Markit Ltd	INFO	$ 20,433.53	0.08%	0.00%	11.70%	11.70%	0.0097%
Intel Corp	INTC	$ 206,941.68	0.84%	2.54%	9.36%	12.01%	0.1011%
Intuit Inc	INTU	$ 54,791.82	0.22%	0.84%	16.11%	17.02%	0.0379%
International Paper Co	IP	$ 17,446.83	0.07%	4.54%	7.90%	12.62%	0.0090%
Interpublic Group of Cos Inc/The	IPG	$ 8,224.52	0.03%	3.95%	5.82%	9.88%	0.0033%
IPG Photonics Corp	IPGP	$ 7,396.39	0.03%	0.00%	12.00%	12.00%	0.0036%
IQVIA Holdings Inc	IQV	$ 25,280.82	0.10%	0.00%	13.87%	13.87%	0.0143%

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 131 of 176

Company	Ticker	Market Capitalization	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est.	DCF Result	Weighted DCF Result
Ingersoll-Rand PLC	IR	$ 23,829.37	0.10%	2.02%	11.44%	13.57%	0.0132%
Iron Mountain Inc	IRM	$ 9,039.35	0.04%	7.44%	10.10%	17.91%	0.0066%
Intuitive Surgical Inc	ISRG	$ 60,515.99	0.25%	0.00%	14.02%	14.02%	0.0345%
Gartner Inc	IT	$ 13,512.82	0.05%	0.00%	15.00%	15.00%	0.0082%
Illinois Tool Works Inc	ITW	$ 43,820.57	0.18%	2.60%	9.99%	12.73%	0.0227%
Invesco Ltd	IVZ	$ 8,192.33	0.03%	6.01%	6.05%	12.24%	0.0041%
JB Hunt Transport Services Inc	JBHT	$ 11,950.21	0.05%	0.88%	13.46%	14.40%	0.0070%
Johnson Controls International plc	JCI	$ 30,485.44	0.12%	3.16%	10.30%	13.62%	0.0169%
Jacobs Engineering Group Inc	JEC	$ 10,217.10	0.04%	0.73%	17.01%	17.80%	0.0074%
Jefferies Financial Group Inc	JEF	$ 6,889.97	0.03%	2.25%	18.00%	20.45%	0.0057%
Johnson & Johnson	JNJ	$ 359,140.55	1.46%	2.68%	7.49%	10.27%	0.1499%
Juniper Networks Inc	JNPR	$ 9,419.80	0.04%	2.53%	9.40%	12.05%	0.0046%
JPMorgan Chase & Co	JPM	$ 359,446.56	1.46%	2.53%	9.10%	11.74%	0.1716%
Nordstrom Inc	JWN	$ 10,365.09	0.04%	2.43%	8.43%	10.96%	0.0046%
Kellogg Co	K	$ 23,556.41	0.10%	3.26%	8.33%	11.72%	0.0112%
KeyCorp	KEY	$ 19,620.47	0.08%	3.03%	16.21%	19.49%	0.0155%
Kraft Heinz Co/The	KHC	$ 66,127.90	0.27%	4.69%	5.27%	10.08%	0.0271%
Kimco Realty Corp	KIM	$ 6,240.67	0.03%	7.62%	5.24%	13.06%	0.0033%
KLA-Tencor Corp	KLAC	$ 14,429.07	0.06%	3.19%	7.37%	10.68%	0.0063%
Kimberly-Clark Corp	KMB	$ 37,944.11	0.15%	3.66%	6.10%	9.88%	0.0152%
Kinder Morgan Inc/DE	KMI	$ 38,641.58	0.16%	4.51%	12.00%	16.78%	0.0264%
CarMax Inc	KMX	$ 11,849.80	0.05%	0.00%	13.12%	13.12%	0.0063%
Coca-Cola Co/The	KO	$ 190,020.57	0.77%	3.44%	7.70%	11.28%	0.0871%
Michael Kors Holdings Ltd	KORS	$ 9,498.35	0.04%	0.00%	3.66%	3.66%	0.0014%
Kroger Co/The	KR	$ 21,466.51	0.09%	1.99%	6.30%	8.36%	0.0073%
Kohl's Corp	KSS	$ 12,111.69	0.05%	3.40%	7.23%	10.75%	0.0053%
Kansas City Southern	KSU	$ 10,478.46	0.04%	1.31%	8.70%	10.06%	0.0043%
Loews Corp	L	$ 14,787.96	N/A	0.53%	N/A	N/A	N/A
L Brands Inc	LB	$ 8,631.49	0.04%	7.66%	9.33%	17.35%	0.0061%
Leggett & Platt Inc	LEG	$ 5,065.84	0.02%	3.83%	10.00%	14.02%	0.0029%
Lennar Corp	LEN	$ 13,989.11	0.06%	0.37%	20.93%	21.34%	0.0121%
Laboratory Corp of America Holdings	LH	$ 17,308.73	0.07%	0.00%	8.95%	8.95%	0.0063%
LKQ Corp	LKQ	$ 9,074.87	0.04%	0.00%	13.15%	13.15%	0.0049%
L3 Technologies Inc	LLL	$ 15,335.19	0.06%	1.66%	12.64%	14.40%	0.0090%
Eli Lilly & Co	LLY	$ 118,654.18	0.48%	2.04%	11.86%	14.02%	0.0676%
Lockheed Martin Corp	LMT	$ 93,299.97	0.38%	2.50%	21.41%	24.17%	0.0917%
Lincoln National Corp	LNC	$ 13,910.89	N/A	2.09%	N/A	N/A	N/A
Alliant Energy Corp	LNT	$ 10,104.33	0.04%	3.16%	5.86%	9.11%	0.0037%
Lowe's Cos Inc	LOW	$ 85,159.88	0.35%	1.73%	15.22%	17.08%	0.0592%
Lam Research Corp	LRCX	$ 21,869.91	0.09%	3.10%	13.55%	16.86%	0.0150%
Southwest Airlines Co	LUV	$ 32,879.84	0.13%	1.02%	7.35%	8.41%	0.0112%
LyondellBasell Industries NV	LYB	$ 37,959.09	0.15%	4.10%	8.00%	12.27%	0.0189%
Macy's Inc	M	$ 10,246.75	0.04%	4.66%	0.50%	5.17%	0.0022%
Mastercard Inc	MA	$ 212,072.76	0.86%	0.47%	21.33%	21.85%	0.1885%
Mid-America Apartment Communities Inc	MAA	$ 10,767.56	N/A	3.93%	N/A	N/A	N/A
Macerich Co/The	MAC	$ 7,010.23	0.03%	6.03%	6.72%	12.96%	0.0037%
Marriott International Inc/MD	MAR	$ 40,767.64	0.17%	1.32%	14.46%	15.88%	0.0263%
Masco Corp	MAS	$ 9,928.42	0.04%	1.33%	15.67%	17.11%	0.0069%
Mattel Inc	MAT	$ 4,931.71	0.02%	0.00%	10.00%	10.00%	0.0020%
McDonald's Corp	MCD	$ 127,091.62	0.52%	2.52%	8.69%	11.32%	0.0585%
Microchip Technology Inc	MCHP	$ 16,079.18	0.07%	2.14%	14.05%	16.34%	0.0107%
McKesson Corp	MCK	$ 26,128.05	0.11%	1.15%	5.80%	6.98%	0.0074%
Moody's Corp	MCO	$ 29,922.97	0.12%	1.15%	8.00%	9.19%	0.0112%
Mondelez International Inc	MDLZ	$ 60,304.99	0.25%	2.35%	9.91%	12.37%	0.0303%
Medtronic PLC	MDT	$ 127,879.90	0.52%	2.09%	7.84%	10.02%	0.0521%
MetLife Inc	MET	$ 43,603.75	0.18%	3.79%	13.58%	17.63%	0.0313%
MGM Resorts International	MGM	$ 14,227.51	0.06%	1.81%	3.47%	5.32%	0.0031%
Mohawk Industries Inc	MHK	$ 11,647.00	0.05%	0.00%	7.82%	7.82%	0.0037%
McCormick & Co Inc/MD	MKC	$ 17,487.18	0.07%	1.56%	8.90%	10.53%	0.0075%
Martin Marietta Materials Inc	MLM	$ 10,685.57	0.04%	1.06%	13.98%	15.11%	0.0066%
Marsh & McLennan Cos Inc	MMC	$ 40,186.27	0.16%	2.16%	14.81%	17.13%	0.0280%
3M Co	MMM	$ 116,284.39	0.47%	2.74%	8.70%	11.55%	0.0546%
Monster Beverage Corp	MNST	$ 29,443.96	0.12%	0.00%	17.00%	17.00%	0.0204%
Altria Group Inc	MO	$ 113,223.61	0.46%	4.93%	4.87%	9.92%	0.0457%
Mosaic Co/The	MOS	$ 12,677.71	0.05%	0.30%	7.00%	7.31%	0.0038%
Marathon Petroleum Corp	MPC	$ 55,335.65	N/A	2.30%	N/A	N/A	N/A
Merck & Co Inc	MRK	$ 185,661.46	0.75%	2.78%	7.64%	10.52%	0.0794%
Marathon Oil Corp	MRO	$ 17,527.11	0.07%	0.97%	5.00%	6.00%	0.0043%
Morgan Stanley	MS	$ 75,776.22	0.31%	2.55%	12.85%	15.56%	0.0479%
MSCI Inc	MSCI	$ 13,683.82	0.06%	1.23%	13.45%	14.77%	0.0082%
Microsoft Corp	MSFT	$ 840,206.57	3.42%	1.65%	11.14%	12.88%	0.4400%
Motorola Solutions Inc	MSI	$ 19,510.96	0.08%	1.75%	7.45%	9.27%	0.0074%
M&T Bank Corp	MTB	$ 22,793.73	0.09%	2.24%	12.70%	15.08%	0.0140%
Mettler-Toledo International Inc	MTD	$ 14,073.10	0.06%	0.00%	11.95%	11.95%	0.0068%
Micron Technology Inc	MU	$ 49,257.16	0.20%	0.34%	-2.10%	-1.77%	-0.0035%
Mylan NV	MYL	$ 16,554.86	0.07%	0.00%	6.07%	6.07%	0.0041%
Noble Energy Inc	NBL	$ 15,271.38	0.06%	1.35%	40.40%	42.03%	0.0261%
Norwegian Cruise Line Holdings Ltd	NCLH	$ 11,228.44	0.05%	0.15%	20.32%	20.48%	0.0094%
Nasdaq Inc	NDAQ	$ 13,163.97	0.05%	2.13%	9.57%	11.80%	0.0063%
NextEra Energy Inc	NEE	$ 79,870.97	0.32%	2.62%	8.38%	11.11%	0.0361%
Newmont Mining Corp	NEM	$ 17,090.10	0.07%	1.75%	-3.00%	-1.28%	-0.0009%
Netflix Inc	NFLX	$ 147,863.95	0.60%	0.00%	41.07%	41.07%	0.2469%
Newfield Exploration Co	NFX	$ 5,036.41	0.02%	0.00%	19.17%	19.17%	0.0039%
NiSource Inc	NI	$ 8,825.42	0.04%	3.18%	5.63%	8.90%	0.0032%
NIKE Inc	NKE	$ 120,553.31	0.49%	1.12%	18.11%	19.33%	0.0948%
Nektar Therapeutics	NKTR	$ 8,435.45	N/A	0.00%	N/A	N/A	N/A
Nielsen Holdings PLC	NLSN	$ 9,288.68	0.04%	5.33%	12.00%	17.65%	0.0067%
Northrop Grumman Corp	NOC	$ 52,649.70	0.21%	1.56%	15.18%	16.86%	0.0361%

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 132 of 176

Company	Ticker	Market Capitalization	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est.	DCF Result	Weighted DCF Result
National Oilwell Varco Inc	NOV	$ 16,035.58	0.07%	0.48%	41.00%	41.58%	0.0271%
NRG Energy Inc	NRG	$ 11,035.72	0.04%	0.33%	42.01%	42.41%	0.0190%
Norfolk Southern Corp	NSC	$ 47,658.27	0.19%	1.73%	10.20%	12.02%	0.0233%
NetApp Inc	NTAP	$ 19,942.91	0.08%	2.08%	15.95%	18.19%	0.0148%
Northern Trust Corp	NTRS	$ 22,116.06	0.09%	1.95%	16.31%	18.42%	0.0166%
Nucor Corp	NUE	$ 19,236.85	0.08%	2.50%	5.65%	8.22%	0.0064%
NVIDIA Corp	NVDA	$ 149,896.32	0.61%	0.25%	11.23%	11.49%	0.0700%
Newell Brands Inc	NWL	$ 8,278.20	0.03%	5.25%	2.76%	8.08%	0.0027%
News Corp	NWS	$ 7,573.41	0.03%	1.59%	26.30%	28.10%	0.0087%
Realty Income Corp	O	$ 16,198.92	0.07%	4.71%	4.36%	9.17%	0.0060%
ONEOK Inc	OKE	$ 26,739.44	0.11%	4.99%	26.88%	32.55%	0.0354%
Omnicom Group Inc	OMC	$ 15,391.97	0.06%	3.55%	5.53%	9.18%	0.0057%
Oracle Corp	ORCL	$ 179,505.68	0.73%	1.56%	7.90%	9.52%	0.0695%
O'Reilly Automotive Inc	ORLY	$ 27,354.36	0.11%	0.00%	15.47%	15.47%	0.0172%
Occidental Petroleum Corp	OXY	$ 58,852.96	0.24%	4.03%	14.30%	18.62%	0.0446%
Paychex Inc	PAYX	$ 24,510.93	0.10%	3.34%	9.13%	12.62%	0.0126%
People's United Financial Inc	PBCT	$ 6,056.34	0.02%	4.34%	2.00%	6.38%	0.0016%
PACCAR Inc	PCAR	$ 21,779.25	0.09%	3.72%	6.03%	9.86%	0.0087%
PG&E Corp	PCG	$ 24,445.74	0.10%	0.30%	5.05%	5.35%	0.0053%
Public Service Enterprise Group Inc	PEG	$ 27,125.76	0.11%	3.35%	7.06%	10.53%	0.0116%
PepsiCo Inc	PEP	$ 148,609.88	0.60%	3.42%	6.78%	10.32%	0.0624%
Pfizer Inc	PFE	$ 256,643.15	1.04%	3.11%	6.76%	9.97%	0.1041%
Principal Financial Group Inc	PFG	$ 15,701.05	0.06%	3.81%	7.93%	11.89%	0.0076%
Procter & Gamble Co/The	PG	$ 196,792.93	0.80%	3.71%	7.07%	10.92%	0.0874%
Progressive Corp/The	PGR	$ 38,986.07	0.16%	1.68%	9.20%	10.95%	0.0174%
Parker-Hannifin Corp	PH	$ 22,153.20	0.09%	1.79%	9.57%	11.44%	0.0103%
PulteGroup Inc	PHM	$ 6,501.18	0.03%	1.60%	19.83%	21.59%	0.0057%
Packaging Corp of America	PKG	$ 8,320.54	0.03%	3.07%	10.00%	13.23%	0.0045%
PerkinElmer Inc	PKI	$ 9,629.43	0.04%	0.33%	16.35%	16.70%	0.0065%
Prologis Inc	PLD	$ 39,369.84	0.16%	3.07%	6.81%	9.98%	0.0160%
Philip Morris International Inc	PM	$ 127,951.46	0.52%	5.44%	9.77%	15.48%	0.0805%
PNC Financial Services Group Inc/The	PNC	$ 57,694.21	0.23%	2.75%	9.10%	11.98%	0.0281%
Pentair PLC	PNR	$ 6,840.75	0.03%	2.17%	11.01%	13.29%	0.0037%
Pinnacle West Capital Corp	PNW	$ 9,125.89	0.04%	3.46%	4.56%	8.10%	0.0030%
PPG Industries Inc	PPG	$ 23,013.50	0.09%	1.97%	8.06%	10.10%	0.0095%
PPL Corp	PPL	$ 21,162.01	0.09%	5.42%	8.10%	13.74%	0.0118%
Perrigo Co PLC	PRGO	$ 9,600.17	0.04%	1.03%	4.00%	5.05%	0.0020%
Prudential Financial Inc	PRU	$ 40,765.92	0.17%	3.64%	6.00%	9.75%	0.0162%
Public Storage	PSA	$ 34,299.23	0.14%	4.10%	4.56%	8.76%	0.0122%
Phillips 66	PSX	$ 50,818.16	0.21%	2.84%	5.50%	8.42%	0.0174%
PVH Corp	PVH	$ 9,669.98	0.04%	0.12%	10.98%	11.11%	0.0044%
Quanta Services Inc	PWR	$ 4,678.86	0.02%	0.00%	16.50%	16.50%	0.0031%
Praxair Inc	PX	$ 44,930.84	0.18%	2.12%	13.90%	16.17%	0.0295%
Pioneer Natural Resources Co	PXD	$ 29,571.43	0.12%	0.15%	27.13%	27.30%	0.0328%
PayPal Holdings Inc	PYPL	$ 93,545.64	0.38%	0.00%	19.34%	19.34%	0.0736%
QUALCOMM Inc	QCOM	$ 94,449.15	0.38%	3.70%	12.32%	16.24%	0.0624%
Qorvo Inc	QRVO	$ 9,131.75	0.04%	0.00%	12.62%	12.62%	0.0047%
Royal Caribbean Cruises Ltd	RCL	$ 24,877.88	0.10%	2.09%	15.60%	17.85%	0.0181%
Everest Re Group Ltd	RE	$ 8,701.80	0.04%	2.46%	10.00%	12.59%	0.0045%
Regency Centers Corp	REG	$ 10,471.20	0.04%	3.60%	5.65%	9.36%	0.0040%
Regeneron Pharmaceuticals Inc	REGN	$ 41,510.93	0.17%	0.00%	14.03%	14.03%	0.0237%
Regions Financial Corp	RF	$ 19,061.71	0.08%	2.68%	12.14%	14.98%	0.0116%
Robert Half International Inc	RHI	$ 7,821.80	0.03%	1.75%	17.10%	19.00%	0.0060%
Red Hat Inc	RHT	$ 21,558.54	0.09%	0.00%	18.93%	18.93%	0.0166%
Raymond James Financial Inc	RJF	$ 12,817.76	0.05%	1.21%	17.00%	18.32%	0.0095%
Ralph Lauren Corp	RL	$ 9,850.82	0.04%	2.02%	6.87%	8.96%	0.0036%
ResMed Inc	RMD	$ 14,732.93	0.06%	1.48%	12.15%	13.72%	0.0082%
Rockwell Automation Inc	ROK	$ 21,281.65	0.09%	1.98%	12.34%	14.44%	0.0125%
Rollins Inc	ROL	$ 12,250.51	0.05%	1.18%	10.00%	11.23%	0.0056%
Roper Technologies Inc	ROP	$ 28,850.93	0.12%	0.58%	13.40%	14.01%	0.0164%
Ross Stores Inc	ROST	$ 35,794.57	0.15%	0.92%	10.43%	11.39%	0.0166%
Republic Services Inc	RSG	$ 22,980.05	0.09%	2.00%	11.92%	14.04%	0.0131%
Raytheon Co	RTN	$ 54,681.49	0.22%	1.80%	14.87%	16.80%	0.0374%
SBA Communications Corp	SBAC	$ 16,952.17	0.07%	0.00%	27.15%	27.15%	0.0187%
Starbucks Corp	SBUX	$ 76,156.70	0.31%	2.28%	14.16%	16.60%	0.0514%
SCANA Corp	SCG	$ 5,602.33	0.02%	2.13%	-2.79%	-0.69%	-0.0002%
Charles Schwab Corp/The	SCHW	$ 66,215.59	0.27%	0.85%	21.69%	22.63%	0.0609%
Sealed Air Corp	SEE	$ 5,523.49	0.02%	1.88%	3.89%	5.80%	0.0013%
Sherwin-Williams Co/The	SHW	$ 38,003.27	0.15%	0.84%	11.57%	12.46%	0.0193%
SVB Financial Group	SIVB	$ 15,432.52	0.06%	0.00%	8.50%	8.50%	0.0053%
JM Smucker Co/The	SJM	$ 11,733.17	0.05%	3.19%	4.13%	7.38%	0.0035%
Schlumberger Ltd	SLB	$ 82,119.77	0.33%	3.37%	20.00%	23.71%	0.0792%
SL Green Realty Corp	SLG	$ 7,930.21	0.03%	3.62%	5.28%	8.99%	0.0029%
Snap-on Inc	SNA	$ 9,511.10	0.04%	2.05%	7.95%	10.08%	0.0039%
Synopsys Inc	SNPS	$ 13,093.58	N/A	0.00%	N/A	N/A	N/A
Southern Co/The	SO	$ 44,196.05	0.18%	5.48%	4.00%	9.59%	0.0172%
Simon Property Group Inc	SPG	$ 52,931.88	0.22%	4.63%	6.18%	10.96%	0.0236%
S&P Global Inc	SPGI	$ 46,897.21	0.19%	1.07%	11.60%	12.73%	0.0243%
Stericycle Inc	SRCL	$ 4,513.40	0.02%	0.15%	10.00%	10.16%	0.0019%
Sempra Energy	SRE	$ 31,455.93	0.13%	3.11%	20.29%	23.72%	0.0303%
SunTrust Banks Inc	STI	$ 28,708.17	0.12%	2.90%	12.64%	15.73%	0.0184%
State Street Corp	STT	$ 30,907.18	0.13%	2.19%	11.92%	14.23%	0.0179%
Seagate Technology PLC	STX	$ 12,377.29	0.05%	5.90%	-2.44%	3.39%	0.0017%
Constellation Brands Inc	STZ	$ 42,662.48	0.17%	1.31%	11.30%	12.68%	0.0220%
Stanley Black & Decker Inc	SWK	$ 19,856.08	0.08%	1.98%	10.65%	12.74%	0.0103%
Skyworks Solutions Inc	SWKS	$ 15,608.98	0.06%	1.55%	12.26%	13.90%	0.0088%
Synchrony Financial	SYF	$ 22,102.07	0.09%	2.40%	7.35%	9.84%	0.0088%
Stryker Corp	SYK	$ 63,967.33	0.26%	1.08%	8.44%	9.57%	0.0249%

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 133 of 176

Company	Ticker	Market Capitalization	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est.	DCF Result	Weighted DCF Result
Symantec Corp	SYMC	$ 12,175.94	0.05%	1.56%	8.34%	9.97%	0.0049%
Sysco Corp	SYY	$ 35,833.84	0.15%	2.19%	11.37%	13.68%	0.0199%
AT&T Inc	T	$ 234,199.50	0.95%	6.22%	4.85%	11.22%	0.1069%
Molson Coors Brewing Co	TAP	$ 12,893.01	0.05%	2.82%	2.62%	5.48%	0.0029%
TransDigm Group Inc	TDG	$ 17,019.59	0.07%	0.00%	14.28%	14.28%	0.0099%
TE Connectivity Ltd	TEL	$ 27,496.88	0.11%	2.11%	9.25%	11.46%	0.0128%
Target Corp	TGT	$ 44,534.56	0.18%	3.05%	7.15%	10.32%	0.0187%
Tiffany & Co	TIF	$ 13,812.86	0.06%	1.90%	12.54%	14.56%	0.0082%
TJX Cos Inc/The	TJX	$ 67,717.58	0.28%	1.44%	11.10%	12.62%	0.0347%
Torchmark Corp	TMK	$ 9,430.67	0.04%	0.76%	13.17%	13.98%	0.0054%
Thermo Fisher Scientific Inc	TMO	$ 93,211.08	0.38%	0.28%	11.00%	11.30%	0.0428%
Tapestry Inc	TPR	$ 12,691.57	0.05%	3.13%	10.96%	14.26%	0.0074%
TripAdvisor Inc	TRIP	$ 6,237.77	0.03%	0.00%	18.29%	18.29%	0.0046%
T Rowe Price Group Inc	TROW	$ 24,370.14	0.10%	2.78%	12.49%	15.45%	0.0153%
Travelers Cos Inc/The	TRV	$ 33,099.03	0.13%	2.47%	17.75%	20.44%	0.0275%
Tractor Supply Co	TSCO	$ 10,556.81	0.04%	1.39%	13.54%	15.03%	0.0065%
Tyson Foods Inc	TSN	$ 23,985.19	0.10%	1.93%	5.90%	7.88%	0.0077%
Total System Services Inc	TSS	$ 17,136.35	0.07%	0.55%	14.62%	15.21%	0.0106%
Take-Two Interactive Software Inc	TTWO	$ 14,689.53	0.06%	0.00%	10.00%	10.00%	0.0060%
Twitter Inc	TWTR	$ 21,212.11	0.09%	0.00%	45.77%	45.77%	0.0395%
Texas Instruments Inc	TXN	$ 98,279.20	0.40%	2.52%	11.05%	13.71%	0.0548%
Textron Inc	TXT	$ 16,164.09	0.07%	0.13%	13.71%	13.85%	0.0091%
Under Armour Inc	UA	$ 7,968.71	0.03%	0.00%	26.97%	26.97%	0.0087%
United Continental Holdings Inc	UAL	$ 21,857.39	0.09%	0.00%	14.24%	14.24%	0.0127%
UDR Inc	UDR	$ 10,195.89	0.04%	3.38%	5.38%	8.85%	0.0037%
Universal Health Services Inc	UHS	$ 11,438.57	0.05%	0.29%	7.93%	8.23%	0.0038%
Ulta Beauty Inc	ULTA	$ 16,475.11	0.07%	0.00%	20.50%	20.50%	0.0137%
UnitedHealth Group Inc	UNH	$ 249,867.71	1.02%	1.33%	13.33%	14.75%	0.1498%
Unum Group	UNM	$ 8,162.08	0.03%	2.59%	9.00%	11.70%	0.0039%
Union Pacific Corp	UNP	$ 112,883.83	0.46%	1.92%	14.20%	16.26%	0.0746%
United Parcel Service Inc	UPS	$ 99,490.26	0.40%	3.12%	8.97%	12.23%	0.0495%
United Rentals Inc	URI	$ 11,409.33	0.05%	0.00%	23.52%	23.52%	0.0109%
US Bancorp	USB	$ 82,739.20	0.34%	2.64%	7.45%	10.19%	0.0343%
United Technologies Corp	UTX	$ 103,716.09	0.42%	2.18%	10.59%	12.89%	0.0544%
Visa Inc	V	$ 284,917.26	1.16%	0.60%	18.18%	18.83%	0.2181%
Varian Medical Systems Inc	VAR	$ 9,639.03	0.04%	0.00%	12.05%	12.05%	0.0047%
VF Corp	VFC	$ 34,662.59	0.14%	2.04%	9.43%	11.57%	0.0163%
Viacom Inc	VIAB	$ 12,795.18	0.05%	2.57%	6.68%	9.34%	0.0049%
Valero Energy Corp	VLO	$ 46,265.84	0.19%	2.96%	17.15%	20.36%	0.0383%
Vulcan Materials Co	VMC	$ 13,357.76	0.05%	1.11%	18.69%	19.91%	0.0108%
Vornado Realty Trust	VNO	$ 12,833.45	0.05%	3.74%	3.88%	7.68%	0.0040%
Verisk Analytics Inc	VRSK	$ 18,905.23	0.08%	0.00%	13.03%	13.03%	0.0100%
VeriSign Inc	VRSN	$ 17,553.84	0.07%	0.00%	10.40%	10.40%	0.0074%
Vertex Pharmaceuticals Inc	VRTX	$ 46,338.13	0.19%	0.00%	64.33%	64.33%	0.1212%
Ventas Inc	VTR	$ 19,001.76	0.08%	5.95%	2.95%	8.99%	0.0069%
Verizon Communications Inc	VZ	$ 222,008.90	0.90%	4.45%	5.54%	10.11%	0.0912%
Waters Corp	WAT	$ 14,010.78	0.06%	0.00%	9.10%	9.10%	0.0052%
Walgreens Boots Alliance Inc	WBA	$ 69,763.59	0.28%	2.36%	10.17%	12.65%	0.0359%
WellCare Health Plans Inc	WCG	$ 15,380.78	0.06%	0.00%	16.54%	16.54%	0.0103%
Western Digital Corp	WDC	$ 15,790.06	0.06%	3.70%	3.52%	7.28%	0.0047%
WEC Energy Group Inc	WEC	$ 21,295.35	0.09%	3.27%	3.23%	6.55%	0.0057%
Welltower Inc	WELL	$ 22,916.91	0.09%	5.65%	7.20%	13.05%	0.0122%
Wells Fargo & Co	WFC	$ 245,521.48	1.00%	3.15%	13.41%	16.77%	0.1674%
Whirlpool Corp	WHR	$ 6,704.89	0.03%	4.44%	9.46%	14.12%	0.0038%
Willis Towers Watson PLC	WLTW	$ 17,954.66	0.07%	1.72%	15.35%	17.20%	0.0126%
Waste Management Inc	WM	$ 37,962.89	0.15%	2.09%	11.61%	13.82%	0.0213%
Williams Cos Inc/The	WMB	$ 32,294.76	0.13%	5.10%	-0.80%	4.28%	0.0056%
Walmart Inc	WMT	$ 277,673.33	1.13%	2.22%	6.29%	8.58%	0.0969%
WestRock Co	WRK	$ 10,870.34	0.04%	4.04%	6.50%	10.67%	0.0047%
Western Union Co/The	WU	$ 8,010.26	0.03%	4.20%	4.20%	8.49%	0.0028%
Weyerhaeuser Co	WY	$ 21,275.64	0.09%	4.72%	7.00%	11.88%	0.0103%
Wynn Resorts Ltd	WYNN	$ 12,665.71	0.05%	2.42%	18.30%	20.94%	0.0108%
Cimarex Energy Co	XEC	$ 8,870.98	0.04%	0.64%	72.92%	73.79%	0.0266%
Xcel Energy Inc	XEL	$ 24,258.00	0.10%	3.19%	5.80%	9.09%	0.0090%
Xilinx Inc	XLNX	$ 19,251.78	0.08%	1.89%	7.57%	9.53%	0.0075%
Exxon Mobil Corp	XOM	$ 344,547.49	1.40%	3.98%	12.33%	16.55%	0.2318%
DENTSPLY SIRONA Inc	XRAY	$ 7,975.51	0.03%	0.97%	6.93%	7.94%	0.0026%
Xerox Corp	XRX	$ 6,433.67	0.03%	3.98%	2.05%	6.07%	0.0016%
Xylem Inc/NY	XYL	$ 12,531.93	0.05%	1.20%	8.60%	9.85%	0.0050%
Yum! Brands Inc	YUM	$ 27,943.17	0.11%	1.63%	12.83%	14.57%	0.0166%
Zimmer Biomet Holdings Inc	ZBH	$ 25,089.79	0.10%	0.79%	3.64%	4.44%	0.0045%
Zions Bancorp NA	ZION	$ 9,374.10	0.04%	2.11%	10.30%	12.52%	0.0048%
Zoetis Inc	ZTS	$ 42,834.14	0.17%	0.56%	15.85%	16.46%	0.0287%
Total Market Capitalization:		24,591,339.31					15.29%

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]

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 134 of 176

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 135 of 176

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

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

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

Company	Ticker	Market Capitalization	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est.	DCF Result	Weighted DCF Result
Broadridge Financial Solutions Inc	BR	$ 14,963.96	0.06%	1.52%	14.00%	15.63%	0.0096%
Berkshire Hathaway Inc	BRK/B	$ -	N/A	0.00%	N/A	N/A	N/A
Boston Scientific Corp	BSX	$ 52,489.78	0.21%	0.00%	17.50%	17.50%	0.0376%
BorgWarner Inc	BWA	$ 8,972.93	0.04%	1.58%	9.00%	10.65%	0.0039%
Boston Properties Inc	BXP	$ 18,389.37	0.08%	3.19%	3.50%	6.75%	0.0051%
Citigroup Inc	C	$ 182,755.80	0.75%	2.48%	8.50%	11.09%	0.0829%
CA Inc	CA	$ 18,207.04	0.07%	2.36%	10.50%	12.98%	0.0097%
Conagra Brands Inc	CAG	$ 13,138.96	0.05%	2.53%	5.00%	7.59%	0.0041%
Cardinal Health Inc	CAH	$ 16,666.49	0.07%	3.56%	11.00%	14.76%	0.0101%
Caterpillar Inc	CAT	$ 93,160.45	0.38%	2.20%	19.00%	21.41%	0.0816%
Chubb Ltd	CB	$ 62,327.11	0.25%	2.17%	9.50%	11.77%	0.0300%
Cboe Global Markets Inc	CBOE	$ 10,698.37	0.04%	1.30%	17.00%	18.41%	0.0081%
CBRE Group Inc	CBRE	$ 14,702.84	0.06%	0.00%	11.50%	11.50%	0.0069%
CBS Corp	CBS	$ 21,119.54	0.09%	1.29%	10.50%	11.86%	0.0102%
Crown Castle International Corp	CCI	$ 44,952.80	0.18%	4.25%	12.00%	16.51%	0.0303%
Carnival Corp	CCL	$ 43,861.59	0.18%	3.24%	12.50%	15.94%	0.0286%
Cadence Design Systems Inc	CDNS	$ 12,279.52	0.05%	0.00%	11.50%	11.50%	0.0058%
Celgene Corp	CELG	$ 62,250.36	0.25%	0.00%	14.50%	14.50%	0.0369%
Cerner Corp	CERN	$ 21,224.76	0.09%	0.00%	9.00%	9.00%	0.0078%
CF Industries Holdings Inc	CF	$ 13,088.10	0.05%	2.23%	47.00%	49.75%	0.0266%
Citizens Financial Group Inc	CFG	$ 18,926.55	0.08%	3.02%	12.50%	15.71%	0.0122%
Church & Dwight Co Inc	CHD	$ 14,285.77	0.06%	1.49%	10.00%	11.56%	0.0068%
CH Robinson Worldwide Inc	CHRW	$ 13,533.09	0.06%	1.89%	10.50%	12.49%	0.0069%
Charter Communications Inc	CHTR	$ 75,281.60	0.31%	0.00%	19.50%	19.50%	0.0600%
Cigna Corp	CI	$ 51,744.05	0.21%	0.02%	13.00%	13.02%	0.0276%
Cincinnati Financial Corp	CINF	$ 12,438.90	0.05%	2.77%	7.00%	9.87%	0.0050%
Colgate-Palmolive Co	CL	$ 56,333.61	0.23%	2.59%	10.50%	13.23%	0.0305%
Clorox Co/The	CLX	$ 18,759.75	0.08%	2.62%	7.50%	10.22%	0.0078%
Comerica Inc	CMA	$ 15,846.78	0.06%	2.59%	18.00%	20.82%	0.0135%
Comcast Corp	CMCSA	$ 161,329.90	0.66%	2.16%	12.50%	14.80%	0.0976%
CME Group Inc	CME	$ 61,286.76	0.25%	1.55%	4.50%	6.08%	0.0153%
Chipotle Mexican Grill Inc	CMG	$ 12,453.38	0.05%	0.00%	18.50%	18.50%	0.0094%
Cummins Inc	CMI	$ 25,359.09	0.10%	2.99%	9.00%	12.12%	0.0126%
CMS Energy Corp	CMS	$ 13,851.31	0.06%	3.09%	7.00%	10.20%	0.0058%
Centene Corp	CNC	$ 29,340.06	0.12%	0.00%	17.00%	17.00%	0.0204%
CenterPoint Energy Inc	CNP	$ 11,772.60	0.05%	4.18%	8.50%	12.86%	0.0062%
Capital One Financial Corp	COF	$ 46,230.21	0.19%	1.66%	9.00%	10.73%	0.0203%
Cabot Oil & Gas Corp	COG	$ 10,495.58	N/A	1.01%	N/A	N/A	N/A
Rockwell Collins Inc	COL	$ 23,156.44	0.09%	0.94%	12.50%	13.50%	0.0128%
Cooper Cos Inc/The	COO	$ 13,150.45	0.05%	0.02%	16.50%	16.52%	0.0089%
ConocoPhillips	COP	$ 90,968.80	N/A	1.46%	N/A	N/A	N/A
Costco Wholesale Corp	COST	$ 101,615.30	0.42%	0.98%	9.00%	10.02%	0.0417%
Coty Inc	COTY	$ 8,593.23	0.04%	4.37%	7.00%	11.52%	0.0040%
Campbell Soup Co	CPB	$ 11,194.19	0.05%	3.76%	3.50%	7.33%	0.0034%
Copart Inc	CPRT	$ 12,016.87	0.05%	0.00%	15.50%	15.50%	0.0076%
salesforce.com Inc	CRM	$ 117,212.80	0.48%	0.00%	65.00%	65.00%	0.3116%
Cisco Systems Inc	CSCO	$ 229,030.90	0.94%	2.73%	7.50%	10.33%	0.0968%
CSX Corp	CSX	$ 64,127.41	0.26%	1.18%	17.50%	18.78%	0.0493%
Cintas Corp	CTAS	$ 20,720.81	0.08%	0.92%	13.50%	14.48%	0.0123%
CenturyLink Inc	CTL	$ 23,591.28	0.10%	9.88%	2.50%	12.50%	0.0121%
Cognizant Technology Solutions Corp	CTSH	$ 44,138.00	0.18%	1.05%	11.50%	12.61%	0.0228%
Citrix Systems Inc	CTXS	$ 14,690.14	0.06%	0.00%	7.00%	7.00%	0.0042%
CVS Health Corp	CVS	$ 80,739.63	0.33%	2.52%	8.50%	11.13%	0.0367%
Chevron Corp	CVX	$ 239,422.60	0.98%	3.62%	31.00%	35.18%	0.3445%
Concho Resources Inc	CXO	$ 23,249.66	0.10%	0.00%	34.50%	34.50%	0.0328%
Dominion Energy Inc	D	$ 46,231.26	0.19%	5.09%	6.50%	11.76%	0.0222%
Delta Air Lines Inc	DAL	$ 37,027.69	0.15%	2.61%	10.50%	13.25%	0.0201%
Deere & Co	DE	$ 50,924.21	0.21%	1.74%	16.50%	18.38%	0.0383%
Discover Financial Services	DFS	$ 26,734.87	0.11%	2.06%	8.00%	10.14%	0.0111%
Dollar General Corp	DG	$ 27,737.68	0.11%	1.11%	12.50%	13.68%	0.0155%
Quest Diagnostics Inc	DGX	$ 14,059.68	0.06%	1.94%	10.00%	12.04%	0.0069%
DR Horton Inc	DHI	$ 15,268.22	0.06%	1.24%	13.50%	14.82%	0.0093%
Danaher Corp	DHR	$ 74,867.90	0.31%	0.60%	11.00%	11.63%	0.0356%
Walt Disney Co/The	DIS	$ 174,195.00	0.71%	1.45%	9.00%	10.52%	0.0749%
Discovery Inc	DISCA	$ 17,318.36	0.07%	0.00%	17.00%	17.00%	0.0120%
DISH Network Corp	DISH	$ 16,938.11	0.07%	0.00%	1.00%	1.00%	0.0007%
Digital Realty Trust Inc	DLR	$ 22,503.07	0.09%	3.88%	6.50%	10.51%	0.0097%
Dollar Tree Inc	DLTR	$ 19,296.07	0.08%	0.00%	18.50%	18.50%	0.0146%
Dover Corp	DOV	$ 13,021.58	0.05%	2.18%	13.00%	15.32%	0.0082%
Duke Realty Corp	DRE	$ 9,889.02	0.04%	3.03%	7.00%	10.14%	0.0041%
Darden Restaurants Inc	DRI	$ 13,421.25	0.05%	2.77%	12.00%	14.94%	0.0082%
DTE Energy Co	DTE	$ 19,882.33	0.08%	3.46%	7.50%	11.09%	0.0090%
Duke Energy Corp	DUK	$ 56,917.28	0.23%	4.69%	5.50%	10.32%	0.0240%
DaVita Inc	DVA	$ 12,440.82	0.05%	0.00%	11.00%	11.00%	0.0056%
Devon Energy Corp	DVN	$ 20,652.03	0.08%	0.80%	23.50%	24.39%	0.0206%
DowDuPont Inc	DWDP	$ 150,444.90	N/A	2.50%	N/A	N/A	N/A
DXC Technology Co	DXC	$ 26,181.48	0.11%	0.82%	13.50%	14.38%	0.0154%
Electronic Arts Inc	EA	$ 34,773.05	0.14%	0.00%	11.50%	11.50%	0.0164%
eBay Inc	EBAY	$ 32,271.07	0.13%	0.00%	13.00%	13.00%	0.0172%
Ecolab Inc	ECL	$ 45,100.18	0.18%	1.05%	9.00%	10.10%	0.0186%
Consolidated Edison Inc	ED	$ 23,822.60	0.10%	3.84%	3.00%	6.90%	0.0067%
Equifax Inc	EFX	$ 15,442.50	0.06%	1.22%	8.00%	9.27%	0.0059%
Edison International	EIX	$ 22,379.96	0.09%	3.65%	4.50%	8.23%	0.0075%
Estee Lauder Cos Inc/The	EL	$ 50,371.66	0.21%	1.20%	13.50%	14.78%	0.0304%
Eastman Chemical Co	EMN	$ 13,624.36	0.06%	2.32%	8.50%	10.92%	0.0061%
Emerson Electric Co	EMR	$ 49,116.68	0.20%	2.50%	12.50%	15.16%	0.0304%
EOG Resources Inc	EOG	$ 75,427.53	N/A	0.68%	N/A	N/A	N/A
Equinix Inc	EQIX	$ 33,588.95	0.14%	2.35%	25.50%	28.15%	0.0387%

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 136 of 176

Company	Ticker	Market Capitalization	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est.	DCF Result	Weighted DCF Result
Equity Residential	EQR	$ 23,906.45	0.10%	3.33%	-15.00%	-11.92%	-0.0117%
EQT Corp	EQT	$ 11,691.36	0.05%	0.27%	40.50%	40.82%	0.0195%
Eversource Energy	ES	$ 19,501.16	0.08%	3.38%	5.00%	8.46%	0.0068%
Express Scripts Holding Co	ESRX	$ 53,545.64	0.22%	0.00%	13.50%	13.50%	0.0296%
Essex Property Trust Inc	ESS	$ 16,064.99	0.07%	3.12%	0.50%	3.63%	0.0024%
E*TRADE Financial Corp	ETFC	$ 13,740.26	0.06%	0.00%	17.50%	17.50%	0.0098%
Eaton Corp PLC	ETN	$ 38,000.41	0.16%	3.01%	10.00%	13.16%	0.0205%
Entergy Corp	ETR	$ 14,684.29	0.06%	4.48%	2.00%	6.52%	0.0039%
Evergy Inc	EVRG	$ -	N/A	3.39%	N/A	N/A	N/A
Edwards Lifesciences Corp	EW	$ 31,992.95	0.13%	0.00%	15.00%	15.00%	0.0196%
Exelon Corp	EXC	$ 41,769.84	0.17%	3.31%	8.00%	11.44%	0.0195%
Expeditors International of Washington I	EXPD	$ 12,664.18	0.05%	1.23%	9.50%	10.79%	0.0056%
Expedia Group Inc	EXPE	$ 18,987.56	0.08%	1.01%	21.00%	22.12%	0.0172%
Extra Space Storage Inc	EXR	$ 10,686.65	0.04%	4.15%	5.00%	9.25%	0.0040%
Ford Motor Co	F	$ 35,821.10	0.15%	6.56%	2.50%	9.14%	0.0134%
Fastenal Co	FAST	$ 16,295.83	0.07%	2.82%	11.50%	14.48%	0.0097%
Facebook Inc	FB	$ 459,235.40	1.88%	0.00%	26.00%	26.00%	0.4883%
Fortune Brands Home & Security Inc	FBHS	$ 7,477.05	0.03%	1.52%	13.50%	15.12%	0.0046%
Freeport-McMoRan Inc	FCX	$ 19,749.87	N/A	1.47%	N/A	N/A	N/A
FedEx Corp	FDX	$ 63,883.09	0.26%	1.09%	11.00%	12.15%	0.0317%
FirstEnergy Corp	FE	$ 17,734.87	0.07%	3.88%	3.00%	6.94%	0.0050%
F5 Networks Inc	FFIV	$ 11,128.48	0.05%	0.00%	11.00%	11.00%	0.0050%
Fidelity National Information Services I	FIS	$ 35,625.53	0.15%	1.19%	16.00%	17.29%	0.0252%
Fiserv Inc	FISV	$ 32,678.87	0.13%	0.00%	10.00%	10.00%	0.0134%
Fifth Third Bancorp	FITB	$ 19,327.62	0.08%	2.60%	7.00%	9.69%	0.0077%
Foot Locker Inc	FL	$ 5,751.67	0.02%	2.92%	7.50%	10.53%	0.0025%
FLIR Systems Inc	FLIR	$ 8,321.05	0.03%	1.11%	13.50%	14.68%	0.0050%
Fluor Corp	FLR	$ 8,316.78	0.03%	1.42%	8.50%	9.98%	0.0034%
Flowserve Corp	FLS	$ 7,113.78	0.03%	1.40%	7.50%	8.95%	0.0026%
FleetCor Technologies Inc	FLT	$ 19,528.67	0.08%	0.00%	14.50%	14.50%	0.0116%
FMC Corp	FMC	$ 12,287.68	0.05%	0.77%	22.50%	23.36%	0.0117%
Twenty-First Century Fox Inc	FOX	N/A	N/A	0.00%	N/A	N/A	N/A
Federal Realty Investment Trust	FRT	$ 8,971.92	0.04%	3.32%	3.50%	6.88%	0.0025%
TechnipFMC PLC	FTI	N/A	N/A	0.00%	N/A	N/A	N/A
Fortinet Inc	FTNT	$ 15,090.01	0.06%	0.00%	38.00%	38.00%	0.0235%
Fortive Corp	FTV	$ 29,298.55	N/A	0.33%	N/A	N/A	N/A
General Dynamics Corp	GD	$ 61,007.84	0.25%	1.81%	9.00%	10.89%	0.0272%
General Electric Co	GE	$ 110,029.10	0.45%	3.79%	2.50%	6.34%	0.0285%
Gilead Sciences Inc	GILD	$ 99,221.76	0.41%	2.98%	-6.50%	-3.62%	-0.0147%
General Mills Inc	GIS	$ 25,834.97	0.11%	4.52%	4.50%	9.12%	0.0096%
Corning Inc	GLW	$ 28,881.30	0.12%	2.02%	13.50%	15.66%	0.0185%
General Motors Co	GM	$ 48,322.91	0.20%	4.56%	3.50%	8.14%	0.0161%
Alphabet Inc	GOOG	$ 812,682.90	3.32%	0.00%	16.00%	16.00%	0.5318%
Genuine Parts Co	GPC	$ 14,345.11	0.06%	2.95%	9.00%	12.08%	0.0071%
Global Payments Inc	GPN	$ 19,298.89	0.08%	0.03%	11.00%	11.03%	0.0087%
Gap Inc/The	GPS	$ 10,437.35	0.04%	3.58%	7.00%	10.71%	0.0046%
Garmin Ltd	GRMN	$ 13,053.42	0.05%	3.07%	10.50%	13.73%	0.0073%
Goldman Sachs Group Inc/The	GS	$ 85,959.92	0.35%	1.41%	9.00%	10.47%	0.0368%
Goodyear Tire & Rubber Co/The	GT	$ 5,505.51	0.02%	2.76%	12.50%	15.43%	0.0035%
WW Grainger Inc	GWW	$ 19,766.47	0.08%	1.55%	9.50%	11.12%	0.0090%
Halliburton Co	HAL	$ 36,821.31	N/A	1.72%	N/A	N/A	N/A
Hasbro Inc	HAS	$ 12,915.85	0.05%	2.48%	9.50%	12.10%	0.0064%
Huntington Bancshares Inc/OH	HBAN	$ 17,016.14	0.07%	3.63%	11.50%	15.34%	0.0107%
Hanesbrands Inc	HBI	$ 6,211.48	0.03%	3.48%	5.50%	9.08%	0.0023%
HCA Healthcare Inc	HCA	$ 48,275.93	0.20%	1.01%	14.00%	15.08%	0.0298%
HCP Inc	HCP	$ 11,886.12	0.05%	5.96%	35.50%	42.52%	0.0207%
Home Depot Inc/The	HD	$ 227,683.30	0.93%	2.25%	12.50%	14.89%	0.1386%
Hess Corp	HES	$ 21,751.36	N/A	1.38%	N/A	N/A	N/A
HollyFrontier Corp	HFC	$ 12,379.50	0.05%	1.91%	22.00%	24.12%	0.0122%
Hartford Financial Services Group Inc/Th	HIG	$ 17,771.02	0.07%	2.42%	13.00%	15.58%	0.0113%
Huntington Ingalls Industries Inc	HII	$ 11,246.06	0.05%	1.11%	12.50%	13.68%	0.0063%
Hilton Worldwide Holdings Inc	HLT	$ 24,964.78	0.10%	0.80%	9.50%	10.34%	0.0106%
Harley-Davidson Inc	HOG	$ 7,270.08	0.03%	3.39%	9.00%	12.54%	0.0037%
Hologic Inc	HOLX	$ 11,018.81	0.05%	0.00%	24.00%	24.00%	0.0108%
Honeywell International Inc	HON	$ 122,315.50	0.50%	1.99%	10.00%	12.09%	0.0605%
Helmerich & Payne Inc	HP	$ 7,769.89	0.03%	3.98%	56.50%	61.60%	0.0196%
Hewlett Packard Enterprise Co	HPE	$ 24,971.70	0.10%	2.67%	7.50%	10.27%	0.0105%
HP Inc	HPQ	$ 41,807.24	0.17%	2.23%	6.00%	8.30%	0.0142%
H&R Block Inc	HRB	$ 5,150.06	0.02%	4.07%	8.50%	12.74%	0.0027%
Hormel Foods Corp	HRL	$ 21,026.40	0.09%	1.97%	9.50%	11.56%	0.0099%
Harris Corp	HRS	$ 19,944.37	0.08%	1.63%	13.50%	15.24%	0.0124%
Henry Schein Inc	HSIC	$ 13,369.49	0.05%	0.00%	9.00%	9.00%	0.0049%
Host Hotels & Resorts Inc	HST	$ 14,974.16	0.06%	4.05%	2.00%	6.09%	0.0037%
Hershey Co/The	HSY	$ 21,496.56	0.09%	2.81%	7.00%	9.91%	0.0087%
Humana Inc	HUM	$ 45,629.86	0.19%	0.62%	13.50%	14.16%	0.0264%
International Business Machines Corp	IBM	$ 138,110.90	0.56%	4.26%	0.50%	4.77%	0.0269%
Intercontinental Exchange Inc	ICE	$ 43,572.34	0.18%	1.27%	12.00%	13.35%	0.0238%
IDEXX Laboratories Inc	IDXX	$ 20,023.83	0.08%	0.00%	17.00%	17.00%	0.0139%
International Flavors & Fragrances Inc	IFF	$ 10,860.13	0.04%	2.17%	8.50%	10.76%	0.0048%
Illumina Inc	ILMN	$ 50,672.37	0.21%	0.00%	15.00%	15.00%	0.0311%
Incyte Corp	INCY	$ 14,059.35	N/A	0.00%	N/A	N/A	N/A
IHS Markit Ltd	INFO	$ 21,042.56	0.09%	0.00%	19.50%	19.50%	0.0168%
Intel Corp	INTC	$ 221,927.40	0.91%	2.49%	12.50%	15.15%	0.1375%
Intuit Inc	INTU	$ 57,644.48	0.24%	0.84%	15.00%	15.90%	0.0375%
International Paper Co	IP	$ 19,946.14	0.08%	3.90%	17.00%	21.23%	0.0173%
Interpublic Group of Cos Inc/The	IPG	$ 9,059.60	0.04%	3.62%	9.50%	13.29%	0.0049%
IPG Photonics Corp	IPGP	$ 8,274.57	0.03%	0.00%	13.00%	13.00%	0.0044%
IQVIA Holdings Inc	IQV	$ 25,717.50	0.11%	0.00%	14.50%	14.50%	0.0153%

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 137 of 176

Company	Ticker	Market Capitalization	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est.	DCF Result	Weighted DCF Result
Ingersoll-Rand PLC	IR	$ 25,568.66	0.10%	2.03%	12.00%	14.15%	0.0148%
Iron Mountain Inc	IRM	$ 9,590.04	0.04%	7.04%	12.50%	19.98%	0.0078%
Intuitive Surgical Inc	ISRG	$ 63,039.82	0.26%	0.00%	15.00%	15.00%	0.0387%
Gartner Inc	IT	$ 14,185.62	0.06%	0.00%	14.50%	14.50%	0.0084%
Illinois Tool Works Inc	ITW	$ 48,133.26	0.20%	2.79%	11.00%	13.94%	0.0274%
Invesco Ltd	IVZ	$ 9,539.91	0.04%	5.17%	7.50%	12.86%	0.0050%
JB Hunt Transport Services Inc	JBHT	$ 13,235.00	0.05%	0.81%	13.50%	14.36%	0.0078%
Johnson Controls International plc	JCI	$ 33,639.41	0.14%	2.86%	3.00%	5.90%	0.0081%
Jacobs Engineering Group Inc	JEC	$ 11,045.30	0.05%	0.77%	13.00%	13.82%	0.0062%
Jefferies Financial Group Inc	JEF	$ 7,642.82	0.03%	2.18%	21.50%	23.91%	0.0075%
Johnson & Johnson	JNJ	$ 373,778.70	1.53%	2.67%	11.00%	13.82%	0.2112%
Juniper Networks Inc	JNPR	$ 10,261.88	0.04%	2.52%	4.50%	7.08%	0.0030%
JPMorgan Chase & Co	JPM	$ 387,409.10	1.58%	2.78%	9.50%	12.41%	0.1966%
Nordstrom Inc	JWN	$ 9,937.78	0.04%	2.50%	7.00%	9.59%	0.0039%
Kellogg Co	K	$ 23,991.58	0.10%	3.24%	7.00%	10.35%	0.0102%
KeyCorp	KEY	$ 21,644.81	0.09%	3.33%	12.50%	16.04%	0.0142%
Kraft Heinz Co/The	KHC	$ 67,678.88	0.28%	4.68%	9.50%	14.40%	0.0399%
Kimco Realty Corp	KIM	$ 6,699.67	0.03%	7.37%	-0.50%	6.85%	0.0019%
KLA-Tencor Corp	KLAC	$ 15,797.63	0.06%	2.96%	15.50%	18.69%	0.0121%
Kimberly-Clark Corp	KMB	$ 39,074.07	0.16%	3.56%	10.50%	14.25%	0.0228%
Kinder Morgan Inc/DE	KMI	$ 40,266.53	0.16%	4.38%	57.00%	62.63%	0.1031%
CarMax Inc	KMX	$ 12,776.86	0.05%	0.00%	11.50%	11.50%	0.0060%
Coca-Cola Co/The	KO	$ 195,000.00	0.80%	3.51%	6.50%	10.12%	0.0807%
Michael Kors Holdings Ltd	KORS	$ 9,934.66	0.04%	0.00%	7.00%	7.00%	0.0028%
Kroger Co/The	KR	$ 22,937.66	0.09%	2.02%	5.00%	7.07%	0.0066%
Kohl's Corp	KSS	$ 11,983.33	0.05%	3.40%	9.00%	12.55%	0.0062%
Kansas City Southern	KSU	$ 11,643.50	0.05%	1.26%	12.50%	13.84%	0.0066%
Loews Corp	L	$ 15,944.18	0.07%	0.50%	16.50%	17.04%	0.0111%
L Brands Inc	LB	$ 7,936.50	N/A	8.32%	N/A	N/A	N/A
Leggett & Platt Inc	LEG	$ 5,526.59	0.02%	3.58%	9.00%	12.74%	0.0029%
Lennar Corp	LEN	$ 14,724.42	0.06%	0.36%	12.50%	12.88%	0.0078%
Laboratory Corp of America Holdings	LH	$ 17,387.94	0.07%	0.00%	9.50%	9.50%	0.0068%
LKQ Corp	LKQ	$ 9,642.69	0.04%	0.00%	13.00%	13.00%	0.0051%
L3 Technologies Inc	LLL	$ 16,555.44	0.07%	1.58%	11.00%	12.67%	0.0086%
Eli Lilly & Co	LLY	$ 121,349.90	0.50%	1.99%	12.00%	14.11%	0.0700%
Lockheed Martin Corp	LMT	$ 99,519.58	0.41%	2.52%	13.00%	15.68%	0.0638%
Lincoln National Corp	LNC	$ 15,175.81	0.06%	2.06%	7.50%	9.64%	0.0060%
Alliant Energy Corp	LNT	$ 9,998.47	0.04%	3.13%	6.50%	9.73%	0.0040%
Lowe's Cos Inc	LOW	$ 89,842.58	0.37%	1.79%	13.00%	14.91%	0.0548%
Lam Research Corp	LRCX	$ 23,378.48	0.10%	2.95%	13.50%	16.65%	0.0159%
Southwest Airlines Co	LUV	$ 35,286.51	0.14%	1.04%	10.00%	11.09%	0.0160%
LyondellBasell Industries NV	LYB	$ 40,564.45	0.17%	3.85%	10.50%	14.55%	0.0241%
Macy's Inc	M	$ 10,090.20	0.04%	4.59%	5.50%	10.22%	0.0042%
Mastercard Inc	MA	$ 224,579.80	0.92%	0.46%	16.00%	16.50%	0.1515%
Mid-America Apartment Communities Inc	MAA	$ 11,141.56	0.05%	3.76%	-4.50%	-0.82%	-0.0004%
Macerich Co/The	MAC	$ 7,311.95	0.03%	5.94%	8.00%	14.18%	0.0042%
Marriott International Inc/MD	MAR	$ 42,401.93	0.17%	1.34%	12.50%	13.92%	0.0241%
Masco Corp	MAS	$ 11,019.65	0.05%	1.33%	15.50%	16.93%	0.0076%
Mattel Inc	MAT	$ 4,997.78	0.02%	0.00%	26.50%	26.50%	0.0054%
McDonald's Corp	MCD	$ 128,627.60	0.53%	2.80%	10.00%	12.94%	0.0681%
Microchip Technology Inc	MCHP	$ 16,821.34	0.07%	2.10%	15.00%	17.26%	0.0119%
McKesson Corp	MCK	$ 26,421.71	0.11%	1.18%	10.50%	11.74%	0.0127%
Moody's Corp	MCO	$ 31,285.75	0.13%	1.08%	14.00%	15.16%	0.0194%
Mondelez International Inc	MDLZ	$ 62,129.76	0.25%	2.46%	9.50%	12.08%	0.0307%
Medtronic PLC	MDT	$ 131,090.70	0.54%	2.16%	8.00%	10.25%	0.0549%
MetLife Inc	MET	$ 47,777.35	0.20%	3.58%	6.00%	9.69%	0.0189%
MGM Resorts International	MGM	$ 14,474.00	0.06%	1.78%	33.00%	35.07%	0.0208%
Mohawk Industries Inc	MHK	$ 12,765.15	0.05%	0.00%	7.00%	7.00%	0.0037%
McCormick & Co Inc/MD	MKC	$ 17,868.26	0.07%	1.55%	10.00%	11.63%	0.0085%
Martin Marietta Materials Inc	MLM	$ 11,720.23	0.05%	1.03%	14.50%	15.60%	0.0075%
Marsh & McLennan Cos Inc	MMC	$ 42,229.29	0.17%	1.99%	9.00%	11.08%	0.0191%
3M Co	MMM	$ 125,441.30	0.51%	2.54%	9.50%	12.16%	0.0624%
Monster Beverage Corp	MNST	$ 30,921.02	0.13%	0.00%	14.50%	14.50%	0.0183%
Altria Group Inc	MO	$ 116,533.00	0.48%	5.18%	10.50%	15.95%	0.0760%
Mosaic Co/The	MOS	$ 13,020.77	0.05%	0.44%	9.00%	9.46%	0.0050%
Marathon Petroleum Corp	MPC	$ 38,883.12	0.16%	2.37%	13.50%	16.03%	0.0255%
Merck & Co Inc	MRK	$ 190,160.40	0.78%	2.70%	5.50%	8.27%	0.0643%
Marathon Oil Corp	MRO	$ 20,256.88	N/A	0.84%	N/A	N/A	N/A
Morgan Stanley	MS	$ 82,706.09	0.34%	2.54%	11.00%	13.68%	0.0463%
MSCI Inc	MSCI	$ 15,325.47	0.06%	1.40%	22.00%	23.55%	0.0148%
Microsoft Corp	MSFT	$ 867,355.10	3.55%	1.63%	13.50%	15.24%	0.5406%
Motorola Solutions Inc	MSI	$ 20,440.06	0.08%	1.77%	12.00%	13.88%	0.0116%
M&T Bank Corp	MTB	$ 24,397.69	0.10%	2.37%	12.00%	14.51%	0.0145%
Mettler-Toledo International Inc	MTD	$ 15,422.65	0.06%	0.00%	11.00%	11.00%	0.0069%
Micron Technology Inc	MU	$ 51,225.61	0.21%	0.00%	25.50%	25.50%	0.0534%
Mylan NV	MYL	$ 18,574.19	0.08%	0.00%	14.00%	14.00%	0.0106%
Noble Energy Inc	NBL	$ 15,291.80	N/A	1.40%	N/A	N/A	N/A
Norwegian Cruise Line Holdings Ltd	NCLH	$ 12,186.86	0.05%	0.00%	16.50%	16.50%	0.0082%
Nasdaq Inc	NDAQ	$ 14,119.29	0.06%	2.05%	9.50%	11.65%	0.0067%
NextEra Energy Inc	NEE	$ 79,886.00	0.33%	2.79%	9.00%	11.92%	0.0389%
Newmont Mining Corp	NEM	$ 16,199.33	0.07%	1.84%	6.00%	7.90%	0.0052%
Netflix Inc	NFLX	$ 158,354.30	0.65%	0.00%	47.00%	47.00%	0.3044%
Newfield Exploration Co	NFX	$ 5,699.78	0.02%	0.00%	26.00%	26.00%	0.0061%
NiSource Inc	NI	$ 9,091.02	0.04%	3.11%	18.00%	21.39%	0.0080%
NIKE Inc	NKE	$ 129,811.40	0.53%	1.00%	14.50%	15.57%	0.0827%
Nektar Therapeutics	NKTR	$ 8,984.55	N/A	0.00%	N/A	N/A	N/A
Nielsen Holdings PLC	NLSN	$ 9,622.59	0.04%	5.17%	4.00%	9.27%	0.0036%
Northrop Grumman Corp	NOC	$ 55,428.46	0.23%	1.51%	13.00%	14.61%	0.0331%

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 138 of 176

Company	Ticker	Market Capitalization	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est.	DCF Result	Weighted DCF Result
National Oilwell Varco Inc	NOV	$ 17,211.11	0.07%	0.44%	41.50%	42.03%	0.0296%
NRG Energy Inc	NRG	$ 11,111.57	N/A	0.33%	N/A	N/A	N/A
Norfolk Southern Corp	NSC	$ 51,365.90	0.21%	1.75%	13.50%	15.37%	0.0323%
NetApp Inc	NTAP	$ 21,816.60	0.09%	1.91%	19.50%	21.60%	0.0193%
Northern Trust Corp	NTRS	$ 23,710.32	0.10%	2.07%	11.00%	13.18%	0.0128%
Nucor Corp	NUE	$ 20,562.29	0.08%	2.34%	19.50%	22.07%	0.0186%
NVIDIA Corp	NVDA	$ 169,808.30	0.69%	0.22%	23.00%	23.25%	0.1614%
Newell Brands Inc	NWL	$ 9,705.42	0.04%	4.61%	9.50%	14.33%	0.0057%
News Corp	NWS	N/A	N/A	0.00%	N/A	N/A	N/A
Realty Income Corp	O	$ 16,069.46	0.07%	4.76%	4.50%	9.37%	0.0062%
ONEOK Inc	OKE	$ 28,157.19	0.12%	4.99%	20.50%	26.00%	0.0299%
Omnicom Group Inc	OMC	$ 15,685.92	0.06%	3.43%	7.00%	10.55%	0.0068%
Oracle Corp	ORCL	$ 188,530.20	0.77%	1.54%	8.50%	10.11%	0.0779%
O'Reilly Automotive Inc	ORLY	$ 27,490.57	0.11%	0.00%	11.50%	11.50%	0.0129%
Occidental Petroleum Corp	OXY	$ 62,844.77	N/A	3.82%	N/A	N/A	N/A
Paychex Inc	PAYX	$ 25,988.01	0.11%	3.18%	11.00%	14.35%	0.0153%
People's United Financial Inc	PBCT	$ 6,015.17	0.02%	4.05%	10.50%	14.76%	0.0036%
PACCAR Inc	PCAR	$ 24,506.92	0.10%	3.35%	7.50%	10.98%	0.0110%
PG&E Corp	PCG	$ 24,298.67	0.10%	0.00%	7.50%	7.50%	0.0075%
Public Service Enterprise Group Inc	PEG	$ 26,359.20	0.11%	3.54%	4.00%	7.61%	0.0082%
PepsiCo Inc	PEP	$ 150,533.30	0.62%	3.48%	7.50%	11.11%	0.0684%
Pfizer Inc	PFE	$ 262,036.30	1.07%	3.04%	14.00%	17.25%	0.1849%
Principal Financial Group Inc	PFG	$ 17,238.22	0.07%	3.50%	5.00%	8.59%	0.0061%
Procter & Gamble Co/The	PG	$ 204,643.80	0.84%	3.52%	10.50%	14.20%	0.1189%
Progressive Corp/The	PGR	$ 41,421.57	0.17%	1.62%	15.50%	17.25%	0.0292%
Parker-Hannifin Corp	PH	$ 24,492.62	0.10%	1.64%	14.00%	15.75%	0.0158%
PulteGroup Inc	PHM	$ 6,764.97	0.03%	1.64%	15.50%	17.27%	0.0048%
Packaging Corp of America	PKG	$ 10,088.82	0.04%	2.96%	9.50%	12.60%	0.0052%
PerkinElmer Inc	PKI	$ 10,347.52	0.04%	0.30%	12.50%	12.82%	0.0054%
Prologis Inc	PLD	$ 34,874.15	0.14%	3.02%	9.00%	12.16%	0.0173%
Philip Morris International Inc	PM	$ 130,297.70	0.53%	5.44%	8.50%	14.17%	0.0755%
PNC Financial Services Group Inc/The	PNC	$ 64,714.05	0.26%	2.73%	9.50%	12.36%	0.0327%
Pentair PLC	PNR	$ 7,666.73	0.03%	1.60%	5.50%	7.14%	0.0022%
Pinnacle West Capital Corp	PNW	$ 8,985.83	0.04%	3.61%	5.00%	8.70%	0.0032%
PPG Industries Inc	PPG	$ 26,249.27	0.11%	1.77%	7.50%	9.34%	0.0100%
PPL Corp	PPL	$ 20,973.84	0.09%	5.57%	2.00%	7.63%	0.0065%
Perrigo Co PLC	PRGO	$ 9,791.77	0.04%	1.15%	2.50%	3.66%	0.0015%
Prudential Financial Inc	PRU	$ 43,776.11	0.18%	3.44%	6.00%	9.54%	0.0171%
Public Storage	PSA	$ 34,381.17	0.14%	4.35%	7.00%	11.50%	0.0162%
Phillips 66	PSX	$ 54,643.64	0.22%	2.84%	8.00%	10.95%	0.0245%
PVH Corp	PVH	$ 10,291.32	0.04%	0.11%	11.00%	11.12%	0.0047%
Quanta Services Inc	PWR	$ 4,866.23	0.02%	0.00%	19.50%	19.50%	0.0039%
Praxair Inc	PX	$ 47,688.72	0.20%	2.14%	10.00%	12.25%	0.0239%
Pioneer Natural Resources Co	PXD	$ 30,873.25	0.13%	0.23%	77.00%	77.32%	0.0976%
PayPal Holdings Inc	PYPL	$ 99,858.55	0.41%	0.00%	17.50%	17.50%	0.0715%
QUALCOMM Inc	QCOM	$ 106,326.20	0.43%	3.43%	7.50%	11.06%	0.0481%
Qorvo Inc	QRVO	$ 9,566.80	N/A	0.00%	N/A	N/A	N/A
Royal Caribbean Cruises Ltd	RCL	$ 26,418.10	0.11%	2.23%	11.00%	13.35%	0.0144%
Everest Re Group Ltd	RE	$ 9,270.32	0.04%	2.36%	10.00%	12.48%	0.0047%
Regency Centers Corp	REG	$ 10,766.85	0.04%	3.52%	14.00%	17.77%	0.0078%
Regeneron Pharmaceuticals Inc	REGN	$ 42,324.15	0.17%	0.00%	16.00%	16.00%	0.0277%
Regions Financial Corp	RF	$ 21,571.62	0.09%	3.05%	12.50%	15.74%	0.0139%
Robert Half International Inc	RHI	$ 8,394.83	0.03%	1.72%	8.50%	10.29%	0.0035%
Red Hat Inc	RHT	$ 22,711.09	0.09%	0.00%	18.00%	18.00%	0.0167%
Raymond James Financial Inc	RJF	$ 13,746.15	0.06%	1.34%	15.00%	16.44%	0.0092%
Ralph Lauren Corp	RL	$ 10,264.02	0.04%	1.98%	6.00%	8.04%	0.0034%
ResMed Inc	RMD	$ 15,669.67	0.06%	1.35%	11.00%	12.42%	0.0080%
Rockwell Automation Inc	ROK	$ 23,355.03	0.10%	1.94%	10.00%	12.04%	0.0115%
Rollins Inc	ROL	$ 12,885.71	0.05%	0.95%	12.50%	13.51%	0.0071%
Roper Technologies Inc	ROP	$ 30,578.75	0.13%	0.56%	14.50%	15.10%	0.0189%
Ross Stores Inc	ROST	$ 35,566.07	0.15%	0.98%	11.50%	12.54%	0.0182%
Republic Services Inc	RSG	$ 23,322.73	0.10%	2.09%	13.50%	15.73%	0.0150%
Raytheon Co	RTN	$ 59,339.85	0.24%	1.67%	11.00%	12.76%	0.0310%
SBA Communications Corp	SBAC	$ 17,596.86	0.07%	0.00%	45.50%	45.50%	0.0327%
Starbucks Corp	SBUX	$ 76,362.51	0.31%	2.65%	15.00%	17.85%	0.0557%
SCANA Corp	SCG	$ 5,542.68	0.02%	1.26%	-15.50%	-14.34%	-0.0032%
Charles Schwab Corp/The	SCHW	$ 69,818.39	0.29%	1.01%	16.00%	17.09%	0.0488%
Sealed Air Corp	SEE	$ 6,180.06	0.03%	1.66%	19.00%	20.82%	0.0053%
Sherwin-Williams Co/The	SHW	$ 41,020.41	0.17%	0.80%	13.00%	13.85%	0.0232%
SVB Financial Group	SIVB	$ 17,059.98	0.07%	0.00%	21.50%	21.50%	0.0150%
JM Smucker Co/The	SJM	$ 11,572.32	0.05%	3.34%	6.50%	9.95%	0.0047%
Schlumberger Ltd	SLB	$ 86,991.88	0.36%	3.18%	28.00%	31.63%	0.1125%
SL Green Realty Corp	SLG	$ 8,913.70	0.04%	3.59%	6.50%	10.21%	0.0037%
Snap-on Inc	SNA	$ 10,187.15	0.04%	1.82%	8.00%	9.89%	0.0041%
Synopsys Inc	SNPS	$ 13,234.76	0.05%	0.00%	10.50%	10.50%	0.0057%
Southern Co/The	SO	$ 42,937.02	0.18%	5.68%	3.00%	8.77%	0.0154%
Simon Property Group Inc	SPG	$ 52,610.76	0.22%	4.94%	3.00%	8.01%	0.0172%
S&P Global Inc	SPGI	$ 48,517.68	0.20%	1.04%	13.50%	14.61%	0.0290%
Stericycle Inc	SRCL	$ 4,671.51	0.02%	0.00%	8.00%	8.00%	0.0015%
Sempra Energy	SRE	$ 31,250.08	0.13%	3.24%	9.50%	12.89%	0.0165%
SunTrust Banks Inc	STI	$ 31,252.06	0.13%	3.05%	13.50%	16.76%	0.0214%
State Street Corp	STT	$ 31,794.11	0.13%	2.20%	9.50%	11.80%	0.0153%
Seagate Technology PLC	STX	$ 13,396.48	0.05%	5.40%	8.00%	13.62%	0.0075%
Constellation Brands Inc	STZ	$ 42,455.30	0.17%	1.39%	11.00%	12.47%	0.0216%
Stanley Black & Decker Inc	SWK	$ 22,230.82	0.09%	1.82%	10.00%	11.91%	0.0108%
Skyworks Solutions Inc	SWKS	$ 16,361.69	0.07%	1.67%	13.50%	15.28%	0.0102%
Synchrony Financial	SYF	$ 23,517.84	0.10%	2.67%	10.50%	13.31%	0.0128%
Stryker Corp	SYK	$ 64,913.45	0.27%	1.08%	13.00%	14.15%	0.0376%

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 139 of 176

Company	Ticker	Market Capitalization	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est.	DCF Result	Weighted DCF Result
Symantec Corp	SYMC	$ 12,687.99	0.05%	1.47%	7.50%	9.03%	0.0047%
Sysco Corp	SYY	$ 37,559.11	0.15%	2.08%	14.00%	16.23%	0.0249%
AT&T Inc	T	$ 247,702.90	1.01%	5.95%	7.00%	13.16%	0.1333%
Molson Coors Brewing Co	TAP	$ 13,243.65	0.05%	3.02%	11.50%	14.69%	0.0080%
TransDigm Group Inc	TDG	$ 19,300.66	0.08%	0.00%	11.00%	11.00%	0.0087%
TE Connectivity Ltd	TEL	$ 30,303.68	0.12%	2.04%	11.00%	13.15%	0.0163%
Target Corp	TGT	$ 44,635.43	0.18%	3.02%	7.00%	10.13%	0.0185%
Tiffany & Co	TIF	$ 14,779.80	0.06%	1.86%	12.00%	13.97%	0.0084%
TJX Cos Inc/The	TJX	$ 68,458.19	0.28%	1.42%	12.50%	14.01%	0.0392%
Torchmark Corp	TMK	$ 9,933.84	0.04%	0.73%	10.00%	10.77%	0.0044%
Thermo Fisher Scientific Inc	TMO	$ 98,032.49	0.40%	0.28%	9.50%	9.79%	0.0393%
Tapestry Inc	TPR	$ 13,938.15	0.06%	2.79%	13.50%	16.48%	0.0094%
TripAdvisor Inc	TRIP	$ 7,087.83	0.03%	0.00%	8.50%	8.50%	0.0025%
T Rowe Price Group Inc	TROW	$ 26,944.35	0.11%	2.58%	11.50%	14.23%	0.0157%
Travelers Cos Inc/The	TRV	$ 35,012.48	0.14%	2.36%	5.50%	7.92%	0.0113%
Tractor Supply Co	TSCO	$ 10,664.55	0.04%	1.51%	10.50%	12.09%	0.0053%
Tyson Foods Inc	TSN	$ 21,955.80	0.09%	2.08%	10.00%	12.18%	0.0109%
Total System Services Inc	TSS	$ 17,663.23	0.07%	0.54%	10.50%	11.07%	0.0080%
Take-Two Interactive Software Inc	TTWO	$ 14,969.57	0.06%	0.00%	28.50%	28.50%	0.0174%
Twitter Inc	TWTR	$ 21,368.87	N/A	0.00%	N/A	N/A	N/A
Texas Instruments Inc	TXN	$ 103,156.10	0.42%	2.91%	12.00%	15.08%	0.0636%
Textron Inc	TXT	$ 17,821.96	0.07%	0.11%	15.00%	15.12%	0.0110%
Under Armour Inc	UA	N/A	N/A	0.00%	N/A	N/A	N/A
United Continental Holdings Inc	UAL	$ 23,490.47	0.10%	0.00%	6.00%	6.00%	0.0058%
UDR Inc	UDR	$ 10,624.50	0.04%	3.25%	-1.50%	1.73%	0.0007%
Universal Health Services Inc	UHS	$ 11,678.52	0.05%	0.32%	11.00%	11.34%	0.0054%
Ulta Beauty Inc	ULTA	$ 16,464.80	0.07%	0.00%	21.00%	21.00%	0.0141%
UnitedHealth Group Inc	UNH	$ 258,123.80	1.06%	1.34%	15.00%	16.44%	0.1735%
Unum Group	UNM	$ 8,694.80	0.04%	2.62%	9.50%	12.24%	0.0044%
Union Pacific Corp	UNP	$ 121,596.80	0.50%	1.95%	13.50%	15.58%	0.0775%
United Parcel Service Inc	UPS	$ 100,886.60	0.41%	3.20%	8.50%	11.84%	0.0488%
United Rentals Inc	URI	$ 13,542.32	0.06%	0.00%	14.00%	14.00%	0.0078%
US Bancorp	USB	$ 87,824.88	0.36%	2.76%	7.50%	10.36%	0.0372%
United Technologies Corp	UTX	$ 112,325.10	0.46%	1.99%	9.00%	11.08%	0.0509%
Visa Inc	V	$ 298,656.60	1.22%	0.67%	14.50%	15.22%	0.1859%
Varian Medical Systems Inc	VAR	$ 9,941.47	0.04%	0.00%	9.50%	9.50%	0.0039%
VF Corp	VFC	$ 36,169.30	0.15%	2.01%	12.00%	14.13%	0.0209%
Viacom Inc	VIAB	$ 13,322.46	0.05%	2.42%	4.00%	6.47%	0.0035%
Valero Energy Corp	VLO	$ 50,219.75	0.21%	2.82%	10.00%	12.96%	0.0266%
Vulcan Materials Co	VMC	$ 14,747.88	0.06%	1.00%	18.00%	19.09%	0.0115%
Vornado Realty Trust	VNO	$ 13,489.78	0.06%	3.55%	-5.50%	-2.05%	-0.0011%
Verisk Analytics Inc	VRSK	$ 19,496.73	0.08%	0.00%	9.00%	9.00%	0.0072%
VeriSign Inc	VRSN	$ 18,964.95	0.08%	0.00%	12.00%	12.00%	0.0093%
Vertex Pharmaceuticals Inc	VRTX	$ 48,076.03	N/A	0.00%	N/A	N/A	N/A
Ventas Inc	VTR	$ 18,785.84	0.08%	6.13%	3.50%	9.74%	0.0075%
Verizon Communications Inc	VZ	$ 227,339.10	0.93%	4.38%	4.50%	8.98%	0.0835%
Waters Corp	WAT	$ 14,738.53	0.06%	0.00%	10.50%	10.50%	0.0063%
Walgreens Boots Alliance Inc	WBA	$ 72,783.49	0.30%	2.40%	10.50%	13.03%	0.0388%
WellCare Health Plans Inc	WCG	$ 13,880.01	0.06%	0.00%	21.00%	21.00%	0.0119%
Western Digital Corp	WDC	$ 16,756.56	0.07%	3.53%	8.00%	11.67%	0.0080%
WEC Energy Group Inc	WEC	$ 21,229.06	0.09%	3.43%	7.00%	10.55%	0.0092%
Welltower Inc	WELL	$ 23,125.32	0.09%	5.69%	8.50%	14.43%	0.0136%
Wells Fargo & Co	WFC	$ 259,473.60	1.06%	3.21%	6.00%	9.31%	0.0988%
Whirlpool Corp	WHR	$ 7,422.35	0.03%	4.03%	8.00%	12.19%	0.0037%
Willis Towers Watson PLC	WLTW	$ 18,648.68	N/A	1.68%	N/A	N/A	N/A
Waste Management Inc	WM	$ 38,138.40	0.16%	2.09%	10.50%	12.70%	0.0198%
Williams Cos Inc/The	WMB	$ 22,965.79	0.09%	4.90%	22.50%	27.95%	0.0263%
Walmart Inc	WMT	$ 276,506.40	1.13%	2.21%	7.00%	9.29%	0.1050%
WestRock Co	WRK	$ 13,160.61	0.05%	3.33%	9.50%	12.99%	0.0070%
Western Union Co/The	WU	$ 8,345.82	0.03%	4.09%	7.00%	11.23%	0.0038%
Weyerhaeuser Co	WY	$ 23,282.46	0.10%	4.43%	21.50%	26.41%	0.0251%
Wynn Resorts Ltd	WYNN	$ 13,410.77	0.05%	2.43%	19.50%	22.17%	0.0122%
Cimarex Energy Co	XEC	$ 9,359.96	0.04%	0.73%	39.00%	39.87%	0.0153%
Xcel Energy Inc	XEL	$ 24,147.21	0.10%	3.29%	5.50%	8.88%	0.0088%
Xilinx Inc	XLNX	$ 20,799.65	0.09%	1.75%	9.50%	11.33%	0.0096%
Exxon Mobil Corp	XOM	$ 362,345.70	1.48%	3.86%	18.00%	22.21%	0.3291%
DENTSPLY SIRONA Inc	XRAY	$ 8,041.42	0.03%	0.97%	6.50%	7.50%	0.0025%
Xerox Corp	XRX	$ 6,915.82	0.03%	3.69%	2.50%	6.24%	0.0018%
Xylem Inc/NY	XYL	$ 14,420.08	0.06%	1.05%	15.50%	16.63%	0.0098%
Yum! Brands Inc	YUM	$ 28,572.83	0.12%	1.74%	9.50%	11.32%	0.0132%
Zimmer Biomet Holdings Inc	ZBH	$ 26,232.50	0.11%	0.77%	5.00%	5.79%	0.0062%
Zions Bancorp NA	ZION	$ 10,068.55	0.04%	2.33%	14.50%	17.00%	0.0070%
Zoetis Inc	ZTS	$ 43,922.15	0.18%	0.55%	13.50%	14.09%	0.0253%
Total Market Capitalization:		24,452,595.26					16.71%

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

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 140 of 176

Bloomberg and Value Line Beta Coefficients

Company	Ticker	[1] Bloomberg	[2] Value Line
ALLETE, Inc.	ALE	0.477	0.700
Alliant Energy Corporation	LNT	0.424	0.650
Ameren Corporation	AEE	0.345	0.600
American Electric Power Company, Inc.	AEP	0.463	0.600
Avangrid, Inc.	AGR	0.478	0.300
Black Hills Corporation	BKH	0.531	0.850
CMS Energy Corporation	CMS	0.431	0.550
DTE Energy Company	DTE	0.435	0.600
El Paso Electric	EE	0.451	0.750
Hawaiian Electric Industries, Inc.	HE	0.508	0.650
NextEra Energy, Inc.	NEE	0.440	0.600
NorthWestern Corporation	NWE	0.429	0.650
OGE Energy Corp.	OGE	0.603	0.900
Otter Tail Corporation	OTTR	0.654	0.800
Pinnacle West Capital Corporation	PNW	0.435	0.650
PNM Resources, Inc.	PNM	0.518	0.750
Portland General Electric Company	POR	0.412	0.650
Southern Company	SO	0.322	0.500
WEC Energy Group, Inc.	WEC	0.422	0.550
Xcel Energy Inc.	XEL	0.407	0.600
Mean		0.459	0.645

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

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 141 of 176

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]
					CAPM	
	Risk-Free Rate	Average Beta Coefficient	Bloomberg Market DCF Derived	Value Line Market DCF Derived	Bloomberg MRP	Value Line MRP
PROXY GROUP AVERAGE BLOOMBERG BETA COEFFICIENT						
Current 30-Year Treasury [7]	3.19%	0.459	12.10%	13.52%	8.75%	9.40%
Near-Term Projected 30-Year Treasury [8]	3.52%	0.459	12.10%	13.52%	9.07%	9.72%
Mean					8.91%	9.56%

					CAPM	
	Risk-Free Rate	Average Beta Coefficient	Bloomberg Market DCF Derived	Value Line Market DCF Derived	Bloomberg MRP	Value Line MRP
PROXY GROUP AVERAGE VALUE LINE AVERAGE BETA COEFFICIENT						
Current 30-Year Treasury [7]	3.19%	0.645	12.10%	13.52%	11.00%	11.91%
Near-Term Projected 30-Year Treasury [8]	3.52%	0.645	12.10%	13.52%	11.32%	12.24%
Mean					11.16%	12.07%

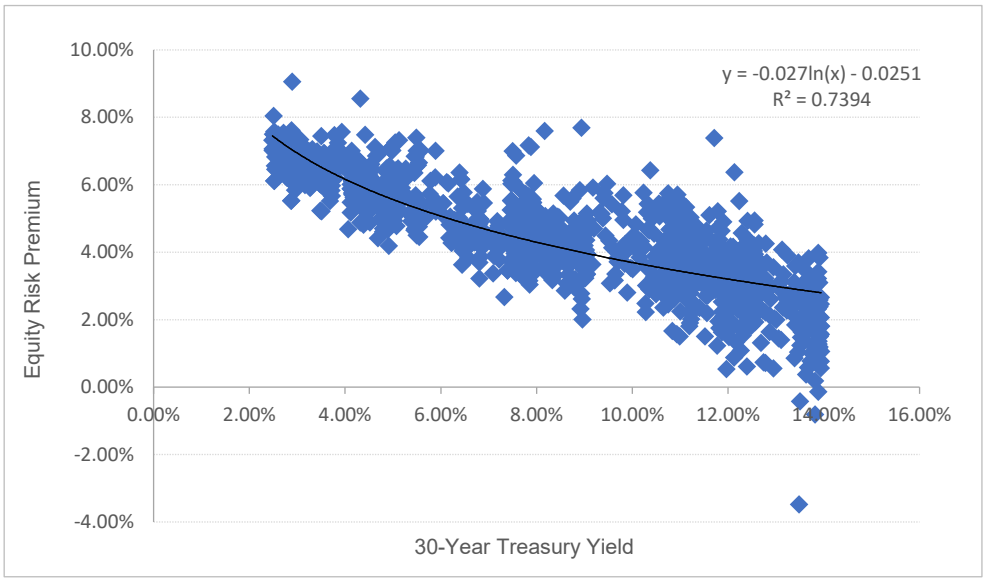
Notes:
[1] S*ee Notes [7] and [8]*
[2] Source: RBH-4
[3] Source: RBH-3
[4] Source: RBH-3
[5] Equals Col. [1] + (Col. [2] x Col. [3])
[6] Equals Col. [1] + (Col. [2] x Col. [4])
[7] Source: Bloomberg Professional
[8] Blue Chip Financial Forecasts, Vol. 37, No. 10, October 1, 2018, at 2.

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 142 of 176

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 143 of 176

Bond Yield Plus Risk Premium

[1]	[2]	[3]	[4]	[5]
Constant	Slope	30-Year Treasury Yield	Risk Premium	Return on Equity
-2.51%	-2.70%			
Current 30-Year Treasury		3.19%	6.77%	9.97%
Near-Term Projected 30-Year Treasury		3.52%	6.51%	10.03%
Long-Term Projected 30-Year Treasury		4.30%	5.97%	10.27%



Notes:
[1] Constant of regression equation
[2] Slope of regression equation
[3] Source: Current = Bloomberg Professional,
Near Term Projected = Blue Chip Financial Forecasts, Vol. 37, No. 10, October 1, 2018, at 2.
Long Term Projected = Blue Chip Financial Forecasts, Vol. 37, No. 6, June 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]	[7]	[8]	[9]
Date	Return on Equity (%)	30 Year Treasury	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%

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 144 of 176

[6]	[7]	[8]	[9]
Date	Return on Equity (%)	30 Year Treasury	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%

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 145 of 176

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 146 of 176

[6]	[7]	[8]	[9]
Date	Return on Equity (%)	30 Year Treasury	Risk Premium
12/30/1980	14.50%	11.22%	3.28%
12/30/1980	14.95%	11.22%	3.73%
12/31/1980	13.39%	11.22%	2.17%
1/2/1981	15.25%	11.22%	4.03%
1/7/1981	14.30%	11.21%	3.09%
1/19/1981	15.25%	11.20%	4.05%
1/23/1981	13.10%	11.20%	1.90%
1/23/1981	14.40%	11.20%	3.20%
1/26/1981	15.25%	11.20%	4.05%
1/27/1981	15.00%	11.21%	3.79%
1/31/1981	13.47%	11.22%	2.25%
2/3/1981	15.25%	11.23%	4.02%
2/5/1981	15.75%	11.25%	4.50%
2/11/1981	15.60%	11.28%	4.32%
2/20/1981	15.25%	11.33%	3.92%
3/11/1981	15.40%	11.49%	3.91%
3/12/1981	14.51%	11.50%	3.01%
3/12/1981	16.00%	11.50%	4.50%
3/13/1981	13.02%	11.52%	1.50%
3/18/1981	16.19%	11.55%	4.64%
3/19/1981	13.75%	11.56%	2.19%
3/23/1981	14.30%	11.58%	2.72%
3/25/1981	15.30%	11.60%	3.70%
4/1/1981	14.53%	11.68%	2.85%
4/3/1981	19.10%	11.71%	7.39%
4/9/1981	15.00%	11.78%	3.22%
4/9/1981	15.30%	11.78%	3.52%
4/9/1981	16.50%	11.78%	4.72%
4/9/1981	17.00%	11.78%	5.22%
4/10/1981	13.75%	11.80%	1.95%
4/13/1981	13.57%	11.82%	1.75%
4/15/1981	15.30%	11.85%	3.45%
4/16/1981	13.50%	11.87%	1.63%
4/17/1981	14.10%	11.87%	2.23%
4/21/1981	14.00%	11.90%	2.10%
4/21/1981	16.80%	11.90%	4.90%
4/24/1981	16.00%	11.95%	4.05%
4/27/1981	12.50%	11.97%	0.53%
4/27/1981	13.61%	11.97%	1.64%
4/29/1981	13.65%	12.00%	1.65%
4/30/1981	13.50%	12.02%	1.48%
5/4/1981	16.22%	12.05%	4.17%
5/5/1981	14.40%	12.07%	2.33%
5/7/1981	16.25%	12.11%	4.14%
5/7/1981	16.27%	12.11%	4.16%
5/8/1981	13.00%	12.13%	0.87%
5/8/1981	16.00%	12.13%	3.87%
5/12/1981	13.50%	12.16%	1.34%
5/15/1981	15.75%	12.22%	3.53%
5/18/1981	14.88%	12.23%	2.65%
5/20/1981	16.00%	12.26%	3.74%

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 147 of 176

[6]	[7]	[8]	[9]
Date	Return on Equity (%)	30 Year Treasury	Risk Premium
5/21/1981	14.00%	12.27%	1.73%
5/26/1981	14.90%	12.30%	2.60%
5/27/1981	15.00%	12.31%	2.69%
5/29/1981	15.50%	12.34%	3.16%
6/1/1981	16.50%	12.35%	4.15%
6/3/1981	14.67%	12.37%	2.30%
6/5/1981	13.00%	12.39%	0.61%
6/10/1981	16.75%	12.42%	4.33%
6/17/1981	14.40%	12.46%	1.94%
6/18/1981	16.33%	12.47%	3.86%
6/25/1981	14.75%	12.51%	2.24%
6/26/1981	16.00%	12.52%	3.48%
6/30/1981	15.25%	12.54%	2.71%
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%

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 148 of 176

[6]	[7]	[8]	[9]
Date	Return on Equity (%)	30 Year Treasury	Risk Premium
11/5/1981	16.60%	13.55%	3.05%
11/6/1981	15.17%	13.56%	1.61%
11/24/1981	15.50%	13.61%	1.89%
11/25/1981	15.25%	13.61%	1.64%
11/25/1981	15.35%	13.61%	1.74%
11/25/1981	16.10%	13.61%	2.49%
11/25/1981	16.10%	13.61%	2.49%
12/1/1981	15.70%	13.61%	2.09%
12/1/1981	16.00%	13.61%	2.39%
12/1/1981	16.49%	13.61%	2.88%
12/1/1981	16.50%	13.61%	2.89%
12/4/1981	16.00%	13.61%	2.39%
12/11/1981	16.25%	13.63%	2.62%
12/14/1981	14.00%	13.63%	0.37%
12/15/1981	15.81%	13.63%	2.18%
12/15/1981	16.00%	13.63%	2.37%
12/16/1981	15.25%	13.63%	1.62%
12/17/1981	16.50%	13.63%	2.87%
12/18/1981	15.45%	13.63%	1.82%
12/30/1981	14.25%	13.67%	0.58%
12/30/1981	16.00%	13.67%	2.33%
12/30/1981	16.25%	13.67%	2.58%
12/31/1981	16.15%	13.67%	2.48%
1/4/1982	15.50%	13.67%	1.83%
1/11/1982	14.50%	13.72%	0.78%
1/11/1982	17.00%	13.72%	3.28%
1/13/1982	14.75%	13.74%	1.01%
1/14/1982	15.75%	13.75%	2.00%
1/15/1982	15.00%	13.76%	1.24%
1/15/1982	16.50%	13.76%	2.74%
1/22/1982	16.25%	13.79%	2.46%
1/27/1982	16.84%	13.81%	3.03%
1/28/1982	13.00%	13.81%	-0.81%
1/29/1982	15.50%	13.82%	1.68%
2/1/1982	15.85%	13.82%	2.03%
2/3/1982	16.44%	13.84%	2.60%
2/8/1982	15.50%	13.86%	1.64%
2/11/1982	16.00%	13.88%	2.12%
2/11/1982	16.20%	13.88%	2.32%
2/17/1982	15.00%	13.89%	1.11%
2/19/1982	15.17%	13.89%	1.28%
2/26/1982	15.25%	13.89%	1.36%
3/1/1982	15.03%	13.89%	1.14%
3/1/1982	16.00%	13.89%	2.11%
3/3/1982	15.00%	13.88%	1.12%
3/8/1982	17.10%	13.88%	3.22%
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%

[6]	[7]	[8]	[9]
Date	Return on Equity (%)	30 Year Treasury	Risk Premium
3/31/1982	17.00%	13.91%	3.09%
4/1/1982	14.70%	13.91%	0.79%
4/1/1982	16.50%	13.91%	2.59%
4/2/1982	15.50%	13.91%	1.59%
4/5/1982	15.50%	13.92%	1.58%
4/8/1982	16.40%	13.93%	2.47%
4/13/1982	14.50%	13.94%	0.56%
4/23/1982	15.75%	13.94%	1.81%
4/27/1982	15.00%	13.94%	1.06%
4/28/1982	15.75%	13.94%	1.81%
4/30/1982	14.70%	13.94%	0.76%
4/30/1982	15.50%	13.94%	1.56%
5/3/1982	16.60%	13.94%	2.66%
5/4/1982	16.00%	13.94%	2.06%
5/14/1982	15.50%	13.92%	1.58%
5/18/1982	15.42%	13.92%	1.50%
5/19/1982	14.69%	13.92%	0.77%
5/20/1982	15.00%	13.91%	1.09%
5/20/1982	15.10%	13.91%	1.19%
5/20/1982	15.50%	13.91%	1.59%
5/20/1982	16.30%	13.91%	2.39%
5/21/1982	17.75%	13.91%	3.84%
5/27/1982	15.00%	13.89%	1.11%
5/28/1982	15.50%	13.89%	1.61%
5/28/1982	17.00%	13.89%	3.11%
6/1/1982	13.75%	13.89%	-0.14%
6/1/1982	16.60%	13.89%	2.71%
6/9/1982	17.86%	13.88%	3.98%
6/14/1982	15.75%	13.88%	1.87%
6/15/1982	14.85%	13.88%	0.97%
6/18/1982	15.50%	13.87%	1.63%
6/21/1982	14.90%	13.87%	1.03%
6/23/1982	16.00%	13.86%	2.14%
6/23/1982	16.17%	13.86%	2.31%
6/24/1982	14.85%	13.86%	0.99%
6/25/1982	14.70%	13.86%	0.84%
7/1/1982	16.00%	13.84%	2.16%
7/2/1982	15.62%	13.84%	1.78%
7/2/1982	17.00%	13.84%	3.16%
7/13/1982	14.00%	13.82%	0.18%
7/13/1982	16.80%	13.82%	2.98%
7/14/1982	15.76%	13.82%	1.94%
7/14/1982	16.02%	13.82%	2.20%
7/19/1982	16.50%	13.80%	2.70%
7/22/1982	14.50%	13.77%	0.73%
7/22/1982	17.00%	13.77%	3.23%
7/27/1982	16.75%	13.75%	3.00%
7/29/1982	16.50%	13.74%	2.76%
8/11/1982	17.50%	13.68%	3.82%
8/18/1982	17.07%	13.63%	3.44%
8/20/1982	15.73%	13.60%	2.13%

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 149 of 176

[6]	[7]	[8]	[9]
Date	Return on Equity (%)	30 Year Treasury	Risk Premium
8/25/1982	16.00%	13.57%	2.43%
8/26/1982	15.50%	13.56%	1.94%
8/30/1982	15.00%	13.55%	1.45%
9/3/1982	16.20%	13.53%	2.67%
9/8/1982	15.00%	13.52%	1.48%
9/15/1982	13.08%	13.50%	-0.42%
9/15/1982	16.25%	13.50%	2.75%
9/16/1982	16.00%	13.50%	2.50%
9/17/1982	15.25%	13.50%	1.75%
9/23/1982	17.17%	13.47%	3.70%
9/24/1982	14.50%	13.46%	1.04%
9/27/1982	15.25%	13.46%	1.79%
10/1/1982	15.50%	13.42%	2.08%
10/15/1982	15.90%	13.32%	2.58%
10/22/1982	15.75%	13.24%	2.51%
10/22/1982	17.15%	13.24%	3.91%
10/29/1982	15.54%	13.16%	2.38%
11/1/1982	15.50%	13.15%	2.35%
11/3/1982	17.20%	13.13%	4.07%
11/4/1982	16.25%	13.11%	3.14%
11/5/1982	16.20%	13.09%	3.11%
11/9/1982	16.00%	13.05%	2.95%
11/23/1982	15.50%	12.89%	2.61%
11/23/1982	15.85%	12.89%	2.96%
11/30/1982	16.50%	12.81%	3.69%
12/1/1982	17.04%	12.79%	4.25%
12/6/1982	15.00%	12.73%	2.27%
12/6/1982	16.35%	12.73%	3.62%
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%

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 150 of 176

[6]	[7]	[8]	[9]
Date	Return on Equity (%)	30 Year Treasury	Risk Premium
1/25/1983	15.85%	12.19%	3.66%
1/27/1983	16.14%	12.17%	3.97%
2/1/1983	18.50%	12.13%	6.37%
2/4/1983	14.00%	12.10%	1.90%
2/10/1983	15.00%	12.06%	2.94%
2/21/1983	15.50%	11.98%	3.52%
2/22/1983	15.50%	11.97%	3.53%
2/23/1983	15.10%	11.96%	3.14%
2/23/1983	16.00%	11.96%	4.04%
3/2/1983	15.25%	11.89%	3.36%
3/9/1983	15.20%	11.82%	3.38%
3/15/1983	13.00%	11.77%	1.23%
3/18/1983	15.25%	11.73%	3.52%
3/23/1983	15.40%	11.69%	3.71%
3/24/1983	15.00%	11.67%	3.33%
3/29/1983	15.50%	11.63%	3.87%
3/30/1983	16.71%	11.61%	5.10%
3/31/1983	15.00%	11.59%	3.41%
4/4/1983	15.20%	11.58%	3.62%
4/8/1983	15.50%	11.51%	3.99%
4/11/1983	14.81%	11.49%	3.32%
4/19/1983	14.50%	11.38%	3.12%
4/20/1983	16.00%	11.36%	4.64%
4/29/1983	16.00%	11.24%	4.76%
5/1/1983	14.50%	11.24%	3.26%
5/9/1983	15.50%	11.15%	4.35%
5/11/1983	16.46%	11.12%	5.34%
5/12/1983	14.14%	11.11%	3.03%
5/18/1983	15.00%	11.05%	3.95%
5/23/1983	14.90%	11.01%	3.89%
5/23/1983	15.50%	11.01%	4.49%
5/25/1983	15.50%	10.98%	4.52%
5/27/1983	15.00%	10.96%	4.04%
5/31/1983	14.00%	10.95%	3.05%
5/31/1983	15.50%	10.95%	4.55%
6/2/1983	14.50%	10.93%	3.57%
6/17/1983	15.03%	10.84%	4.19%
7/1/1983	14.80%	10.78%	4.02%
7/1/1983	14.90%	10.78%	4.12%
7/8/1983	16.25%	10.76%	5.49%
7/13/1983	13.20%	10.75%	2.45%
7/19/1983	15.00%	10.74%	4.26%
7/19/1983	15.10%	10.74%	4.36%
7/25/1983	16.25%	10.73%	5.52%
7/28/1983	15.90%	10.74%	5.16%
8/3/1983	16.34%	10.75%	5.59%
8/3/1983	16.50%	10.75%	5.75%
8/19/1983	15.00%	10.80%	4.20%
8/22/1983	15.50%	10.80%	4.70%
8/22/1983	16.40%	10.80%	5.60%
8/31/1983	14.75%	10.84%	3.91%

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 151 of 176

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 152 of 176

[6]	[7]	[8]	[9]
Date	Return on Equity (%)	30 Year Treasury	Risk Premium
9/7/1983	15.00%	10.86%	4.14%
9/14/1983	15.78%	10.89%	4.89%
9/16/1983	15.00%	10.90%	4.10%
9/19/1983	14.50%	10.91%	3.59%
9/20/1983	16.50%	10.91%	5.59%
9/28/1983	14.50%	10.94%	3.56%
9/29/1983	15.50%	10.95%	4.55%
9/30/1983	15.25%	10.95%	4.30%
9/30/1983	16.15%	10.95%	5.20%
10/4/1983	14.80%	10.96%	3.84%
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%

[6]	[7]	[8]	[9]
Date	Return on Equity (%)	30 Year Treasury	Risk Premium
2/28/1984	14.50%	11.51%	2.99%
3/2/1984	14.25%	11.54%	2.71%
3/20/1984	16.00%	11.64%	4.36%
3/23/1984	15.50%	11.67%	3.83%
3/26/1984	14.71%	11.68%	3.03%
4/2/1984	15.50%	11.71%	3.79%
4/6/1984	14.74%	11.75%	2.99%
4/11/1984	15.72%	11.78%	3.94%
4/17/1984	15.00%	11.81%	3.19%
4/18/1984	16.20%	11.82%	4.38%
4/25/1984	14.64%	11.85%	2.79%
4/30/1984	14.40%	11.87%	2.53%
5/16/1984	14.69%	11.98%	2.71%
5/16/1984	15.00%	11.98%	3.02%
5/22/1984	14.40%	12.02%	2.38%
5/29/1984	15.10%	12.06%	3.04%
6/13/1984	15.25%	12.15%	3.10%
6/15/1984	15.60%	12.17%	3.43%
6/22/1984	16.25%	12.21%	4.04%
6/29/1984	15.25%	12.26%	2.99%
7/2/1984	13.35%	12.27%	1.08%
7/10/1984	16.00%	12.31%	3.69%
7/12/1984	16.50%	12.32%	4.18%
7/13/1984	16.25%	12.33%	3.92%
7/17/1984	14.14%	12.35%	1.79%
7/18/1984	15.30%	12.36%	2.94%
7/18/1984	15.50%	12.36%	3.14%
7/19/1984	14.30%	12.37%	1.93%
7/24/1984	16.79%	12.39%	4.40%
7/31/1984	16.00%	12.43%	3.57%
8/3/1984	14.25%	12.44%	1.81%
8/17/1984	14.30%	12.49%	1.81%
8/20/1984	15.00%	12.49%	2.51%
8/27/1984	16.30%	12.51%	3.79%
8/31/1984	15.55%	12.52%	3.03%
9/6/1984	16.00%	12.53%	3.47%
9/10/1984	14.75%	12.54%	2.21%
9/13/1984	15.00%	12.55%	2.45%
9/17/1984	17.38%	12.56%	4.82%
9/26/1984	14.50%	12.57%	1.93%
9/28/1984	15.00%	12.57%	2.43%
9/28/1984	16.25%	12.57%	3.68%
10/9/1984	14.75%	12.58%	2.17%
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%

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 153 of 176

[6]	[7]	[8]	[9]
Date	Return on Equity (%)	30 Year Treasury	Risk Premium
11/20/1984	15.92%	12.58%	3.34%
11/23/1984	15.00%	12.58%	2.42%
11/28/1984	16.15%	12.57%	3.58%
12/3/1984	15.80%	12.56%	3.24%
12/4/1984	16.50%	12.56%	3.94%
12/18/1984	16.40%	12.53%	3.87%
12/19/1984	14.75%	12.53%	2.22%
12/19/1984	15.00%	12.53%	2.47%
12/20/1984	16.00%	12.53%	3.47%
12/28/1984	16.00%	12.50%	3.50%
1/3/1985	14.75%	12.49%	2.26%
1/10/1985	15.75%	12.47%	3.28%
1/11/1985	16.30%	12.46%	3.84%
1/23/1985	15.80%	12.43%	3.37%
1/24/1985	15.82%	12.43%	3.39%
1/25/1985	16.75%	12.42%	4.33%
1/30/1985	14.90%	12.40%	2.50%
1/31/1985	14.75%	12.39%	2.36%
2/8/1985	14.47%	12.35%	2.12%
3/1/1985	13.84%	12.31%	1.53%
3/8/1985	16.85%	12.28%	4.57%
3/14/1985	15.50%	12.25%	3.25%
3/15/1985	15.62%	12.25%	3.37%
3/29/1985	15.62%	12.17%	3.45%
4/3/1985	14.60%	12.14%	2.46%
4/9/1985	15.50%	12.11%	3.39%
4/16/1985	15.70%	12.06%	3.64%
4/22/1985	14.00%	12.02%	1.98%
4/26/1985	15.50%	11.98%	3.52%
4/29/1985	15.00%	11.97%	3.03%
5/2/1985	14.68%	11.94%	2.74%
5/8/1985	15.62%	11.89%	3.73%
5/10/1985	16.50%	11.87%	4.63%
5/29/1985	14.61%	11.73%	2.88%
5/31/1985	16.00%	11.71%	4.29%
6/14/1985	15.50%	11.61%	3.89%
7/9/1985	15.00%	11.45%	3.55%
7/16/1985	14.50%	11.39%	3.11%
7/26/1985	14.50%	11.33%	3.17%
8/2/1985	14.80%	11.29%	3.51%
8/7/1985	15.00%	11.27%	3.73%
8/28/1985	14.25%	11.15%	3.10%
8/28/1985	15.50%	11.15%	4.35%
8/29/1985	14.50%	11.15%	3.35%
9/9/1985	14.60%	11.11%	3.49%
9/9/1985	14.90%	11.11%	3.79%
9/17/1985	14.90%	11.08%	3.82%
9/23/1985	15.00%	11.06%	3.94%
9/27/1985	15.50%	11.05%	4.45%
9/27/1985	15.80%	11.05%	4.75%
10/2/1985	14.00%	11.03%	2.97%

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 154 of 176

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 155 of 176

[6]	[7]	[8]	[9]
Date	Return on Equity (%)	30 Year Treasury	Risk Premium
10/2/1985	14.75%	11.03%	3.72%
10/3/1985	15.25%	11.03%	4.22%
10/24/1985	15.40%	10.96%	4.44%
10/24/1985	15.82%	10.96%	4.86%
10/24/1985	15.85%	10.96%	4.89%
10/28/1985	16.00%	10.95%	5.05%
10/29/1985	16.65%	10.94%	5.71%
10/31/1985	15.06%	10.93%	4.13%
11/4/1985	14.50%	10.92%	3.58%
11/7/1985	15.50%	10.90%	4.60%
11/8/1985	14.30%	10.89%	3.41%
12/12/1985	14.75%	10.73%	4.02%
12/18/1985	15.00%	10.69%	4.31%
12/20/1985	14.50%	10.67%	3.83%
12/20/1985	14.50%	10.67%	3.83%
12/20/1985	15.00%	10.67%	4.33%
1/24/1986	15.40%	10.41%	4.99%
1/31/1986	15.00%	10.35%	4.65%
2/5/1986	15.00%	10.32%	4.68%
2/5/1986	15.75%	10.32%	5.43%
2/10/1986	13.30%	10.29%	3.01%
2/11/1986	12.50%	10.28%	2.22%
2/14/1986	14.40%	10.24%	4.16%
2/18/1986	16.00%	10.23%	5.77%
2/24/1986	14.50%	10.18%	4.32%
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%

[6]	[7]	[8]	[9]
Date	Return on Equity (%)	30 Year Treasury	Risk Premium
8/6/1986	13.50%	8.44%	5.06%
8/14/1986	13.50%	8.35%	5.15%
9/16/1986	12.75%	8.06%	4.69%
9/19/1986	13.25%	8.03%	5.22%
10/1/1986	14.00%	7.95%	6.05%
10/3/1986	13.40%	7.93%	5.47%
10/31/1986	13.50%	7.77%	5.73%
11/5/1986	13.00%	7.75%	5.25%
12/3/1986	12.90%	7.58%	5.32%
12/4/1986	14.44%	7.58%	6.86%
12/16/1986	13.60%	7.52%	6.08%
12/22/1986	13.80%	7.51%	6.29%
12/30/1986	13.00%	7.49%	5.51%
1/2/1987	13.00%	7.49%	5.51%
1/12/1987	12.40%	7.47%	4.93%
1/27/1987	12.71%	7.46%	5.25%
3/2/1987	12.47%	7.47%	5.00%
3/3/1987	13.60%	7.47%	6.13%
3/4/1987	12.38%	7.47%	4.91%
3/10/1987	13.50%	7.47%	6.03%
3/13/1987	13.00%	7.47%	5.53%
3/31/1987	13.00%	7.46%	5.54%
4/6/1987	13.00%	7.47%	5.53%
4/14/1987	12.50%	7.49%	5.01%
4/16/1987	14.50%	7.50%	7.00%
4/27/1987	12.00%	7.54%	4.46%
5/5/1987	12.85%	7.58%	5.27%
5/12/1987	12.65%	7.62%	5.03%
5/28/1987	13.50%	7.70%	5.80%
6/15/1987	13.20%	7.78%	5.42%
6/29/1987	15.00%	7.83%	7.17%
6/30/1987	12.50%	7.84%	4.66%
7/8/1987	12.00%	7.86%	4.14%
7/10/1987	12.90%	7.86%	5.04%
7/15/1987	13.50%	7.88%	5.62%
7/16/1987	13.50%	7.88%	5.62%
7/16/1987	15.00%	7.88%	7.12%
7/27/1987	13.00%	7.92%	5.08%
7/27/1987	13.40%	7.92%	5.48%
7/27/1987	13.50%	7.92%	5.58%
7/31/1987	12.98%	7.95%	5.03%
8/26/1987	12.63%	8.06%	4.57%
8/26/1987	12.75%	8.06%	4.69%
8/27/1987	13.25%	8.06%	5.19%
9/9/1987	13.00%	8.14%	4.86%
9/30/1987	12.75%	8.31%	4.44%
9/30/1987	13.00%	8.31%	4.69%
10/2/1987	11.50%	8.33%	3.17%
10/15/1987	13.00%	8.43%	4.57%
11/2/1987	13.00%	8.55%	4.45%
11/19/1987	13.00%	8.64%	4.36%

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 156 of 176

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 157 of 176

[6]	[7]	[8]	[9]
Date	Return on Equity (%)	30 Year Treasury	Risk Premium
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%
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%

[6]	[7]	[8]	[9]
Date	Return on Equity (%)	30 Year Treasury	Risk Premium
5/5/1989	12.40%	9.05%	3.35%
6/2/1989	13.20%	9.00%	4.20%
6/8/1989	13.50%	8.98%	4.52%
6/27/1989	13.25%	8.91%	4.34%
6/30/1989	13.00%	8.90%	4.10%
8/14/1989	12.50%	8.77%	3.73%
9/28/1989	12.25%	8.63%	3.62%
10/24/1989	12.50%	8.54%	3.96%
11/9/1989	13.00%	8.49%	4.51%
12/15/1989	13.00%	8.34%	4.66%
12/20/1989	12.90%	8.32%	4.58%
12/21/1989	12.90%	8.31%	4.59%
12/27/1989	12.50%	8.29%	4.21%
12/27/1989	13.00%	8.29%	4.71%
1/10/1990	12.80%	8.24%	4.56%
1/11/1990	12.90%	8.24%	4.66%
1/17/1990	12.80%	8.22%	4.58%
1/26/1990	12.00%	8.20%	3.80%
2/9/1990	12.10%	8.17%	3.93%
2/24/1990	12.86%	8.15%	4.71%
3/30/1990	12.90%	8.16%	4.74%
4/4/1990	15.76%	8.17%	7.59%
4/12/1990	12.52%	8.18%	4.34%
4/19/1990	12.75%	8.20%	4.55%
5/21/1990	12.10%	8.28%	3.82%
5/29/1990	12.40%	8.30%	4.10%
5/31/1990	12.00%	8.30%	3.70%
6/4/1990	12.90%	8.30%	4.60%
6/6/1990	12.25%	8.31%	3.94%
6/15/1990	13.20%	8.32%	4.88%
6/20/1990	12.92%	8.32%	4.60%
6/27/1990	12.90%	8.33%	4.57%
6/29/1990	12.50%	8.33%	4.17%
7/6/1990	12.10%	8.34%	3.76%
7/6/1990	12.35%	8.34%	4.01%
8/10/1990	12.55%	8.41%	4.14%
8/16/1990	13.21%	8.43%	4.78%
8/22/1990	13.10%	8.45%	4.65%
8/24/1990	13.00%	8.46%	4.54%
9/26/1990	11.45%	8.59%	2.86%
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%

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 158 of 176

[6]	[7]	[8]	[9]
Date	Return on Equity (%)	30 Year Treasury	Risk Premium
12/27/1990	12.79%	8.66%	4.13%
1/2/1991	13.10%	8.65%	4.45%
1/4/1991	12.50%	8.65%	3.85%
1/15/1991	12.75%	8.64%	4.11%
1/25/1991	11.70%	8.63%	3.07%
2/4/1991	12.50%	8.60%	3.90%
2/7/1991	12.50%	8.59%	3.91%
2/12/1991	13.00%	8.58%	4.43%
2/14/1991	12.72%	8.57%	4.15%
2/22/1991	12.80%	8.55%	4.25%
3/6/1991	13.10%	8.53%	4.57%
3/8/1991	12.30%	8.52%	3.78%
3/8/1991	13.00%	8.52%	4.48%
4/22/1991	13.00%	8.49%	4.51%
5/7/1991	13.50%	8.47%	5.03%
5/13/1991	13.25%	8.47%	4.78%
5/30/1991	12.75%	8.44%	4.31%
6/12/1991	12.00%	8.41%	3.59%
6/25/1991	11.70%	8.39%	3.31%
6/28/1991	12.50%	8.38%	4.12%
7/1/1991	12.00%	8.38%	3.62%
7/3/1991	12.50%	8.37%	4.13%
7/19/1991	12.10%	8.34%	3.76%
8/1/1991	12.90%	8.32%	4.58%
8/16/1991	13.20%	8.29%	4.91%
9/27/1991	12.50%	8.23%	4.27%
9/30/1991	12.25%	8.23%	4.02%
10/17/1991	13.00%	8.20%	4.80%
10/23/1991	12.50%	8.20%	4.30%
10/23/1991	12.55%	8.20%	4.35%
10/31/1991	11.80%	8.19%	3.61%
11/1/1991	12.00%	8.19%	3.81%
11/5/1991	12.25%	8.19%	4.06%
11/12/1991	12.50%	8.18%	4.32%
11/12/1991	13.25%	8.18%	5.07%
11/25/1991	12.40%	8.18%	4.22%
11/26/1991	11.60%	8.18%	3.42%
11/26/1991	12.50%	8.18%	4.32%
11/27/1991	12.10%	8.18%	3.92%
12/18/1991	12.25%	8.15%	4.10%
12/19/1991	12.60%	8.15%	4.45%
12/19/1991	12.80%	8.15%	4.65%
12/20/1991	12.65%	8.14%	4.51%
1/9/1992	12.80%	8.09%	4.71%
1/16/1992	12.75%	8.07%	4.68%
1/21/1992	12.00%	8.06%	3.94%
1/22/1992	13.00%	8.06%	4.94%
1/27/1992	12.65%	8.05%	4.60%
1/31/1992	12.00%	8.04%	3.96%
2/11/1992	12.40%	8.03%	4.37%
2/25/1992	12.50%	8.01%	4.49%

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 159 of 176

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 160 of 176

[6]	[7]	[8]	[9]
Date	Return on Equity (%)	30 Year Treasury	Risk Premium
3/16/1992	11.43%	7.98%	3.45%
3/18/1992	12.28%	7.98%	4.30%
4/2/1992	12.10%	7.95%	4.15%
4/9/1992	11.45%	7.94%	3.51%
4/10/1992	11.50%	7.93%	3.57%
4/14/1992	11.50%	7.93%	3.57%
5/5/1992	11.50%	7.89%	3.61%
5/12/1992	11.87%	7.88%	3.99%
5/12/1992	12.46%	7.88%	4.58%
6/1/1992	12.30%	7.87%	4.43%
6/12/1992	10.90%	7.86%	3.04%
6/26/1992	12.35%	7.85%	4.50%
6/29/1992	11.00%	7.85%	3.15%
6/30/1992	13.00%	7.85%	5.15%
7/13/1992	11.90%	7.84%	4.06%
7/13/1992	13.50%	7.84%	5.66%
7/22/1992	11.20%	7.83%	3.37%
8/3/1992	12.00%	7.81%	4.19%
8/6/1992	12.50%	7.80%	4.70%
9/22/1992	12.00%	7.71%	4.29%
9/28/1992	11.40%	7.71%	3.69%
9/30/1992	11.75%	7.70%	4.05%
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]	[7]	[8]	[9]
Date	Return on Equity (%)	30 Year Treasury	Risk Premium
6/18/1993	12.10%	7.18%	4.92%
6/25/1993	11.67%	7.17%	4.50%
7/21/1993	11.38%	7.10%	4.28%
7/23/1993	10.46%	7.09%	3.37%
8/24/1993	11.50%	6.96%	4.54%
9/21/1993	10.50%	6.81%	3.69%
9/29/1993	11.47%	6.77%	4.70%
9/30/1993	11.60%	6.76%	4.84%
11/2/1993	10.80%	6.60%	4.20%
11/12/1993	12.00%	6.57%	5.43%
11/26/1993	11.00%	6.52%	4.48%
12/14/1993	10.55%	6.48%	4.07%
12/16/1993	10.60%	6.48%	4.12%
12/21/1993	11.30%	6.47%	4.83%
1/4/1994	10.07%	6.44%	3.63%
1/13/1994	11.00%	6.42%	4.58%
1/21/1994	11.00%	6.40%	4.60%
1/28/1994	11.35%	6.39%	4.96%
2/3/1994	11.40%	6.38%	5.02%
2/17/1994	10.60%	6.36%	4.24%
2/25/1994	11.25%	6.35%	4.90%
2/25/1994	12.00%	6.35%	5.65%
3/1/1994	11.00%	6.35%	4.65%
3/4/1994	11.00%	6.35%	4.65%
4/25/1994	11.00%	6.41%	4.59%
5/10/1994	11.75%	6.45%	5.30%
5/13/1994	10.50%	6.46%	4.04%
6/3/1994	11.00%	6.54%	4.46%
6/27/1994	11.40%	6.65%	4.75%
8/5/1994	12.75%	6.88%	5.87%
10/31/1994	10.00%	7.33%	2.67%
11/9/1994	10.85%	7.39%	3.46%
11/9/1994	10.85%	7.39%	3.46%
11/18/1994	11.20%	7.45%	3.75%
11/22/1994	11.60%	7.47%	4.13%
11/28/1994	11.06%	7.49%	3.57%
12/8/1994	11.50%	7.54%	3.96%
12/8/1994	11.70%	7.54%	4.16%
12/14/1994	10.95%	7.56%	3.39%
12/15/1994	11.50%	7.57%	3.93%
12/19/1994	11.50%	7.58%	3.92%
12/28/1994	12.15%	7.61%	4.54%
1/9/1995	12.28%	7.64%	4.64%
1/31/1995	11.00%	7.69%	3.31%
2/10/1995	12.60%	7.70%	4.90%
2/17/1995	11.90%	7.70%	4.20%
3/9/1995	11.50%	7.71%	3.79%
3/20/1995	12.00%	7.72%	4.28%
3/23/1995	12.81%	7.72%	5.09%
3/29/1995	11.60%	7.72%	3.88%
4/6/1995	11.10%	7.71%	3.39%

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 161 of 176

[6]	[7]	[8]	[9]
Date	Return on Equity (%)	30 Year Treasury	Risk Premium
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%
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%

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 162 of 176

[6]	[7]	[8]	[9]
Date	Return on Equity (%)	30 Year Treasury	Risk Premium
4/30/1998	12.20%	6.12%	6.08%
7/10/1998	11.40%	5.94%	5.46%
9/15/1998	11.90%	5.78%	6.12%
11/30/1998	12.60%	5.58%	7.02%
12/10/1998	12.20%	5.54%	6.66%
12/17/1998	12.10%	5.52%	6.58%
2/5/1999	10.30%	5.38%	4.92%
3/4/1999	10.50%	5.34%	5.16%
4/6/1999	10.94%	5.32%	5.62%
7/29/1999	10.75%	5.52%	5.23%
9/23/1999	10.75%	5.70%	5.05%
11/17/1999	11.10%	5.90%	5.20%
1/7/2000	11.50%	6.05%	5.45%
1/7/2000	11.50%	6.05%	5.45%
2/17/2000	10.60%	6.17%	4.43%
3/28/2000	11.25%	6.20%	5.05%
5/24/2000	11.00%	6.18%	4.82%
7/18/2000	12.20%	6.16%	6.04%
9/29/2000	11.16%	6.03%	5.13%
11/28/2000	12.90%	5.89%	7.01%
11/30/2000	12.10%	5.88%	6.22%
1/23/2001	11.25%	5.79%	5.46%
2/8/2001	11.50%	5.77%	5.73%
5/8/2001	10.75%	5.62%	5.13%
6/26/2001	11.00%	5.62%	5.38%
7/25/2001	11.02%	5.60%	5.42%
7/25/2001	11.02%	5.60%	5.42%
7/31/2001	11.00%	5.59%	5.41%
8/31/2001	10.50%	5.56%	4.94%
9/7/2001	10.75%	5.55%	5.20%
9/10/2001	11.00%	5.55%	5.45%
9/20/2001	10.00%	5.55%	4.45%
10/24/2001	10.30%	5.54%	4.76%
11/28/2001	10.60%	5.49%	5.11%
12/3/2001	12.88%	5.49%	7.39%
12/20/2001	12.50%	5.50%	7.00%
1/22/2002	10.00%	5.50%	4.50%
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%

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 163 of 176

[6]	[7]	[8]	[9]
Date	Return on Equity (%)	30 Year Treasury	Risk Premium
1/31/2003	12.45%	5.13%	7.32%
2/28/2003	12.30%	5.05%	7.25%
3/6/2003	10.75%	5.03%	5.72%
3/7/2003	9.96%	5.02%	4.94%
3/20/2003	12.00%	4.98%	7.02%
4/3/2003	12.00%	4.96%	7.04%
4/15/2003	11.15%	4.94%	6.21%
6/25/2003	10.75%	4.79%	5.96%
6/26/2003	10.75%	4.79%	5.96%
7/9/2003	9.75%	4.79%	4.96%
7/16/2003	9.75%	4.79%	4.96%
7/25/2003	9.50%	4.80%	4.70%
8/26/2003	10.50%	4.83%	5.67%
12/17/2003	9.85%	4.94%	4.91%
12/17/2003	10.70%	4.94%	5.76%
12/18/2003	11.50%	4.94%	6.56%
12/19/2003	12.00%	4.94%	7.06%
12/19/2003	12.00%	4.94%	7.06%
12/23/2003	10.50%	4.94%	5.56%
1/13/2004	12.00%	4.95%	7.05%
3/2/2004	10.75%	4.99%	5.76%
3/26/2004	10.25%	5.02%	5.23%
4/5/2004	11.25%	5.03%	6.22%
5/18/2004	10.50%	5.07%	5.43%
5/25/2004	10.25%	5.08%	5.17%
5/27/2004	10.25%	5.08%	5.17%
6/2/2004	11.22%	5.08%	6.14%
6/30/2004	10.50%	5.10%	5.40%
6/30/2004	10.50%	5.10%	5.40%
7/16/2004	11.60%	5.11%	6.49%
8/25/2004	10.25%	5.10%	5.15%
9/9/2004	10.40%	5.10%	5.30%
11/9/2004	10.50%	5.07%	5.43%
11/23/2004	11.00%	5.06%	5.94%
12/14/2004	10.97%	5.07%	5.90%
12/21/2004	11.25%	5.07%	6.18%
12/21/2004	11.50%	5.07%	6.43%
12/22/2004	10.70%	5.07%	5.63%
12/22/2004	11.50%	5.07%	6.43%
12/29/2004	9.85%	5.07%	4.78%
1/6/2005	10.70%	5.08%	5.62%
2/18/2005	10.30%	4.98%	5.32%
2/25/2005	10.50%	4.96%	5.54%
3/10/2005	11.00%	4.93%	6.07%
3/24/2005	10.30%	4.90%	5.40%
4/4/2005	10.00%	4.88%	5.12%
4/7/2005	10.25%	4.87%	5.38%
5/18/2005	10.25%	4.78%	5.47%
5/25/2005	10.75%	4.76%	5.99%
5/26/2005	9.75%	4.76%	4.99%
6/1/2005	9.75%	4.75%	5.00%

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 164 of 176

[6]	[7]	[8]	[9]
Date	Return on Equity (%)	30 Year Treasury	Risk Premium
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%
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%

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 165 of 176

[6]	[7]	[8]	[9]
Date	Return on Equity (%)	30 Year Treasury	Risk Premium
5/22/2007	10.50%	4.80%	5.70%
5/23/2007	10.70%	4.80%	5.90%
5/25/2007	9.67%	4.80%	4.87%
6/15/2007	9.90%	4.82%	5.08%
6/21/2007	10.20%	4.83%	5.37%
6/22/2007	10.50%	4.83%	5.67%
6/28/2007	10.75%	4.84%	5.91%
7/12/2007	9.67%	4.86%	4.81%
7/19/2007	10.00%	4.87%	5.13%
7/19/2007	10.00%	4.87%	5.13%
8/15/2007	10.40%	4.88%	5.52%
10/9/2007	10.00%	4.91%	5.09%
10/17/2007	9.10%	4.91%	4.19%
10/31/2007	9.96%	4.90%	5.06%
11/29/2007	10.90%	4.87%	6.03%
12/6/2007	10.75%	4.86%	5.89%
12/13/2007	9.96%	4.86%	5.10%
12/14/2007	10.70%	4.86%	5.84%
12/14/2007	10.80%	4.86%	5.94%
12/19/2007	10.20%	4.86%	5.34%
12/20/2007	10.20%	4.85%	5.35%
12/20/2007	11.00%	4.85%	6.15%
12/28/2007	10.25%	4.85%	5.40%
12/31/2007	11.25%	4.85%	6.40%
1/8/2008	10.75%	4.83%	5.92%
1/17/2008	10.75%	4.81%	5.94%
1/28/2008	9.40%	4.80%	4.60%
1/30/2008	10.00%	4.79%	5.21%
1/31/2008	10.71%	4.79%	5.92%
2/29/2008	10.25%	4.75%	5.50%
3/12/2008	10.25%	4.73%	5.52%
3/25/2008	9.10%	4.68%	4.42%
4/22/2008	10.25%	4.60%	5.65%
4/24/2008	10.10%	4.60%	5.50%
5/1/2008	10.70%	4.59%	6.11%
5/19/2008	11.00%	4.56%	6.44%
5/27/2008	10.00%	4.55%	5.45%
6/10/2008	10.70%	4.54%	6.16%
6/27/2008	10.50%	4.54%	5.96%
6/27/2008	11.04%	4.54%	6.50%
7/10/2008	10.43%	4.52%	5.91%
7/16/2008	9.40%	4.52%	4.88%
7/30/2008	10.80%	4.51%	6.29%
7/31/2008	10.70%	4.51%	6.19%
8/11/2008	10.25%	4.51%	5.74%
8/26/2008	10.18%	4.50%	5.68%
9/10/2008	10.30%	4.50%	5.80%
9/24/2008	10.65%	4.48%	6.17%
9/24/2008	10.65%	4.48%	6.17%
9/24/2008	10.65%	4.48%	6.17%
9/30/2008	10.20%	4.48%	5.72%

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 166 of 176

[6]	[7]	[8]	[9]
Date	Return on Equity (%)	30 Year Treasury	Risk Premium
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%
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%

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 167 of 176

[6]	[7]	[8]	[9]
Date	Return on Equity (%)	30 Year Treasury	Risk Premium
1/27/2010	10.70%	4.35%	6.35%
2/9/2010	9.80%	4.38%	5.42%
2/18/2010	10.60%	4.40%	6.20%
2/24/2010	10.18%	4.41%	5.77%
3/2/2010	9.63%	4.41%	5.22%
3/4/2010	10.50%	4.41%	6.09%
3/5/2010	10.50%	4.41%	6.09%
3/11/2010	11.90%	4.42%	7.48%
3/17/2010	10.00%	4.41%	5.59%
3/25/2010	10.15%	4.42%	5.73%
4/2/2010	10.10%	4.43%	5.67%
4/27/2010	10.00%	4.46%	5.54%
4/29/2010	9.90%	4.46%	5.44%
4/29/2010	10.06%	4.46%	5.60%
4/29/2010	10.26%	4.46%	5.80%
5/12/2010	10.30%	4.45%	5.85%
5/12/2010	10.30%	4.45%	5.85%
5/28/2010	10.10%	4.44%	5.66%
5/28/2010	10.20%	4.44%	5.76%
6/7/2010	10.30%	4.44%	5.86%
6/16/2010	10.00%	4.44%	5.56%
6/28/2010	9.67%	4.43%	5.24%
6/28/2010	10.50%	4.43%	6.07%
6/30/2010	9.40%	4.43%	4.97%
7/1/2010	10.25%	4.43%	5.82%
7/15/2010	10.53%	4.43%	6.10%
7/15/2010	10.70%	4.43%	6.27%
7/30/2010	10.70%	4.41%	6.29%
8/4/2010	10.50%	4.41%	6.09%
8/6/2010	9.83%	4.41%	5.42%
8/25/2010	9.90%	4.37%	5.53%
9/3/2010	10.60%	4.35%	6.25%
9/14/2010	10.70%	4.33%	6.37%
9/16/2010	10.00%	4.33%	5.67%
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%

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 168 of 176

[6]	[7]	[8]	[9]
Date	Return on Equity (%)	30 Year Treasury	Risk Premium
12/27/2010	9.90%	4.14%	5.76%
12/29/2010	11.15%	4.14%	7.01%
1/5/2011	10.15%	4.13%	6.02%
1/12/2011	10.30%	4.12%	6.18%
1/13/2011	10.30%	4.12%	6.18%
1/18/2011	10.00%	4.12%	5.88%
1/20/2011	9.30%	4.12%	5.18%
1/20/2011	10.13%	4.12%	6.01%
1/31/2011	9.60%	4.12%	5.48%
2/3/2011	10.00%	4.12%	5.88%
2/25/2011	10.00%	4.14%	5.86%
3/25/2011	9.80%	4.18%	5.62%
3/30/2011	10.00%	4.18%	5.82%
4/12/2011	10.00%	4.21%	5.79%
4/25/2011	10.74%	4.23%	6.51%
4/26/2011	9.67%	4.23%	5.44%
4/27/2011	10.40%	4.24%	6.16%
5/4/2011	10.00%	4.24%	5.76%
5/4/2011	10.00%	4.24%	5.76%
5/24/2011	10.50%	4.27%	6.23%
6/8/2011	10.75%	4.30%	6.45%
6/16/2011	9.20%	4.32%	4.88%
6/17/2011	9.95%	4.32%	5.63%
7/13/2011	10.20%	4.36%	5.84%
8/1/2011	9.20%	4.39%	4.81%
8/8/2011	10.00%	4.38%	5.62%
8/11/2011	10.00%	4.38%	5.62%
8/12/2011	10.35%	4.37%	5.98%
8/19/2011	10.25%	4.36%	5.89%
9/2/2011	12.88%	4.32%	8.56%
9/22/2011	10.00%	4.24%	5.76%
10/12/2011	10.30%	4.14%	6.16%
10/20/2011	10.50%	4.10%	6.40%
11/30/2011	10.90%	3.87%	7.03%
11/30/2011	10.90%	3.87%	7.03%
12/14/2011	10.00%	3.80%	6.20%
12/14/2011	10.30%	3.80%	6.50%
12/20/2011	10.20%	3.76%	6.44%
12/21/2011	10.20%	3.76%	6.44%
12/22/2011	9.90%	3.75%	6.15%
12/22/2011	10.40%	3.75%	6.65%
12/23/2011	10.19%	3.74%	6.45%
1/25/2012	10.50%	3.57%	6.93%
1/27/2012	10.50%	3.56%	6.94%
2/15/2012	10.20%	3.47%	6.73%
2/23/2012	9.90%	3.44%	6.46%
2/27/2012	10.25%	3.43%	6.82%
2/29/2012	10.40%	3.41%	6.99%
3/29/2012	10.37%	3.32%	7.05%
4/4/2012	10.00%	3.30%	6.70%
4/26/2012	10.00%	3.21%	6.79%

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 169 of 176

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 170 of 176

[6]	[7]	[8]	[9]
Date	Return on Equity (%)	30 Year Treasury	Risk Premium
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%
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%

[6]	[7]	[8]	[9]
Date	Return on Equity (%)	30 Year Treasury	Risk Premium
3/14/2013	9.30%	2.88%	6.42%
3/27/2013	9.80%	2.90%	6.90%
5/1/2013	9.84%	2.94%	6.90%
5/15/2013	10.30%	2.96%	7.34%
5/30/2013	10.20%	2.98%	7.22%
5/31/2013	9.00%	2.98%	6.02%
6/11/2013	10.00%	3.00%	7.00%
6/21/2013	9.75%	3.02%	6.73%
6/25/2013	9.80%	3.03%	6.77%
7/12/2013	9.36%	3.07%	6.29%
8/8/2013	9.83%	3.14%	6.69%
8/14/2013	9.15%	3.16%	5.99%
9/11/2013	10.20%	3.26%	6.94%
9/11/2013	10.25%	3.26%	6.99%
9/24/2013	10.20%	3.31%	6.89%
10/3/2013	9.65%	3.33%	6.32%
11/6/2013	10.20%	3.41%	6.79%
11/21/2013	10.00%	3.44%	6.56%
11/26/2013	10.00%	3.45%	6.55%
12/3/2013	10.25%	3.47%	6.78%
12/4/2013	9.50%	3.47%	6.03%
12/5/2013	10.20%	3.48%	6.72%
12/9/2013	8.72%	3.48%	5.24%
12/9/2013	9.75%	3.48%	6.27%
12/13/2013	9.75%	3.50%	6.25%
12/16/2013	9.95%	3.50%	6.45%
12/16/2013	9.95%	3.50%	6.45%
12/16/2013	10.12%	3.50%	6.62%
12/17/2013	9.50%	3.51%	5.99%
12/17/2013	10.95%	3.51%	7.44%
12/18/2013	8.72%	3.51%	5.21%
12/18/2013	9.80%	3.51%	6.29%
12/19/2013	10.15%	3.51%	6.64%
12/30/2013	9.50%	3.54%	5.96%
2/20/2014	9.20%	3.68%	5.52%
2/26/2014	9.75%	3.69%	6.06%
3/17/2014	9.55%	3.72%	5.83%
3/26/2014	9.40%	3.73%	5.67%
3/26/2014	9.96%	3.73%	6.23%
4/2/2014	9.70%	3.73%	5.97%
5/16/2014	9.80%	3.70%	6.10%
5/30/2014	9.70%	3.68%	6.02%
6/6/2014	10.40%	3.67%	6.73%
6/30/2014	9.55%	3.64%	5.91%
7/2/2014	9.62%	3.64%	5.98%
7/10/2014	9.95%	3.63%	6.32%
7/23/2014	9.75%	3.61%	6.14%
7/29/2014	9.45%	3.60%	5.85%
7/31/2014	9.90%	3.60%	6.30%
8/20/2014	9.75%	3.57%	6.18%
8/25/2014	9.60%	3.56%	6.04%

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 171 of 176

[6]	[7]	[8]	[9]
Date	Return on Equity (%)	30 Year Treasury	Risk Premium
8/29/2014	9.80%	3.54%	6.26%
9/11/2014	9.60%	3.51%	6.09%
9/15/2014	10.25%	3.51%	6.74%
10/9/2014	9.80%	3.45%	6.35%
11/6/2014	9.56%	3.37%	6.19%
11/6/2014	10.20%	3.37%	6.83%
11/14/2014	10.20%	3.35%	6.85%
11/26/2014	9.70%	3.33%	6.37%
11/26/2014	10.20%	3.33%	6.87%
12/4/2014	9.68%	3.31%	6.37%
12/10/2014	9.25%	3.29%	5.96%
12/10/2014	9.25%	3.29%	5.96%
12/11/2014	10.07%	3.29%	6.78%
12/12/2014	10.20%	3.28%	6.92%
12/17/2014	9.17%	3.27%	5.90%
12/18/2014	9.83%	3.26%	6.57%
1/23/2015	9.50%	3.14%	6.36%
2/24/2015	9.83%	3.04%	6.79%
3/18/2015	9.75%	2.98%	6.77%
3/25/2015	9.50%	2.96%	6.54%
3/26/2015	9.72%	2.95%	6.77%
4/23/2015	10.20%	2.87%	7.33%
4/29/2015	9.53%	2.86%	6.67%
5/1/2015	9.60%	2.85%	6.75%
5/26/2015	9.75%	2.83%	6.92%
6/17/2015	9.00%	2.82%	6.18%
6/17/2015	9.00%	2.82%	6.18%
9/2/2015	9.50%	2.79%	6.71%
9/10/2015	9.30%	2.79%	6.51%
10/15/2015	9.00%	2.81%	6.19%
11/19/2015	10.00%	2.88%	7.12%
11/19/2015	10.30%	2.88%	7.42%
12/3/2015	10.00%	2.90%	7.10%
12/9/2015	9.14%	2.90%	6.24%
12/9/2015	9.14%	2.90%	6.24%
12/11/2015	10.30%	2.90%	7.40%
12/15/2015	9.60%	2.91%	6.69%
12/17/2015	9.70%	2.91%	6.79%
12/18/2015	9.50%	2.91%	6.59%
12/30/2015	9.50%	2.93%	6.57%
1/6/2016	9.50%	2.94%	6.56%
2/23/2016	9.75%	2.94%	6.81%
3/16/2016	9.85%	2.91%	6.94%
4/29/2016	9.80%	2.83%	6.97%
6/3/2016	9.75%	2.80%	6.95%
6/8/2016	9.48%	2.80%	6.68%
6/15/2016	9.00%	2.78%	6.22%
6/15/2016	9.00%	2.78%	6.22%
7/18/2016	9.98%	2.71%	7.27%
8/9/2016	9.85%	2.66%	7.19%
8/18/2016	9.50%	2.63%	6.87%

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 172 of 176

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 173 of 176

[6]	[7]	[8]	[9]
Date	Return on Equity (%)	30 Year Treasury	Risk Premium
8/24/2016	9.75%	2.62%	7.13%
9/1/2016	9.50%	2.59%	6.91%
9/8/2016	10.00%	2.58%	7.42%
9/28/2016	9.58%	2.54%	7.04%
9/30/2016	9.90%	2.53%	7.37%
11/9/2016	9.80%	2.48%	7.32%
11/10/2016	9.50%	2.48%	7.02%
11/15/2016	9.55%	2.49%	7.06%
11/18/2016	10.00%	2.50%	7.50%
11/29/2016	10.55%	2.51%	8.04%
12/1/2016	10.00%	2.51%	7.49%
12/6/2016	8.64%	2.52%	6.12%
12/6/2016	8.64%	2.52%	6.12%
12/7/2016	10.10%	2.52%	7.58%
12/12/2016	9.60%	2.53%	7.07%
12/14/2016	9.10%	2.53%	6.57%
12/19/2016	9.00%	2.54%	6.46%
12/19/2016	9.37%	2.54%	6.83%
12/22/2016	9.60%	2.55%	7.05%
12/22/2016	9.90%	2.55%	7.35%
12/28/2016	9.50%	2.55%	6.95%
1/18/2017	9.45%	2.58%	6.87%
1/24/2017	9.00%	2.59%	6.41%
1/31/2017	10.10%	2.60%	7.50%
2/15/2017	9.60%	2.62%	6.98%
2/22/2017	9.60%	2.64%	6.96%
2/24/2017	9.75%	2.64%	7.11%
2/28/2017	10.10%	2.64%	7.46%
3/2/2017	9.41%	2.65%	6.76%
3/20/2017	9.50%	2.68%	6.82%
4/4/2017	10.25%	2.71%	7.54%
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%

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 174 of 176

[6]	[7]	[8]	[9]
Date	Return on Equity (%)	30 Year Treasury	Risk Premium
11/30/2017	10.00%	2.88%	7.12%
12/5/2017	9.50%	2.88%	6.62%
12/6/2017	8.40%	2.87%	5.53%
12/6/2017	8.40%	2.87%	5.53%
12/7/2017	9.80%	2.87%	6.93%
12/14/2017	9.60%	2.86%	6.74%
12/14/2017	9.65%	2.86%	6.79%
12/18/2017	9.50%	2.86%	6.64%
12/20/2017	9.58%	2.86%	6.72%
12/21/2017	9.10%	2.85%	6.25%
12/28/2017	9.50%	2.85%	6.65%
12/29/2017	9.51%	2.85%	6.66%
1/18/2018	9.70%	2.84%	6.86%
1/31/2018	9.30%	2.84%	6.46%
2/2/2018	9.98%	2.84%	7.14%
2/23/2018	9.90%	2.85%	7.05%
3/12/2018	9.25%	2.86%	6.39%
3/15/2018	9.00%	2.87%	6.13%
3/29/2018	10.00%	2.88%	7.12%
4/12/2018	9.90%	2.89%	7.01%
4/13/2018	9.73%	2.89%	6.84%
4/18/2018	9.25%	2.89%	6.36%
4/18/2018	10.00%	2.89%	7.11%
4/26/2018	9.50%	2.90%	6.60%
5/30/2018	9.95%	2.94%	7.01%
5/31/2018	9.50%	2.94%	6.56%
6/14/2018	8.80%	2.96%	5.84%
6/22/2018	9.50%	2.97%	6.53%
6/22/2018	9.90%	2.97%	6.93%
6/28/2018	9.35%	2.97%	6.38%
6/29/2018	9.50%	2.97%	6.53%
8/8/2018	9.53%	2.99%	6.54%
8/21/2018	9.70%	3.00%	6.70%
8/24/2018	9.28%	3.01%	6.27%
9/5/2018	9.10%	3.02%	6.08%
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%

# of Cases:	1,570
Average:	4.65%

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
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%
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%
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%
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%
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	5,000,000	$23.00	$0.8625	$300,000	$22.08	$4,612,500	$115,000,000	$110,387,500	4.011%
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	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	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							$12,453,279	$475,863,076		
								WEIGHTED AVERAGE FLOTATION COSTS:		2.617% [10]

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 175 of 176

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

Company	Ticker	[11] Annualized Dividend	[12] Average Stock Price	[13] Dividend Yield	[14] Expected Dividend Yield: Current	[15] Expected Dividend Yield: Adjusted for Flot. Costs	[16] Zacks Earnings Growth	[17] First Call Earnings Growth	[18] Value Line Earnings Growth	[19] Average Earnings Growth	[20] DCF k(e)	[21] Flotation Adjusted DCF k(e)
ALLETE, Inc.	ALE	$2.24	$75.54	2.97%	3.05%	3.13%	6.00%	6.00%	5.00%	5.67%	8.72%	8.80%
Alliant Energy Corporation	LNT	$1.34	$43.19	3.10%	3.19%	3.28%	5.50%	5.75%	6.50%	5.92%	9.11%	9.20%
Ameren Corporation	AEE	$1.90	$64.47	2.95%	3.05%	3.13%	6.50%	6.90%	7.50%	6.97%	10.02%	10.10%
American Electric Power Company, Inc.	AEP	$2.48	$71.74	3.46%	3.55%	3.64%	5.60%	5.59%	4.50%	5.23%	8.78%	8.87%
Avangrid, Inc.	AGR	$1.76	$48.46	3.63%	3.82%	3.93%	9.10%	9.50%	13.00%	10.53%	14.36%	14.46%
Black Hills Corporation	BKH	$1.90	$59.07	3.22%	3.30%	3.39%	4.50%	4.32%	6.50%	5.11%	8.41%	8.49%
CMS Energy Corporation	CMS	$1.43	$49.58	2.88%	2.98%	3.06%	6.20%	6.97%	7.00%	6.72%	9.70%	9.78%
DTE Energy Company	DTE	$3.53	$110.97	3.18%	3.28%	3.37%	5.30%	5.49%	7.50%	6.10%	9.37%	9.46%
El Paso Electric	EE	$1.44	$59.64	2.41%	2.47%	2.54%	4.70%	4.70%	4.50%	4.63%	7.10%	7.17%
Hawaiian Electric Industries, Inc.	HE	$1.24	$35.51	3.49%	3.59%	3.69%	6.70%	6.65%	3.50%	5.62%	9.21%	9.30%
NextEra Energy, Inc.	NEE	$4.44	$170.56	2.60%	2.72%	2.79%	8.40%	9.44%	9.00%	8.95%	11.67%	11.74%
NorthWestern Corporation	NWE	$2.20	$59.53	3.70%	3.75%	3.85%	2.30%	2.45%	3.50%	2.75%	6.50%	6.60%
OGE Energy Corp.	OGE	$1.46	$36.80	3.97%	4.08%	4.19%	5.20%	5.30%	6.00%	5.50%	9.58%	9.69%
Otter Tail Corporation	OTTR	$1.34	$47.80	2.80%	2.92%	3.00%	NA	9.00%	7.50%	8.25%	11.17%	11.25%
Pinnacle West Capital Corporation	PNW	$2.78	$80.04	3.47%	3.55%	3.65%	4.50%	3.72%	5.00%	4.41%	7.96%	8.05%
PNM Resources, Inc.	PNM	$1.06	$39.32	2.70%	2.77%	2.84%	4.60%	4.45%	7.50%	5.52%	8.29%	8.36%
Portland General Electric Company	POR	$1.45	$46.13	3.14%	3.21%	3.29%	3.10%	4.95%	4.00%	4.02%	7.22%	7.31%
Southern Company	SO	$2.40	$43.82	5.48%	5.56%	5.71%	4.50%	1.37%	3.00%	2.96%	8.51%	8.66%
WEC Energy Group, Inc.	WEC	$2.21	$67.80	3.26%	3.34%	3.43%	4.10%	4.54%	7.00%	5.21%	8.56%	8.65%
Xcel Energy Inc.	XEL	$1.52	$47.96	3.17%	3.26%	3.35%	5.80%	5.95%	5.50%	5.75%	9.01%	9.10%
PROXY GROUP MEAN											9.16%	9.25%

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:	9.25%	
DCF Result Unadjusted For Flotation Costs:	9.16%	
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 - 0.0091)
[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]

ELECTRONICALLY FILED - 2018 November 8 10:16 AM - SCPSC - Docket # 2018-318-E - Page 176 of 176