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BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

IN THE MATTER OF THE APPLICATION OF AVISTA CORPORATION FOR THE AUTHORITY TO INCREASE ITS RATES AND CHARGES FOR ELECTRIC AND NATURAL GAS SERVICE TO ELECTRIC AND NATURAL GAS CUSTOMERS IN THE STATE OF IDAHO	CASE NO. AVU-E-17-01 CASE NO. AVU-G-17-01 EXHIBIT NO. 3 ADRIEN M. MCKENZIE

FOR AVISTA CORPORATION

(ELECTRIC AND NATURAL GAS)

EXHIBIT NO. 3, SCHEDULE 1

QUALIFICATIONS OF ADRIEN M. MCKENZIE

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Adrien M. McKenzie. My business address is 3907 Red River St., Austin, Texas 78751.

Q. PLEASE STATE YOUR OCCUPATION.

A. I am President of FINCAP, In., a firm engaged primarily in financial, economic, and policy consulting in the field of public utility regulation.

Q. PLEASE DESCRIBE YOUR QUALIFICATIONS AND EXPERIENCE.

A. I received B.A. and M.B.A. degrees with a major in finance from The University of Texas at Austin, and hold the Chartered Financial Analyst (CFA®) designation. Since joining FINCAP in 1984, I have participated in consulting assignments involving a broad range of economic and financial issues, including cost of capital, cost of service, rate design, economic damages, and business valuation. I have extensive experience in economic and financial analysis for regulated industries, and in preparing and supporting expert witness testimony before courts, regulatory agencies, and legislative committees throughout the U.S. and Canada. I have personally sponsored direct and rebuttal testimony in approximately seventy-five proceedings filed with the Federal Energy Regulatory Commission ("FERC"), the Regulatory Commission of Alaska, the Colorado Public Utilities Commission, the Hawaii Public Utilities Commission, the Idaho Public Utilities Commission, the Indiana Utility Regulatory Commission, the Iowa Utilities Board, the Kansas State Corporation Commission, the Kentucky Public Service Commission, the

Maryland Public Service Commission, the Montana Public Service Commission, the Nebraska Public Service Commission, the Ohio Public Utilities Commission, the Oregon Public Utilities Commission, the South Dakota Public Utilities Commission, the Virginia State Corporation Commission, the Washington Utilities and Transportation Commission, the West Virginia Public Service Commission, and the Wyoming Public Service Commission.[1] My testimony addressed the establishment of risk-comparable proxy groups, the application of alternative quantitative methods, and the consideration of regulatory standards and policy objectives in establishing a fair rate of return on equity for regulated electric, gas, and water utility operations. In connection with these assignments, my responsibilities have included critically evaluating the positions of other parties and preparation of rebuttal testimony, representing clients in settlement negotiations and hearings, and assisting in the preparation of legal briefs.

FINCAP was formed in 1979 as an economic and financial consulting firm serving clients in both the regulated and competitive sectors. FINCAP conducts assignments ranging from broad qualitative analyses and policy consulting to technical analyses and research. The firm's experience is in the areas of public utilities, valuation of closely-held businesses, and economic evaluations (e.g., damage and cost/benefit analyses). Prior to joining FINCAP, I was employed by an oil and gas firm and was responsible for operations and accounting. I am a member of the CFA Institute and the CFA Society of Austin. A resume containing the details of my qualifications and experience is attached below.

[1] Over the course of my career, I have prepared prefiled direct and rebuttal testimony in over 250 regulatory proceedings before FERC, the Canadian Radio-Television and Telecommunications Commission, and regulatory agencies in over 30 states. This testimony was sponsored by Dr. William Avera, who was formerly President of FINCAP, Inc.

ADRIEN M. McKENZIE

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Summary of Qualifications

Adrien McKenzie has an MBA in finance from the University of Texas at Austin and holds the Chartered Financial Analyst (CFA®) designation. He has over 25 years of experience in economic and financial analysis for regulated industries, and in preparing and supporting expert witness testimony before courts, regulatory agencies, and legislative committees throughout the U.S. and Canada. Assignments have included a broad range of economic and financial issues, including cost of capital, cost of service, rate design, economic damages, and business valuation.

Employment

President FINCAP, Inc. (June 1984 to June 1987) (April 1988 to present)	Economic consulting firm specializing in regulated industries and valuation of closely-held businesses. Assignments have involved electric, gas, telecommunication, and water/sewer utilities, with clients including utilities, consumer groups, municipalities, regulatory agencies, and cogenerators. Areas of participation have included rate of return, revenue requirements, rate design, tariff analysis, avoided cost, forecasting, and negotiations. Develop cost of capital analyses using alternative market models for electric, gas, and telephone utilities. Prepare pre-filed direct and rebuttal testimony, participate in settlement negotiations, respond to interrogatories, evaluate opposition testimony, and assist in the areas of cross-examination and the preparations of legal briefs. Other assignments have involved preparation of technical reports, valuations, estimation of damages, industry studies, and various economic analyses in support of litigation.
Manager, McKenzie Energy Company (Jan. 1981 to May. 1984)	Responsible for operations and accounting for firm engaged in the management of working interests in oil and gas properties.

Education

M.B.A., Finance, University of Texas at Austin (Sep. 1982 to May. 1984)	Program included coursework in corporate finance, accounting, financial modeling, and statistics. Received Dean's Award for Academic Excellence and Good Neighbor Scholarship. Professional Report: *The Impact of Construction Expenditures on Investor-Owned Electric Utilities*
B.B.A., Finance, University of Texas at Austin (Jan. 1981 to May 1982)	Electives included capital market theory, portfolio management, and international economics and finance. Elected to Beta Gamma Sigma business honor society. Dean's List 1981-1982.
Simon Fraser University, Vancouver, Canada and University of Hawaii at Manoa, Honolulu, Hawaii (Jan. 1979 to Dec 1980)	Coursework in accounting, finance, economics, and liberal arts.

Professional Associations

Received Chartered Financial Analyst (CFA®) designation in 1990.

Member – CFA Institute.

Bibliography

"A Profile of State Regulatory Commissions," A Special Report by the Electricity Consumers Resource Council (ELCON), Summer 1991.

"The Impact of Regulatory Climate on Utility Capital Costs: An Alternative Test," with Bruce H. Fairchild, *Public Utilities Fortnightly* (May 25, 1989).

Presentations

"ROE at FERC: Issues and Methods," *Expert Briefing on Parallels in ROE Issues between AER, ERA, and FERC*, Jones Day (Sydney, Melbourne, and Perth, Australia) (April 15, 2014).

Cost of Capital Working Group eforum, Edison Electric Institute (April 24, 2012).

"Cost-of-Service Studies and Rate Design," General Management of Electric Utilities (A Training Program for Electric Utility Managers from Developing Countries), Austin, Texas (October 1989 and November 1990 and 1991).

Representative Assignments

Mr. McKenzie has prepared and supported prefiled testimony submitted in over 250 regulatory proceedings. In addition to filings before regulators in over thirty state jurisdictions, Mr. McKenzie has considerable expertise in preparing expert analyses and testimony before the Federal Energy Regulatory Commission ("FERC") on the issue of rate of return on equity ("ROE"), and has broad experience in applying and evaluating the results of quantitative methods to estimate a fair ROE, including discounted cash flow approaches, the Capital Asset Pricing Model, risk premium methods, and other quantitative benchmarks. Other representative assignments have included the application of econometric models to analyze the impact of anti-competitive behavior and estimate lost profits; development of explanatory models for nuclear plant capital costs in connection with prudency reviews; and the analysis of avoided cost pricing for cogenerated power.

I. DESCRIPTION OF QUANTITATIVE ANALYSES

Q. What is the purpose of this schedule?

A. Exhibit No. 3, Schedule 2 presents capital market estimates of the cost of equity for the jurisdictional electric and natural gas utility operations of Avista Corp. ("Avista" or "the Company"). First, I will briefly summarize the concept of the cost of equity, along with the risk-return tradeoff principle fundamental to capital markets. Next, I describe my applications of the Discounted Cash Flow ("DCF"), the Capital Asset Pricing Model ("CAPM"), the empirical form of the CAPM ("ECAPM"), a risk premium analyses based on allowed returns for electric utilities, and reference to expected rates of return for electric utilities. This exhibit also presents a market-based test to my utility quantitative analyses by applying the DCF model to a group of low risk non-utility firms.

A. Overview

Q. What fundamental economic principle underlies any evaluation of investors' required return on equity ("ROE")?

A. The fundamental economic principle underlying the cost of equity concept is the notion that investors are risk averse. In capital markets where relatively risk-free assets are available (*e.g.*, U.S. Treasury securities), investors can be induced to hold riskier assets only if they are offered a

premium, or additional return, above the rate of return on a risk-free asset. Since all assets compete with each other for investor funds, riskier assets must yield a higher expected rate of return than safer assets to induce investors to hold them.

Given this risk-return tradeoff, the required rate of return (k) from an asset (i) can be generally expressed as:

$$k_i = R_f + RP_i$$

where: R_f = Risk-free rate of return, and
RP_i = Risk premium required to hold riskier asset i.

Thus, the required rate of return for a particular asset at any point in time is a function of: 1) the yield on risk-free assets, and 2) its relative risk, with investors demanding correspondingly larger risk premiums for assets bearing greater risk.

Q. Is there evidence that the risk-return tradeoff principle actually operates in the capital markets?

A. Yes. The risk-return tradeoff can be readily documented in segments of the capital markets where required rates of return can be directly inferred from market data and where generally accepted measures of risk exist. Bond yields, for example, reflect investors' expected rates of return, and bond ratings measure the risk of individual bond issues. Comparing the observed yields on government

securities, which are considered free of default risk, to the yields on bonds of various rating categories demonstrates that the risk-return tradeoff does, in fact, exist.

Q. Does the risk-return tradeoff observed with fixed income securities extend to common stocks and other assets?

A. It is widely accepted that the risk-return tradeoff evidenced with long-term debt extends to all assets. Documenting the risk-return tradeoff for assets other than fixed income securities, however, is complicated by two factors. First, there is no standard measure of risk applicable to all assets. Second, for most assets – including common stock – required rates of return cannot be directly observed. Yet there is every reason to believe that investors exhibit risk aversion in deciding whether or not to hold common stocks and other assets, just as when choosing among fixed-income securities.

Q. Is this risk-return tradeoff limited to differences between firms?

A. No. The risk-return tradeoff principle applies not only to investments in different firms, but also to different securities issued by the same firm. The securities issued by a utility vary considerably in risk because they have different characteristics and priorities. As noted earlier, long-term debt is senior among all capital in its claim on a

utility's net revenues and is, therefore, the least risky. The last investors in line are common shareholders. They receive only the net revenues, if any, remaining after all other claimants have been paid. As a result, the rate of return that investors require from a utility's common stock, the most junior and riskiest of its securities, must be considerably higher than the yield offered by the utility's senior, long-term debt.

Q. What does the above discussion imply with respect to estimating the cost of common equity for a utility?

A. Although the cost of common equity cannot be observed directly, it is a function of the returns available from other investment alternatives and the risks to which the equity capital is exposed. Because it is unobservable, the cost of equity for a particular utility must be estimated by analyzing information about capital market conditions generally, assessing the relative risks of the company specifically, and employing various quantitative methods that focus on investors' current required rates of return. These various quantitative methods typically attempt to infer investors' required rates of return from stock prices, interest rates, or other capital market data.

B. Comparable Risk Proxy Group

Q. How did you implement quantitative methods to estimate the cost of common equity for Avista?

A. Application of quantitative methods to estimate the cost of equity requires observable capital market data, such as stock prices. Moreover, even for a firm with publicly traded stock, the cost of equity can only be estimated. As a result, applying quantitative models using observable market data produces an estimate that inherently includes some degree of observation error. Thus, the accepted approach to increase confidence in the results is to apply multiple quantitative methods such as the DCF and CAPM to a proxy group of publicly traded utility companies that investors regard as risk-comparable.

Q. What specific proxy group of utilities did you rely on for your analyses?

A. In order to reflect the risks and prospects associated with Avista's jurisdictional utility operations, my DCF analyses focused on a reference group of other utilities composed of those companies included by The Value Line Investment Survey ("Value Line") in its Electric Utilities Industry groups with:

1. Corporate credit ratings from Standard & Poor's Corporation ("S&P") and Moody's Investors Service ("Moody's") corresponding to one notch above and below the Company's current ratings. For S&P, this

resulted in a ratings range of BBB-, BBB, and BBB+; for Moody's the range was Baa2, Baa1, or A3.

2. Value Line Safety Rank of "2" or "3".

3. No ongoing involvement in a major merger or acquisition.

4. No cuts in dividend payments during the past six months and no announcement of a dividend cut since that time.

These criteria resulted in a proxy group composed of 18 companies, which I refer to as the "Utility Group."

Q. How did you evaluate the risks of the Utility Group relative to Avista?

A. My evaluation of relative risk considered four objective, published benchmarks that are widely relied on in the investment community. Credit ratings are assigned by independent rating agencies for the purpose of providing investors with a broad assessment of the creditworthiness of a firm. Ratings generally extend from triple-A (the highest) to D (in default). Other symbols (*e.g.*, "BBB+") are used to show relative standing within a category. Because the rating agencies' evaluation includes virtually all of the factors normally considered important in assessing a firm's relative credit standing, corporate credit ratings provide a broad, objective measure of overall investment risk that is readily available to investors. Although the credit rating agencies are not immune to criticism, their rankings and analyses are

widely cited in the investment community and referenced by investors. Investment restrictions tied to credit ratings continue to influence capital flows, and credit ratings are also frequently used as a primary risk indicator in establishing proxy groups to estimate the cost of common equity.

While credit ratings provide the most widely referenced benchmark for investment risks, other quality rankings published by investment advisory services also provide relative assessments of risks that are considered by investors in forming their expectations for common stocks. Value Line's primary risk indicator is its Safety Rank, which ranges from "1" (Safest) to "5" (Riskiest). This overall risk measure is intended to capture the total risk of a stock, and incorporates elements of stock price stability and financial strength. Given that Value Line is perhaps the most widely available source of investment advisory information, its Safety Rank provides useful guidance regarding the risk perceptions of investors.

The Financial Strength Rating is designed as a guide to overall financial strength and creditworthiness, with the key inputs including financial leverage, business volatility measures, and company size. Value Line's Financial Strength Ratings range from "A++" (strongest) down to "C" (weakest) in

nine steps. Finally, Value Line's beta measures a utility's stock price volatility relative to the market as a whole. A stock that tends to respond less to market movements has a beta less than 1.00, while stocks that tend to move more than the market have betas greater than 1.00. Beta is the only relevant measure of investment risk under modern capital market theory, and is widely cited in academics and in the investment industry as a guide to investors' risk perceptions. Moreover, in my experience Value Line is the most widely referenced source for beta in regulatory proceedings. As noted in *New Regulatory Finance*:

> Value Line is the largest and most widely circulated independent investment advisory service, and influences the expectations of a large number of institutional and individual investors. . . . Value Line betas are computed on a theoretically sound basis using a broadly based market index, and they are adjusted for the regression tendency of betas to converge to 1.00.[1]

Q. How do the overall risks of your proxy group compare with Avista?

A. Table 1 compares the Utility Group with Avista across four key indicators of investment risk:

[1] Roger A. Morin,"New Regulatory Finance," *Public Utilities Reports* (2006) at 71.

TABLE 1
COMPARISON OF RISK INDICATORS

	Credit Rating		Value Line		
	S&P	Moody's	Safety Rank	Financial Strength	Beta
Utility Group	BBB	Baa1	2	B++	0.71
Avista	BBB	Baa1	2	A	0.70

Q. What does this comparison indicate regarding investors' assessment of the relative risk associated with your Utility Group?

A. As shown above, the BBB and Baa1 credit ratings corresponding to Avista are identical to the average credit ratings for the Utility Group. Similarly, the average Value Line Safety Rank for the Utility Group is the same as that assigned to the Company. With respect to Value Line's Financial Strength and beta, the average values for the Utility Group indicate slightly more risk than for Avista. Considered together, this comparison of objective measures, which consider a broad spectrum of risks, including financial and business position, and exposure to firm-specific factors, indicates that investors would likely conclude that the overall investment risks for Avista are generally comparable to those of the firms in the Utility Group.

C. Discounted Cash Flow Analyses

Q. How are DCF models used to estimate the cost of equity?

A. DCF models attempt to replicate the market valuation process that sets the price investors are willing to pay for a share of a company's stock. The model rests on the assumption that investors evaluate the risks and expected rates of return from all securities in the capital markets. Given these expectations, the price of each stock is adjusted by the market until investors are adequately compensated for the risks they bear. Therefore, we can look to the market to determine what investors believe a share of common stock is worth. By estimating the cash flows investors expect to receive from the stock in the way of future dividends and capital gains, we can calculate their required rate of return. That is, the cost of equity is the discount rate that equates the current price of a share of stock with the present value of all expected cash flows from the stock. The formula for the general form of the DCF model is as follows:

$$P_0 = \frac{D_1}{(1+k_e)^1} + \frac{D_2}{(1+k_e)^2} + \cdots + \frac{D_t}{(1+k_e)^t} + \frac{P_t}{(1+k_e)^t}$$

where: P_0 = Current price per share;
P_t = Expected future price per share in period t;
D_t = Expected dividend per share in period t;
k_e = Cost of common equity.

Q. What form of the DCF model is customarily used to estimate the cost of equity in rate cases?

A. Rather than developing annual estimates of cash flows into perpetuity, the DCF model can be simplified to a "constant growth" form: [2]

$$P_0 = \frac{D_1}{k_e - g}$$

where: P_0 = Current price per share;
D_1 = Expected dividend per share in the coming year;
k_e = Cost of equity;
g = Investors' long-term growth expectations.

The cost of equity (K_e) can be isolated by rearranging terms:

$$k_e = \frac{D_1}{P_0} + g$$

This constant growth form of the DCF model recognizes that the rate of return to stockholders consists of two parts: 1) dividend yield (D_1/P_0), and 2) growth (g). In other words, investors expect to receive a portion of their total return in the form of current dividends and the remainder through price appreciation.

[2] The constant growth DCF model is dependent on a number of assumptions, which in practice are never strictly met. These include a constant growth rate for both dividends and earnings; a stable dividend payout ratio; the discount rate exceeds the growth rate; a constant growth rate for book value and price; a constant earned rate of return on book value; no sales of stock at a price above or below book value; a constant price-earnings ratio; a constant discount rate (*i.e.*, no changes in risk or interest rate levels and a flat yield curve); and all of the above extend to infinity.

Q. What steps are required to apply the DCF model?

A. The first step in implementing the constant growth DCF model is to determine the expected dividend yield (D_1/P_0) for the firm in question. This is usually calculated based on an estimate of dividends to be paid in the coming year divided by the current price of the stock. The second step is to estimate investors' long-term growth expectations (*g*) for the firm. The final step is to sum the firm's dividend yield and estimated growth rate to arrive at an estimate of its cost of equity.

Q. How was the dividend yield for the Utility Group determined?

A. Estimates of dividends to be paid by each of these utilities over the next twelve months, obtained from Value Line, served as D_1. This annual dividend was then divided by a 30-day average stock price for each utility to arrive at the expected dividend yield. The expected dividends, stock prices, and resulting dividend yields for the firms in the Utility Group are presented on page 1 of Exhibit No. 3, Schedule 5.

Q. What is the next step in applying the constant growth DCF model?

A. The next step is to evaluate long-term growth expectations, or "*g*", for the firm in question. In constant growth DCF theory, earnings, dividends, book value, and

market price are all assumed to grow in lockstep, and the growth horizon of the DCF model is infinite. But implementation of the DCF model is more than just a theoretical exercise; it is an attempt to replicate the mechanism investors used to arrive at observable stock prices. A wide variety of techniques can be used to derive growth rates, but the only "*g*" that matters in applying the DCF model is the value that investors expect.

Q. What are investors most likely to consider in developing their long-term growth expectations?

A. Implementation of the DCF model is solely concerned with replicating the forward-looking evaluation of real-world investors. In the case of utilities, dividend growth rates are not likely to provide a meaningful guide to investors' current growth expectations. This is because utilities have significantly altered their dividend policies in response to more accentuated business risks in the industry, with the payout ratios falling significantly from historical levels. As a result, dividend growth in the utility industry has lagged growth in earnings as utilities conserve financial resources to provide a hedge against heightened uncertainties.

A measure that plays a pivotal role in determining investors' long-term growth expectations are future trends in

earnings per share ("EPS"), which provide the source for future dividends and ultimately support share prices. The importance of earnings in evaluating investors' expectations and requirements is well accepted in the investment community, and surveys of analytical techniques relied on by professional analysts indicate that growth in earnings is far more influential than trends in dividends per share ("DPS").

The availability of projected EPS growth rates also is key to investors relying on this measure as compared to future trends in DPS. Apart from Value Line, investment advisory services do not generally publish comprehensive DPS growth projections, and this scarcity of dividend growth rates relative to the abundance of earnings forecasts attests to their relative influence. The fact that securities analysts focus on EPS growth, and that DPS growth rates are not routinely published, indicates that projected EPS growth rates are likely to provide a superior indicator of the future long-term growth expected by investors.

Q. Do the growth rate projections of security analysts consider historical trends?

A. Yes. Professional security analysts study historical trends extensively in developing their projections of future earnings. Hence, to the extent there is any useful

information in historical patterns, that information is incorporated into analysts' growth forecasts.

Q. Did Professor Myron J. Gordon, who originated the DCF approach, recognize the pivotal role that earnings play in forming investors' expectations?

A. Yes. Dr. Gordon specifically recognized that "it is the growth that investors expect that should be used" in applying the DCF model and he concluded:

> A number of considerations suggest that investors may, in fact, use earnings growth as a measure of expected future growth."[3]

Q. Are analysts' assessments of growth rates appropriate for estimating investors' required return using the DCF model?

A. Yes. In applying the DCF model to estimate the cost of common equity, the only relevant growth rate is the forward-looking expectations of investors that are captured in current stock prices. Investors, just like securities analysts and others in the investment community, do not know how the future will actually turn out. They can only make investment decisions based on their best estimate of what the future holds in the way of long-term growth for a particular stock, and securities prices are constantly adjusting to reflect their assessment of available information.

[3] Myron J. Gordon,"The Cost of Capital to a Public Utility," *MSU Public Utilities Studies* at 89 (1974).

Any claims that analysts' estimates are not relied upon by investors are illogical given the reality of a competitive market for investment advice. The market for investment advice is intensely competitive, and securities analysts are personally and professionally motivated to provide the most accurate assessment possible of future growth trends. If financial analysts' forecasts do not add value to investors' decision making, then it is irrational for investors to pay for these estimates. Those financial analysts who fail to provide reliable forecasts will lose out in competitive markets relative to those analysts whose forecasts investors find more credible. The reality that analyst estimates are routinely referenced in the financial media and in investment advisory publications (*e.g.*, Value Line) implies that investors use them as a basis for their expectations.

While the projections of securities analysts may be proven optimistic or pessimistic in hindsight, this is irrelevant in assessing the expected growth that investors have incorporated into current stock prices, and any bias in analysts' forecasts – whether pessimistic or optimistic – is irrelevant if investors share analysts' views. Earnings growth projections of security analysts provide the most frequently referenced guide to investors' views and are

widely accepted in applying the DCF model. As explained in *New Regulatory Finance*:

> Because of the dominance of institutional investors and their influence on individual investors, analysts' forecasts of long-run growth rates provide a sound basis for estimating required returns. Financial analysts exert a strong influence on the expectations of many investors who do not possess the resources to make their own forecasts, that is, they are a cause of *g* [growth]. The accuracy of these forecasts in the sense of whether they turn out to be correct is not an issue here, as long as they reflect widely held expectations.[4]

Q. Have regulators also recognized that analysts' growth rate estimates are an important and meaningful guide to investors' expectations?

A. Yes. The Kentucky Public Service Commission has indicated its preference for relying on analysts' projections in establishing investors' expectations:

> KU's argument concerning the appropriateness of using investors' expectations in performing a DCF analysis is more persuasive than the AG's argument that analysts' projections should be rejected in favor of historical results. The Commission agrees that analysts' projections of growth will be relatively more compelling in forming investors' forward-looking expectations than relying on historical performance, especially given the current state of the economy.[5]

Similarly, the Federal Energy Regulatory Commission ("FERC") has expressed a clear preference for projected EPS growth

[4] Roger A. Morin,"New Regulatory Finance," *Public Utilities Reports, Inc.* (2006) at 298 (emphasis added).
[5] *Kentucky Utilities Co.*, Case No. 2009-00548 (Ky PSC Jul. 30, 2010) at 30-31.

rates in applying the DCF model to estimate the cost of equity for both electric and natural gas pipeline utilities:

> Opinion No. 414-A held that the IBES five-year growth forecasts for each company in the proxy group are the best available evidence of the short-term growth rates expected by the investment community. It cited evidence that (1) those forecasts are provided to IBES by professional security analysts, (2) IBES reports the forecast for each firm as a service to investors, and (3) the IBES reports are well known in the investment community and used by investors. The Commission has also rejected the suggestion that the IBES analysts are biased and stated that "in fact the analysts have a significant incentive to make their analyses as accurate as possible to meet the needs of their clients since those investors will not utilize brokerage firms whose analysts repeatedly overstate the growth potential of companies."[6]

The Public Utility Regulatory Authority of Connecticut has also noted that "there is not growth in DPS without growth in EPS," and concluded that securities analysts' growth projections have a greater influence over investors' expectations and stock prices.[7]

Q. What are security analysts currently projecting in the way of growth for the firms in the Utility Proxy Group?

A. The projected EPS growth rates for each of the firms in the Utility Group reported by Value Line, IBES,[8]

[6] *Kern River Gas Transmission Co.*, 126 FERC ¶ 61,034at P 121 (2009) (footnote omitted).
[7] *Decision*, Docket No. 13-02-20 (Sept. 24, 2013).
[8] Formerly I/B/E/S International, Inc., IBES growth rates are now compiled and published by Thomson Reuters.

Zacks Investment Research ("Zacks"), and S&P Capital IQ are displayed on page 2 of Exhibit No. 3, Schedule 5.

Q. How else are investors' expectations of future long-term growth prospects often estimated for use in the constant growth DCF model?

A. In constant growth theory, growth in book equity will be equal to the product of the earnings retention ratio (one minus the dividend payout ratio) and the earned rate of return on book equity. Furthermore, if the earned rate of return and the payout ratio are constant over time, growth in earnings and dividends will be equal to growth in book value. Despite the fact that these conditions are seldom, if ever, met in practice, this "sustainable growth" approach may provide a rough guide for evaluating a firm's growth prospects and is frequently proposed in regulatory proceedings.

The sustainable growth rate is calculated by the formula, $g = br+sv$, where "b" is the expected retention ratio, "r" is the expected earned return on equity, "s" is the percent of common equity expected to be issued annually as new common stock, and "v" is the equity accretion rate. Under DCF theory, the "sv" factor is a component of the growth rate designed to capture the impact of issuing new common stock at a price above, or below, book value. The

sustainable, "br+sv" growth rates for each firm in the Utility Group are summarized on page 2 of Exhibit No. 3, Schedule 5, with the underlying details being presented on Exhibit No. 3, Schedule 6.[9]

Q. Are there significant shortcomings associated with the "br+sv" growth rate?

A. Yes. First, in order to calculate the sustainable growth rate, it is necessary to develop estimates of investors' expectations for four separate variables; namely, "b", "r", "s", and "v." Given the inherent difficulty in forecasting each parameter and the difficulty of estimating the expectations of investors, the potential for measurement error is significantly increased when using four variables, as opposed to referencing a direct projection for EPS growth. Second, empirical research in the finance literature indicates that sustainable growth rates are not as significantly correlated to measures of value, such as share prices, as are analysts' EPS growth forecasts.[10] The "sustainable growth" approach was included for completeness, but evidence indicates that analysts' forecasts provide a

[9] Because Value Line reports end-of-year book values, an adjustment factor was incorporated to compute an average rate of return over the year, which is consistent with the theory underlying this approach.
[10] Roger A. Morin, "New Regulatory Finance," *Public Utilities Reports, Inc.*, (2006) at 307.

superior and more direct guide to investors' growth expectations.

Q. What cost of equity estimates were implied for the Utility Group using the DCF model?

A. After combining the dividend yields and respective growth projections for each utility, the resulting cost of equity estimates are shown on page 3 of Exhibit No. 3, Schedule 5.

Q. In evaluating the results of the constant growth DCF model, is it appropriate to eliminate illogical low or high-end values?

A. Yes. In applying quantitative methods to estimate the cost of equity, it is essential that the resulting values pass fundamental tests of reasonableness and economic logic. Accordingly, DCF estimates that are implausibly low or high should be eliminated when evaluating the results of this method.

Q. How did you evaluate DCF estimates at the low end of the range?

A. I based my evaluation of DCF estimates at the low end of the range on the fundamental risk-return tradeoff, which holds that investors will only take on more risk if they expect to earn a return to compensate them for the greater uncertainty. Because common stocks lack the protections associated with an investment in long-term bonds,

a utility's common stock imposes far greater risks on investors. As a result, the rate of return that investors require from a utility's common stock is considerably higher than the yield offered by senior, long-term debt. Consistent with this principle, DCF results that are not sufficiently higher than the yields available on less risky utility bonds must be eliminated.

Q. Have similar tests been applied by regulators?

A. Yes. FERC has noted that adjustments are justified where applications of the DCF approach produce illogical results. FERC evaluates DCF results against observable yields on long-term public utility debt and has recognized that it is appropriate to eliminate estimates that do not sufficiently exceed this threshold.[11] FERC affirmed that:

> The purpose of the low-end outlier test is to exclude from the proxy group those companies whose ROE estimates are below the average bond yield or are above the average bond yield but are sufficiently low that an investor would consider the stock to yield essentially the same return as debt. In public utility ROE cases, the Commission has used 100 basis points above the cost of debt as an approximation of this threshold, but has also considered the distribution of proxy group companies to inform its decision on which companies are outliers. As the Presiding Judge explained, this is a flexible test.[12]

[11] See, e.g., Southern California Edison Co., 131 FERC ¶ 61,020 at P 55 (2010) ("SoCal Edison").
[12] Martha Coakley et al., v. Bangor Hydro-Electric Company, et al., Opinion No. 531, 147 FERC ¶ 61,234 at P 122 (2014).

Q. What interest rate benchmark did you consider in evaluating the DCF results for Avista?

A. As noted earlier, the S&P and Moody's ratings for Avista are BBB and Baa1, respectively, which fall in the triple-B rating category. Accordingly, I referenced average yields on triple-B utility bonds as my benchmark in evaluating low-end results. Monthly yields on Baa bonds reported by Moody's averaged 4.6 percent over the six months ending April 2017.[13]

Q. What else should be considered in evaluating DCF estimates at the low end of the range?

A. As indicated earlier, it is generally expected that long-term interest rates will rise as the Federal Reserve normalizes monetary policies. As shown in Table 2 below, forecasts of IHS Global Insight and the Energy Information Administration ("EIA") imply an average triple-B bond yield of approximately 6.1 percent over the period 2018-2022:

[13] Moody's Investors Service, http://credittrends.moodys.com/chartroom.asp?c=3.

TABLE 2
IMPLIED BAA BOND YIELD

	Baa Yield 2018-22
Projected Aa Utility Yield	
IHS Global Insight (a)	5.35%
EIA (b)	5.56%
Average	5.45%
Current Baa - Aa Yield Spread	0.64%
Implied Baa Utility Yield	**6.09%**

(a) IHS Global Insight (Feb. 2017).
(b) Energy Information Administration, Annual Energy Outlook 2017 (Jan. 5, 2017).
(c) Based on monthly average bond yields from Moody's Investors Service for the six-month period Nov. 2016 - Apr. 2017.

The increase in debt yields anticipated by IHS Global Insight and EIA is also supported by the widely-referenced Blue Chip Financial Forecasts ("Blue Chip"), which projects that yields on corporate bonds will climb on the order of 150 basis points through 2022.[14]

Q. What does this test of logic imply with respect to the DCF estimates for the Utility Group?

A. Adding FERC's 100 basis-point premium to the historical and projected average utility bond yields implies a low-end threshold on the order of 5.6 percent to 7.1 percent. As highlighted on page 3 of Exhibit No. 3, Schedule 5, after considering these tests and the distribution of

[14] *Blue Chip Financial Forecasts*, Vol. 35, No. 12 (Dec. 1, 2016).

individual estimates, I eliminated low-end DCF estimates ranging from -2.2 percent to 6.9 percent. Based on my professional experience and the risk-return tradeoff principle that is fundamental to finance, it is inconceivable that investors are not requiring a substantially higher rate of return for holding common stock. As a result, consistent with the threshold established by historical and projected utility bond yields, these values provide little guidance as to the returns investors require from utility common stocks and should be excluded.

Q. What else should be considered in evaluating DCF estimates at the low end of the range?

A. While FERC has historically relied on a 100 basis point spread over public utility bond yields as a starting place in evaluating low-end values, reference to a static test ignores the implications of current low bond yields. Specifically, the premium that investors demand to bear the higher risks of common stock is not constant. As I demonstrate later in my testimony, equity risk premiums expand when interest rates fall, and vice versa. Given that bond yields have remained uncharacteristically low, this inverse relationship implies a significant increase in the equity risk premium that investors require to accept the higher uncertainties associated with an investment in utility

common stocks versus bonds. As a result, using a fixed premium of 100 basis points over public utility bond yields will vastly understate the threshold for investors' minimum required return on utility stocks.

Q. Do you also recommend excluding estimates at the high end of the range of DCF results?

A. While I typically recommend the exclusion of high end estimates that are clearly implausible, in this case, no such values existed. The upper end of the cost of common equity range produced by the DCF analysis presented on page 3 of Exhibit No. 3, Schedule 5 was set by a cost of equity estimate of 14.7 percent. When compared with the balance of the remaining estimates, this value is reasonable and should not be excluded in evaluating the results of the DCF model for the Utility Group.

Q. What cost of equity is implied by your DCF results for the Utility Group?

A. As shown on page 3 of Exhibit No. 3, Schedule 5 and summarized in Table 3, below, after eliminating illogical low-end values, application of the constant growth DCF model resulted in the following cost of equity estimates:

TABLE 3
DCF RESULTS – UTILITY GROUP

	Cost of Equity	
Growth Rate	**Average**	**Midpoint**
Value Line	9.1%	9.3%
IBES	10.0%	11.3%
Zacks	9.5%	10.1%
S&P Capital/IQ	9.4%	9.4%
br + sv	8.0%	8.2%

D. Capital Asset Pricing Model

Q. Please describe the CAPM.

A. The CAPM is a theory of market equilibrium that measures risk using the beta coefficient. Assuming investors are fully diversified, the relevant risk of an individual asset (*e.g.*, common stock) is its volatility relative to the market as a whole, with beta reflecting the tendency of a stock's price to follow changes in the market. A stock that tends to respond less to market movements has a beta less than 1.00, while stocks that tend to move more than the market have betas greater than 1.00. The CAPM is mathematically expressed as:

$$R_j = R_f + \beta_j (R_m - R_f)$$

where: R_j = required rate of return for stock j;
R_f = risk-free rate;
R_m = expected return on the market portfolio; and,
β_j = beta, or systematic risk, for stock j.

Like the DCF model, the CAPM is an *ex-ante*, or forward-looking model based on expectations of the future. As a

result, in order to produce a meaningful estimate of investors' required rate of return, the CAPM must be applied using estimates that reflect the expectations of actual investors in the market, not with backward-looking, historical data.

Q. Why is the CAPM approach an appropriate component of evaluating the cost of equity for Avista?

A. The CAPM approach generally is considered to be the most widely referenced method for estimating the cost of equity among academicians and professional practitioners, with the pioneering researchers of this method receiving the Nobel Prize in 1990. Because this is the dominant model for estimating the cost of equity outside the regulatory sphere, the CAPM provides important insight into investors' required rate of return for utility stocks, including Avista.

Q. How did you apply the CAPM to estimate the cost of common equity?

A. Application of the CAPM to the Utility Group based on a forward-looking estimate for investors' required rate of return from common stocks is presented on Exhibit No. 3, Schedule 7. In order to capture the expectations of today's investors in current capital markets, the expected market rate of return was estimated by conducting a DCF analysis on the dividend paying firms in the S&P 500.

The dividend yield for each firm was obtained from Zacks, and the growth rate was equal to the average of the earnings growth projections for each firm published by Value Line, IBES, and Zacks with each firm's dividend yield and growth rate being weighted by its proportionate share of total market value. Based on the weighted average of the projections for the individual firms, current estimates imply an average growth rate over the next five years of 9.2 percent. Combining this average growth rate with a year-ahead dividend yield of 2.4 percent results in a current cost of common equity estimate for the market as a whole (R_m) of 11.6 percent. Subtracting a 3.0 percent risk-free rate based on the average yield on 30-year Treasury bonds for the six months ending April 2017 produced a market equity risk premium of 8.6 percent.

Q. What was the source of the beta values you used to apply the CAPM?

A. As I did in the development of my proxy group discussed above, I relied on the beta values reported by Value Line, which in my experience is the most widely referenced source for beta in regulatory proceedings.

Q. What else should be considered in applying the CAPM?

A. Financial research indicates that the CAPM does not fully account for observed differences in rates of return attributable to firm size. Accordingly, a modification is required to account for this size effect. As explained by Morningstar:

> One of the most remarkable discoveries of modern finance is the finding of a relationship between firm size and return. On average, small companies have higher returns than larger ones. . . . The relationship between firm size and return cuts across the entire size spectrum; it is not restricted to the smallest stocks.[15]

According to the CAPM, the expected return on a security should consist of the riskless rate, plus a premium to compensate for the systematic risk of the particular security. The degree of systematic risk is represented by the beta coefficient. The need for the size adjustment arises because differences in investors' required rates of return that are related to firm size are not fully captured by beta. To account for this, researchers have developed size premiums that need to be added to CAPM cost of equity estimates to account for the level of a firm's market

[15] *Morningstar*, "Ibbotson SBBI 2014 Classic Yearbook," at p. 99 (footnote omitted).

capitalization in determining the CAPM cost of equity.[16] Accordingly, my CAPM analyses incorporated an adjustment to recognize the impact of size distinctions, as measured by the average market capitalization for the firms in the Utility Group.

Q. What cost of equity is indicated for the Utility Group using the CAPM approach?

A. As shown on page 1 of Exhibit No. 3, Schedule 7, after adjusting for the impact of firm size the CAPM approach implied an average and midpoint cost of equity estimates of 9.9% for the Utility Group.

Q. Did you also apply the CAPM using forecasted bond yields?

A. Yes. As discussed earlier, there is widespread consensus that interest rates will increase materially as the economy continues to strengthen. Accordingly, in addition to the use of current bond yields, I also applied the CAPM based on the forecasted long-term Treasury bond yields developed based on projections published by Value Line, IHS Global Insight and Blue Chip. As shown on page 2 of Exhibit No. 3, Schedule 7, incorporating a forecasted Treasury bond yield for 2018-2022 implied an average cost of equity of 10.2

[16] Originally compiled by Ibbotson Associates and published in their annual yearbook entitled, "Stocks, Bonds, Bills and Inflation," these size premia are now developed by Duff & Phelps and presented in its "Valuation Handbook – Guide to Cost of Capital."

percent for the Utility Group after adjusting for the impact of relative size.[17]

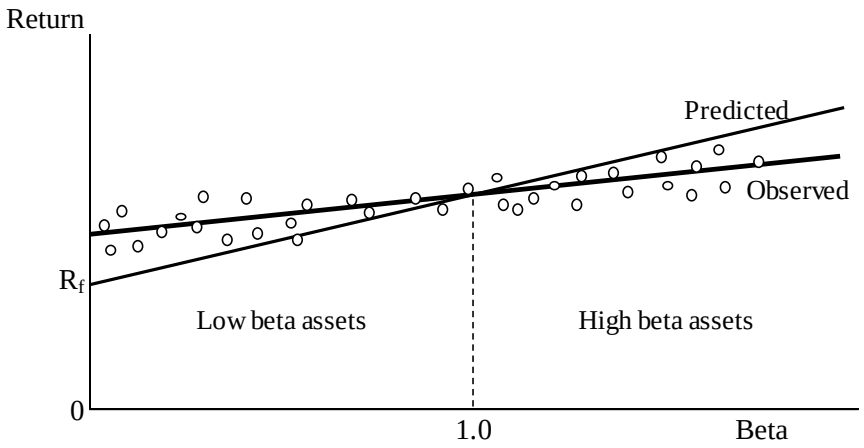
E. Empirical Capital Asset Pricing Model

Q. How does the ECAPM approach differ from traditional applications of the CAPM?

A. Empirical tests of the CAPM have shown that low-beta securities earn returns somewhat higher than the CAPM would predict, and high-beta securities earn less than predicted. In other words, the CAPM tends to overstate the actual sensitivity of the cost of capital to beta, with low-beta stocks tending to have higher returns and high-beta stocks tending to have lower risk returns than predicted by the CAPM.[18] This is illustrated graphically in the figure below:

[17] The midpoint of the size adjusted CAPM cost of equity range based on projected bond yields was 10.3 percent.
[18] Because the betas of utility stocks, including Avista, are generally less than 1.0, this implies that cost of equity estimates based on the traditional CAPM would understate the cost of equity.

FIGURE 1
CAPM – PREDICTED VS. OBSERVED RETURNS



Because the betas of utility stocks, including those in the Utility Group, are generally less than 1.0, this implies that cost of equity estimates based on the traditional CAPM would understate the cost of equity. This empirical finding is widely reported in the finance literature, as summarized in *New Regulatory Finance*:

> As discussed in the previous section, several finance scholars have developed refined and expanded versions of the standard CAPM by relaxing the constraints imposed on the CAPM, such as dividend yield, size, and skewness effects. These enhanced CAPMs typically produce a risk-return relationship that is flatter than the CAPM prediction in keeping with the actual observed risk-return relationship. The ECAPM makes use of these empirical relationships.[19]

As discussed in *New Regulatory Finance*, based on a review of the empirical evidence, the expected return on a security is

[19] Roger A. Morin, "New Regulatory Finance," *Public Utilities Reports* (2006) at 189.

related to its risk by the ECAPM, which is represented by the following formula:

$$R_j = R_f + 0.25(R_m - R_f) + 0.75[\beta_j(R_m - R_f)]$$

Like the CAPM formula presented earlier, the ECAPM represents a stock's required return as a function of the risk-free rate (R_f), plus a risk premium. In the formula above, this risk premium is composed of two parts: (1) the market risk premium ($R_m - R_f$) weighted by a factor of 25%, and (2) a company-specific risk premium based on the stocks relative volatility [$(\beta)(R_m - R_f)$] weighted by 75%. This ECAPM equation, and its associated weighting factors, recognizes the observed relationship between standard CAPM estimates and the cost of capital documented in the financial research, and corrects for the understated returns that would otherwise be produced for low beta stocks.

Q. What cost of equity estimates were indicated by the ECAPM?

A. My applications of the traditional ECAPM were based on the same forward-looking market rate of return, risk-free rates, and beta values discussed earlier in connections with the CAPM. As shown on page 1 of Exhibit No. 3, Schedule 8, applying the forward-looking ECAPM approach to the firms in the Utility Group results in an average of 10.5 percent after

incorporating the size adjustment corresponding to the market capitalization of the individual utilities.

As shown on page 2 of Exhibit No. 3, Schedule 8, incorporating a forecasted Treasury bond yield for 2018-2022 implied an average ECAPM cost of equity of 10.7% for the Utility Group after adjusting for the impact of relative size.

F. Risk Premium Approach

Q. Please briefly describe the risk premium method.

A. The risk premium method of estimating investors' required rate of return extends to common stocks the risk-return tradeoff observed with bonds. The cost of equity is estimated by first determining the additional return investors require to forgo the relative safety of bonds and to bear the greater risks associated with common stock, and by then adding this equity risk premium to the current yield on bonds. Like the DCF model, the risk premium method is capital market oriented. However, unlike DCF models, which indirectly impute the cost of equity, risk premium methods directly estimate investors' required rate of return by adding an equity risk premium to observable bond yields.

Q. Is the risk premium approach a widely accepted method for estimating the cost of equity?

A. Yes. The risk premium approach is based on the fundamental risk-return principle that is central to finance, which holds that investors will require a premium in the form of a higher return in order to assume additional risk. This method is routinely referenced by the investment community and in academia and regulatory proceedings, and provides an important tool in estimating a fair ROE for Avista.

Q. How did you implement the risk premium method?

A. I based my estimates of equity risk premiums for electric utilities on surveys of previously authorized ROEs. Authorized ROEs presumably reflect regulatory commissions' best estimates of the cost of equity, however determined, at the time they issued their final order. Moreover, allowed ROEs are an important consideration for investors and have the potential to influence other observable investment parameters, including credit ratings and borrowing costs. Thus, this data provides a logical and frequently referenced basis for estimating equity risk premiums for regulated utilities.

Q. Is it circular to consider risk premiums based on authorized returns in assessing a fair ROE for Avista?

A. No. In establishing authorized ROEs, regulators typically consider the results of alternative market-based

approaches, including the DCF model. Because allowed risk premiums consider objective market data (*e.g.*, stock prices, dividends, beta, and interest rates), and are not based strictly on past actions of other regulators, this mitigates concerns over any potential for circularity.

Q. How did you implement the risk premium approach using surveys of allowed rates of return?

A. The ROEs authorized for electric utilities by regulatory commissions across the U.S. are compiled by Regulatory Research Associates and published in its Regulatory Focus report. On page 3 of Exhibit No. 3, Schedule 9, the average yield on long-term public utility bonds is subtracted from the average allowed rate of return on common equity for electric utilities to calculate equity risk premiums for each year between 1974 and 2016.[20] Over this 43-year period, these equity risk premiums for electric utilities averaged 3.67 percent, and the yield on public utility bonds averaged 8.38 percent.

Q. Is there any capital market relationship that must be considered when implementing the risk premium method?

A. Yes. There is considerable evidence that the magnitude of equity risk premiums is not constant and that equity risk premiums tend to move inversely with interest

[20] Yield averages reported by Moody's are for seasoned bonds with a remaining maturity of 20 years or more.

rates. In other words, when interest rate levels are relatively high, equity risk premiums narrow, and when interest rates are relatively low, equity risk premiums widen. The implication of this inverse relationship is that the cost of equity does not move as much as, or in lockstep with, interest rates. Accordingly, for a 1 percent increase or decrease in interest rates, the cost of equity may only rise or fall, say, 50 basis points. Therefore, when implementing the risk premium method, adjustments may be required to incorporate this inverse relationship if current interest rate levels diverge from the average interest rate level represented in the data set.

Q. Has this inverse relationship been documented in the financial research?

A. Yes. This inverse relationship between equity risk premiums and interest rates has been widely reported in the financial literature.[21] For example, New Regulatory Finance documented this inverse relationship:

> Published studies by Brigham, Shome, and Vinson (1985), Harris (1986), Harris and Marston (1992, 1993), Carelton, Chambers, and Lakonishok (1983), Morin (2005), and McShane (2005), and others demonstrate that, beginning in 1980, risk premiums varied inversely with the level of interest rates –

[21] *See, e.g.,* E.F. Brigham, D.K. Shome, and S.R. Vinson,"The Risk Premium Approach to Measuring a Utility's Cost of Equity," *Financial Management* (Spring 1985); R.S. Harris and F.C. Marston,"Estimating Shareholder Risk Premia Using Analysts' Growth Forecasts," *Financial Management* (Summer 1992).

rising when rates fell and declining when rates rose.[22]

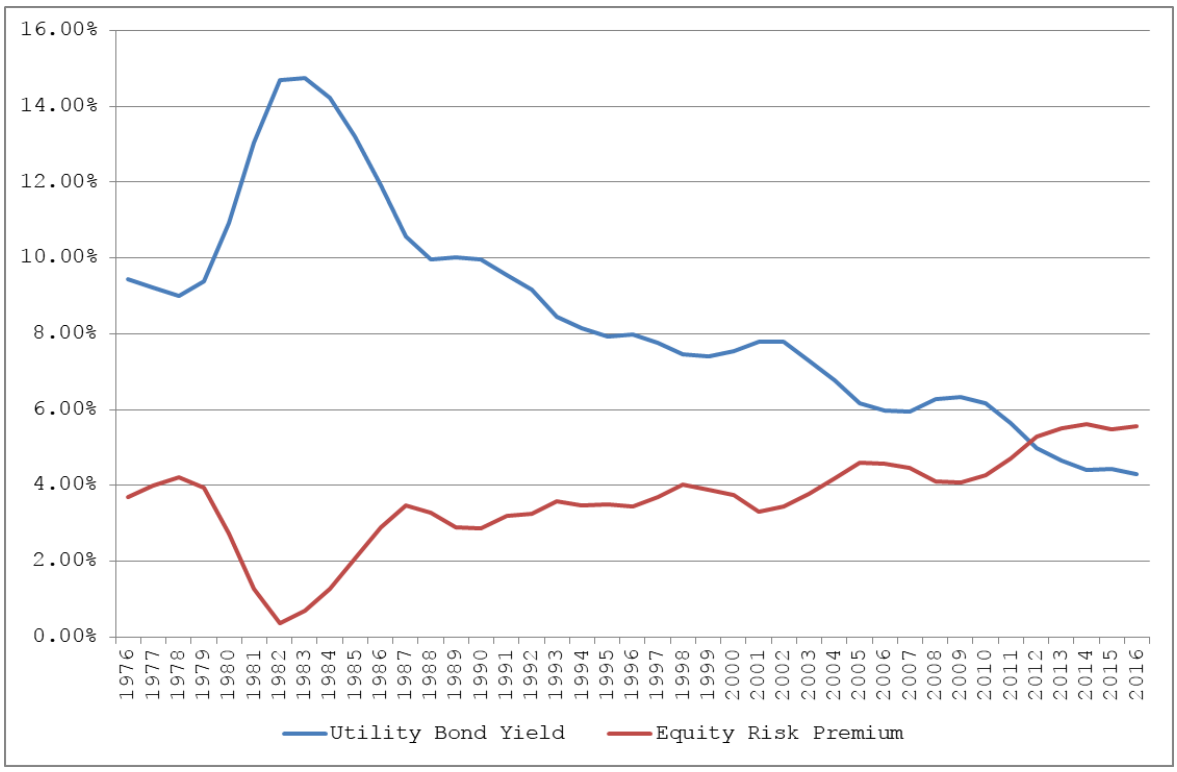
Other regulators have also recognized that the cost of equity does not move in tandem with interest rates.[23]

Q. What are the implications of this relationship under current capital market conditions?

A. As noted earlier, bond yields are at unprecedented lows. Given that equity risk premiums move inversely with interest rates, these uncharacteristically low bond yields also imply a sharp increase in the equity risk premium that investors require to accept the higher uncertainties associated with an investment in utility common stocks versus bonds. In other words, higher required equity risk premiums offset the impact of declining interest rates on the ROE. This relationship is illustrated in the figure below, which is based on three-year rolling averages for the utility bond yields and risk premiums shown on page 3 of Exhibit No. 3, Schedule 9.

[22] Roger A. Morin,"New Regulatory Finance," Public Utilities Reports, (2006) at 128.
[23] See, e.g., *California Public Utilities Commission*, Decision 08-05-035 (May 29, 2008); *Entergy Mississippi Formula Rate Plan FRP-5*, http://www.entergy-mississippi.com/content/price/tariffs/emi_frp.pdf; *Martha Coakley et al.*, 147 FERC ¶ 61,234 at P 147 (2014).

FIGURE 2
INVERSE RELATIONSHIP



Q. What cost of equity is implied by the risk premium method using surveys of allowed ROEs?

A. Because risk premiums move inversely with interest rates and current bond yields are significantly lower than the average over the study period, it is necessary to adjust the average equity risk premium over the study period to reflect the impact of changes in bond yields. Based on the regression output between the interest rates and equity risk premiums displayed on page 4 of Exhibit No. 3, Schedule 9, the equity risk premium for electric utilities increased approximately 43 basis points for each percentage point drop in the yield on average public utility bonds. As illustrated

on page 1 of Exhibit No. 3, Schedule 9, with the yield on average public utility bonds for the six months ending April 2017 being 4.26 percent, this implied a current equity risk premium of 5.44 percent for electric utilities. Adding this equity risk premium to the yield on Baa utility bonds of 4.63 percent produces a current cost of equity of 10.07 percent.

Q. What cost of equity was produced by the risk premium approach after incorporating forecasted bond yields?

A. As shown on page 2 of Exhibit No. 3, Schedule 9, incorporating a forecasted yield for 2018-2022 and adjusting for changes in interest rates since the study period implied an equity risk premium of 4.81 percent for electric utilities. Adding this equity risk premium to the average implied yield on long-term Baa public utility bonds for 2018-2022 of 6.09 percent resulted in an implied cost of equity of approximately 10.9 percent.

G. Expected Earnings Approach

Q. What other analyses did you conduct to estimate the cost of common equity?

A. As noted earlier, I also evaluated the cost of common equity using the expected earnings method. Reference to rates of return available from alternative investments of comparable risk can provide an important benchmark in assessing the return necessary to assure confidence in the financial integrity of a firm and its ability to attract

capital. This expected earnings approach is consistent with the economic underpinnings for a fair rate of return established by the U.S. Supreme Court in *Bluefield* and *Hope*. Moreover, it avoids the complexities and limitations of capital market methods and instead focuses on the returns earned on book equity, which are readily available to investors.

Q. What economic premise underlies the expected earnings approach?

A. The simple, but powerful concept underlying the expected earnings approach is that investors compare each investment alternative with the next best opportunity. If the utility is unable to offer a return similar to that available from other opportunities of comparable risk, investors will become unwilling to supply the capital on reasonable terms. For existing investors, denying the utility an opportunity to earn what is available from other similar risk alternatives prevents them from earning their opportunity cost of capital. In this situation the government is effectively taking the value of investors' capital without adequate compensation. The expected earnings approach is consistent with the economic rationale underpinning established regulatory standards, which specifies a methodology to determine an ROE benchmark based

on earned rates of return for a peer group of other utilities.

Q. How is the expected earnings approach typically implemented?

A. The traditional comparable earnings test identifies a group of companies that are believed to be comparable in risk to the utility. The actual earnings of those companies on the book value of their investment are then compared to the allowed return of the utility. While the traditional comparable earnings test is implemented using historical data taken from the accounting records, it is also common to use projections of returns on book investment, such as those published by recognized investment advisory publications (*e.g.*, Value Line). Because these returns on book value equity are analogous to the allowed return on a utility's rate base, this measure of opportunity costs results in a direct, "apples to apples" comparison.

Moreover, regulators do not set the returns that investors earn in the capital markets, which are a function of dividend payments and fluctuations in common stock prices, both of which are outside their control. Regulators can only establish the allowed ROE, which is applied to the book value of a utility's investment in rate base, as determined from its accounting records. This is directly analogous to the

expected earnings approach, which measures the return that investors expect the utility to earn on book value. As a result, the expected earnings approach provides a meaningful guide to ensure that the allowed ROE is similar to what other utilities of comparable risk will earn on invested capital. This expected earnings test does not require theoretical models to indirectly infer investors' perceptions from stock prices or other market data. As long as the proxy companies are similar in risk, their expected earned returns on invested capital provide a direct benchmark for investors' opportunity costs that is independent of fluctuating stock prices, market-to-book ratios, debates over DCF growth rates, or the limitations inherent in any theoretical model of investor behavior.

Q. What rates of return on equity are indicated for utilities based on the expected earnings approach?

A. Value Line's projections imply an average rate of return on common equity for the electric utility industry of 10.8 percent over its three- to five-year forecast horizon.[24] Meanwhile, for the firms in the Utility Group specifically, the year-end returns on common equity projected by Value Line over its forecast horizon are shown on Exhibit No. 3,

[24] The Value Line Investment Survey (Feb. 17, Mar. 17, & Apr. 28, 2017). Recall that Value Line reports return on year-end equity so the equivalent return on average equity would be higher.

Schedule 10. Consistent with the rationale underlying the development of the br+sv growth rates, these year-end values were converted to average returns using the same adjustment factor discussed earlier and developed on Exhibit No. 3, Schedule 6. As shown on Exhibit No. 3, Schedule 10, Value Line's projections for the Utility Group suggest an average ROE of approximately 10.3 percent, with a midpoint value of 11.1 percent.

II. LOW RISK NON-UTILITY DCF

Q. What other proxy group did you consider in evaluating a fair ROE for Avista?

A. Consistent with underlying economic and regulatory standards, I also applied the DCF model to a reference group of low-risk companies in the non-utility sectors of the economy. I refer to this group as the "Non-Utility Group".

Q. Do utilities have to compete with non-regulated firms for capital?

A. Yes. The cost of capital is an opportunity cost based on the returns that investors could realize by putting their money in other alternatives. Clearly, the total capital invested in utility stocks is only the tip of the iceberg of total common stock investment, and there are a plethora of other enterprises available to investors beyond those in the utility industry. Utilities must compete for

capital, not just against firms in their own industry, but with other investment opportunities of comparable risk.

Q. Does consideration of the results for the Non-Utility Group make the estimation of the cost of equity using the DCF model more reliable for Avista?

A. Yes. The estimates of growth from the DCF model depend on analysts' forecasts. It is possible for utility growth rates to be distorted by short-term trends in the industry, or by the industry falling into favor or disfavor by analysts. The result of such distortions would be to bias the DCF estimates for utilities. Because the Non-Utility Group includes low risk companies from many industries, it diversifies away any distortion that may be caused by the ebb and flow of enthusiasm for a particular sector.

Q. What criteria did you apply to develop the Non-Utility Group?

A. The comparable risk proxy group was composed of those U.S. companies followed by Value Line that:

1) pay common dividends.
2) have a Safety Rank of "1".
3) have a Financial Strength Rating of "A" or greater.
4) have a beta of 0.75 or less.
5) have investment grade credit ratings from S&P and Moody's.

Q. How do the overall risks of this Non-Utility Group compare with the Utility Group and Avista?

A. As illustrated in Table 4 below, the average credit ratings, Safety Rank, and Financial Strength rating for the Non-Utility Group suggest less risk than for Avista and the proxy group of utilities.

TABLE 4
COMPARISON OF RISK INDICATORS

	Credit Rating		Value Line		
	S&P	Moody's	Safety Rank	Financial Strength	Beta
Non-Utility Group	A	A2	1	A+	0.73
Utility Group	BBB	Baa1	2	B++	0.71
Avista	BBB	Baa1	2	A	0.70

When considered together, a comparison of these objective measures, which consider a broad spectrum of risks, including financial and business position, relative size, and exposure to company-specific factors, indicates that investors would likely conclude that the overall investment risks for the Utility Group and Avista are greater than those of the firms in the Non-Utility Group.

The 17 companies that make up the Non-Utility Group are representative of the pinnacle of corporate America. These firms, which include household names such as Coca-Cola, General Mills, and Wal-Mart, have long corporate histories, well-established track records, and exceedingly conservative risk profiles. Many of these companies pay dividends on a

par with utilities, with the average dividend yield for the group approaching 3 percent. Moreover, because of their significance and name recognition, these companies receive intense scrutiny by the investment community, which increases confidence that published growth estimates are representative of the consensus expectations reflected in common stock prices.

Q. What were the results of your DCF analysis for the Non-Utility Group?

A. I applied the DCF model to the Non-Utility Group using analysts EPS growth projections, as described earlier for the Utility Group, with the results being presented in Exhibit No. 3, Schedule 11. As summarized in Table 5, below, application of the constant growth DCF model resulted in the following cost of equity estimates:

TABLE 5
DCF RESULTS – NON-UTILITY GROUP

	Cost of Equity	
Growth Rate	**Average**	**Midpoint**
Value Line	10.7%	11.3%
IBES	10.5%	11.0%
Zacks	10.6%	11.4%

As discussed earlier, reference to the Non-Utility Group is consistent with established regulatory principles. Required returns for utilities should be in line with those of

non-utility firms of comparable risk operating under the constraints of free competition.

Q. How can you reconcile these DCF results for the Non-Utility Group against the lower estimates produced for your group of utilities?

A. First, it is important to be clear that the higher DCF results for the Non-Utility Group cannot be attributed to risk differences. As documented earlier, the risks that investors associate with the group of non-utility firms - as measured by credit ratings, Value Line's Safety Rank, and Financial Strength – are lower than the risks investors associate with the Utility Group and Avista. The objective evidence provided by these observable risk measures rules out a conclusion that the higher non-utility DCF estimates are associated with higher investment risk.

Rather, the divergence between the DCF results for these groups of utility and non-utility firms can be attributed to the fact that DCF estimates invariably depart from the returns that investors actually require because their expectations may not be captured by the inputs to the model, particularly the assumed growth rate. Because the actual cost of equity is unobservable, and DCF results inherently incorporate a degree of error, the cost of equity estimates

for the Non-Utility Group provide an important benchmark in evaluating a fair ROE for Avista.

There is no basis to conclude that DCF results for a group of utilities would be intrinsically more reliable than those for firms in the competitive sector, and the divergence between the DCF estimates for the group of utilities and the Non-Utility Group suggests that both should be considered to ensure a balanced end-result. The DCF results for the Non-Utility Group suggests that the 9.9 percent requested ROE for Avista's utility operations is a conservative estimate of a fair return.

ROE ANALYSES **Schedule 3**

SUMMARY OF RESULTS

DCF	**Average**		**Midpoint**
Value Line	9.1%		9.3%
IBES	10.0%		11.3%
Zacks	9.5%		10.1%
S&P Capital/IQ	9.4%		9.4%
Internal br + sv	8.0%		8.2%
CAPM			
Current Bond Yield	9.9%		9.9%
Projected Bond Yield	10.2%		10.3%
Empirical CAPM			
Current Bond Yield	10.5%		10.6%
Projected Bond Yield	10.7%		10.8%
Utility Risk Premium			
Current Bond Yield	10.1%		
Projected Bond Yields	10.9%		
Expected Earnings			
Industry	10.8%		
Proxy Group	10.3%		11.1%
Recommended Cost of Equity Range			
Cost of Equity Range	9.5%	--	10.7%
Flotation Cost Adjustment	0.10%		
ROE Recommendation	**9.6%**	**--**	**10.8%**

UTILITY GROUP

		At Fiscal Year-End 2016 (a)			Value Line Projected (b)		
	Company	**Debt**	**Preferred**	**Common Equity**	**Debt**	**Other**	**Common Equity**
1	ALLETE	45.1%	0.0%	54.9%	40.0%	0.0%	60.0%
2	Ameren Corp.	50.1%	0.0%	49.9%	48.5%	1.0%	50.5%
3	Avangrid, Inc.	24.3%	0.0%	75.7%	24.0%	0.0%	76.0%
4	Avista Corp.	50.5%	0.0%	49.5%	49.0%	0.0%	51.0%
5	Black Hills Corp.	65.0%	0.0%	35.0%	59.5%	0.0%	40.5%
6	CMS Energy Corp.	68.9%	0.0%	31.1%	64.5%	0.0%	35.5%
7	Dominion Energy	65.5%	0.0%	34.5%	70.5%	0.0%	29.5%
8	DTE Energy Co.	54.3%	0.0%	45.7%	56.5%	0.0%	43.5%
9	Edison International	44.0%	8.6%	47.3%	45.0%	7.5%	47.5%
10	El Paso Electric Co.	54.3%	0.0%	45.7%	51.5%	0.0%	48.5%
11	Entergy Corp.	64.2%	0.9%	35.0%	62.5%	0.5%	37.0%
12	Exelon Corp.	55.2%	0.0%	44.8%	52.5%	0.0%	47.5%
13	Hawaiian Elec.	43.9%	0.0%	56.1%	47.5%	1.0%	51.5%
14	IDACORP, Inc.	56.6%	0.0%	43.4%	42.5%	0.0%	57.5%
15	NorthWestern Corp.	51.7%	0.0%	48.3%	48.0%	0.0%	52.0%
16	Otter Tail Corp.	44.6%	0.0%	55.4%	40.0%	0.0%	60.0%
17	Portland General Elec.	50.1%	0.0%	49.9%	50.5%	0.0%	49.5%
18	Sempra Energy	50.2%	0.1%	49.8%	60.0%	0.0%	40.0%
	Average	**52.1%**	**0.5%**	**47.3%**	**50.7%**	**0.6%**	**48.8%**

(a) Company Form 10-K and Annual Reports.
(b) The Value Line Investment Survey (Mar. 17, Apr. 28, & May 19, 2017).

UTILITY GROUP

	Operating Company	At Year-End 2016 (a) Debt	Preferred	Common Equity
1	Ameren Illinois Co.	45.5%	1.1%	53.4%
2	Atlantic City Electric Co.	52.8%	0.0%	47.2%
3	Baltimore Gas & Electric Co.	44.9%	0.0%	55.1%
4	Black Hills Power	46.9%	0.0%	53.1%
5	Black Hills/Colorado Electric Utility Co	49.2%	0.0%	50.8%
6	Central Maine Power	39.0%	0.0%	61.0%
7	Cheyenne Light Fuel & Power	46.8%	0.0%	53.2%
8	Commonweath Edison Co.	44.6%	0.0%	55.4%
9	Consumers Energy Co.	48.8%	0.3%	50.9%
10	Delmarva Power and Light	50.3%	0.0%	49.7%
11	DTE Electric Co.	49.6%	0.0%	50.4%
12	Entergy Arkansas Inc.	55.3%	0.6%	44.1%
13	Entergy Louisiana LLC	53.4%	0.0%	46.6%
14	Entergy Mississippi Inc.	50.1%	0.9%	49.0%
15	Entergy New Orleans Inc.	49.1%	2.3%	48.7%
16	Entergy Texas Inc.	58.5%	0.0%	41.5%
17	Hawaiian Electric Co.	41.8%	1.1%	57.1%
18	Idaho Power Co.	58.4%	0.0%	41.6%
19	Minnesota Power	n/a	n/a	n/a
20	New York State Electric & Gas	43.6%	0.0%	56.4%
21	Otter Tail Power Co.	47.2%	0.0%	52.8%
22	PECO Energy Co.	43.0%	0.0%	57.0%
23	Potomac Electric Power Co.	50.5%	0.0%	49.5%
24	Rochester Gas and Electric	45.1%	0.0%	54.9%
25	San Diego Gas & Electric	46.1%	0.0%	53.9%
26	Southern California Edison Co.	41.6%	9.0%	49.3%
27	Southern California Gas Co.	45.9%	0.3%	53.7%
28	Superior Water, Light & Power Co.	39.8%	0.0%	60.2%
29	Union Electric Co.	48.9%	1.0%	50.1%
30	United Illuminating	48.1%	0.0%	51.9%
31	Virginia Electric Power	47.0%	0.0%	53.0%
	Minimum	**39.0%**	**0.0%**	**41.5%**
	Maximum	**58.5%**	**9.0%**	**61.0%**
	Simple Average	**47.7%**	**0.6%**	**51.7%**
	Weighted Average	**47.2%**	**1.4%**	**51.4%**

(a) Company Form 10-K, Annual Reports, and FERC Form 1 Reports.

DIVIDEND YIELD

	Company	(a) Price	(b) Dividends	Yield
1	ALLETE	$ 69.47	$ 2.16	3.1%
2	Ameren Corp.	$ 54.84	$ 1.79	3.3%
3	Avangrid, Inc.	$ 43.72	$ 1.73	4.0%
4	Avista Corp.	$ 40.66	$ 1.45	3.6%
5	Black Hills Corp.	$ 67.99	$ 1.81	2.7%
6	CMS Energy Corp.	$ 45.35	$ 1.35	3.0%
7	Dominion Energy	$ 77.67	$ 3.14	4.0%
8	DTE Energy Co.	$ 104.37	$ 3.42	3.3%
9	Edison International	$ 79.64	$ 2.25	2.8%
10	El Paso Electric Co.	$ 51.43	$ 1.32	2.6%
11	Entergy Corp.	$ 76.22	$ 3.52	4.6%
12	Exelon Corp.	$ 34.90	$ 1.31	3.8%
13	Hawaiian Elec.	$ 33.30	$ 1.24	3.7%
14	IDACORP, Inc.	$ 84.19	$ 2.28	2.7%
15	NorthWestern Corp.	$ 60.04	$ 2.13	3.5%
16	Otter Tail Corp.	$ 38.36	$ 1.28	3.3%
17	Portland General Elec.	$ 45.35	$ 1.36	3.0%
18	Sempra Energy	$ 111.78	$ 3.36	3.0%
	Average			**3.3%**

(a) Average of closing prices for 30 trading days ended May 19, 2017.
(b) The Value Line Investment Survey, Summary & Index (May 19, 2017).

GROWTH RATES

		(a)	(b)	(c)	(d)	(e)
		Earnings Growth				
	Company	**V Line**	**IBES**	**Zacks**	**S&P Capital IQ**	**br+sv Growth**
1	ALLETE	5.0%	5.0%	6.1%	6.6%	3.7%
2	Ameren Corp.	6.0%	6.3%	6.5%	6.1%	3.9%
3	Avangrid, Inc.	n/a	9.0%	8.5%	7.8%	1.7%
4	Avista Corp.	2.5%	5.7%	n/a	n/a	2.5%
5	Black Hills Corp.	7.5%	12.0%	5.0%	5.0%	6.6%
6	CMS Energy Corp.	6.5%	7.5%	6.0%	7.1%	5.8%
7	Dominion Energy	5.5%	4.0%	6.0%	5.6%	0.1%
8	DTE Energy Co.	5.0%	4.6%	5.9%	5.7%	4.2%
9	Edison International	3.0%	4.1%	6.3%	6.0%	4.6%
10	El Paso Electric Co.	5.0%	6.5%	7.9%	7.9%	4.1%
11	Entergy Corp.	-2.5%	-6.8%	0.0%	6.0%	2.8%
12	Exelon Corp.	7.0%	2.2%	4.9%	4.7%	4.7%
13	Hawaiian Elec.	1.5%	2.7%	4.0%	3.4%	3.0%
14	IDACORP, Inc.	3.5%	4.0%	4.0%	4.0%	3.7%
15	NorthWestern Corp.	4.5%	3.4%	3.3%	3.3%	3.9%
16	Otter Tail Corp.	5.0%	5.2%	n/a	6.0%	5.3%
17	Portland General Elec.	6.0%	5.6%	5.3%	4.4%	4.3%
18	Sempra Energy	8.0%	9.9%	8.7%	8.0%	3.7%

(a) The Value Line Investment Survey (Mar. 17, Apr. 28, & May 19, 2017).
(b) www.finance.yahoo.com (May 25, 2017).
(c) www.zacks.com (May 25, 2017).
(d) SNL, S&P Global, Inc. (May 25, 2017).
(e) See Schedule 6.

DCF COST OF EQUITY ESTIMATES

		(a)	(a)	(a)	(a)	(a)
		Earnings Growth				
	Company	**V Line**	**IBES**	**Zacks**	**S&P Capital/IQ**	**br+sv Growth**
1	ALLETE	8.1%	8.1%	9.2%	9.7%	6.8%
2	Ameren Corp.	9.3%	9.5%	9.8%	9.4%	7.1%
3	Avangrid, Inc.	n/a	13.0%	12.5%	11.8%	5.7%
4	Avista Corp.	6.1%	9.2%	n/a	n/a	6.0%
5	Black Hills Corp.	10.2%	14.7%	7.7%	7.7%	9.3%
6	CMS Energy Corp.	9.5%	10.5%	9.0%	10.1%	8.8%
7	Dominion Energy	9.5%	8.0%	10.0%	9.6%	4.2%
8	DTE Energy Co.	8.3%	7.9%	9.2%	9.0%	7.5%
9	Edison International	5.8%	6.9%	9.1%	8.8%	7.5%
10	El Paso Electric Co.	7.6%	9.1%	10.5%	10.5%	6.7%
11	Entergy Corp.	2.1%	-2.2%	4.6%	10.6%	7.4%
12	Exelon Corp.	10.8%	6.0%	8.7%	8.5%	8.5%
13	Hawaiian Elec.	5.2%	6.4%	7.7%	7.1%	6.7%
14	IDACORP, Inc.	6.2%	6.7%	6.7%	6.7%	6.4%
15	NorthWestern Corp.	8.0%	6.9%	6.8%	6.8%	7.4%
16	Otter Tail Corp.	8.3%	8.5%	n/a	9.3%	8.7%
17	Portland General Elec.	9.0%	8.5%	8.3%	7.4%	7.3%
18	Sempra Energy	11.0%	12.9%	11.7%	11.0%	6.7%
	Average (b)	**9.1%**	**10.0%**	**9.5%**	**9.4%**	**8.0%**
	Midpoint (b,c)	**9.3%**	**11.3%**	**10.1%**	**9.4%**	**8.2%**

(a) Sum of dividend yield (Schedule 5, p. 1) and respective growth rate (Schedule 5, p. 2).
(b) Excludes highlighted figures.
(c) Average of low and high values.

BR+SV GROWTH RATE

		(a)	(a)	(a)			(b)	(c)		(d)	(e)		
		2021					Adjustment			"sv" Factor			
	Company	EPS	DPS	BVPS	b	r	Factor	Adjusted r	br	s	v	sv	br + sv
1	ALLETE	$4.00	$2.50	$45.50	37.5%	8.8%	1.0218	9.0%	3.4%	0.0125	0.2417	0.30%	**3.7%**
2	Ameren Corp.	$3.50	$2.15	$35.50	38.6%	9.9%	1.0190	10.0%	3.9%	-	0.3238	0.00%	**3.9%**
3	Avangrid, Inc.	$2.75	$1.85	$52.00	32.7%	5.3%	1.0060	5.3%	1.7%	0.0000	(0.3000)	0.00%	**1.7%**
4	Avista Corp.	$2.25	$1.67	$29.00	25.8%	7.8%	1.0181	7.9%	2.0%	0.0160	0.2750	0.44%	**2.5%**
5	Black Hills Corp.	$4.25	$2.20	$41.00	48.2%	10.4%	1.0440	10.8%	5.2%	0.0412	0.3440	1.42%	**6.6%**
6	CMS Energy Corp.	$2.75	$1.70	$21.00	38.2%	13.1%	1.0356	13.6%	5.2%	0.0132	0.4750	0.63%	**5.8%**
7	Dominion Energy	$4.50	$4.20	$24.25	6.7%	18.6%	1.0025	18.6%	1.2%	(0.0153)	0.7306	-1.11%	**0.1%**
8	DTE Energy Co.	$6.50	$4.30	$62.00	33.8%	10.5%	1.0254	10.8%	3.6%	0.0137	0.3951	0.54%	**4.2%**
9	Edison International	$5.00	$2.90	$46.25	42.0%	10.8%	1.0228	11.1%	4.6%	-	0.4394	0.00%	**4.6%**
10	El Paso Electric Co.	$3.00	$1.75	$32.25	41.7%	9.3%	1.0208	9.5%	4.0%	0.0037	0.3550	0.13%	**4.1%**
11	Entergy Corp.	$5.25	$3.80	$52.00	27.6%	10.1%	1.0150	10.2%	2.8%	(0.0002)	0.3500	-0.01%	**2.8%**
12	Exelon Corp.	$3.25	$1.70	$35.50	47.7%	9.2%	1.0280	9.4%	4.5%	0.0124	0.2111	0.26%	**4.7%**
13	Hawaiian Elec.	$2.00	$1.40	$22.00	30.0%	9.1%	1.0174	9.2%	2.8%	0.0085	0.2667	0.23%	**3.0%**
14	IDACORP, Inc.	$4.75	$2.90	$51.50	38.9%	9.2%	1.0195	9.4%	3.7%	0.0014	0.2897	0.04%	**3.7%**
15	NorthWestern Corp.	$4.00	$2.50	$41.00	37.5%	9.8%	1.0177	9.9%	3.7%	0.0048	0.3440	0.17%	**3.9%**
16	Otter Tail Corp.	$2.20	$1.38	$23.20	37.3%	9.5%	1.0417	9.9%	3.7%	0.0389	0.4200	1.64%	**5.3%**
17	Portland General Elec.	$3.00	$1.70	$31.00	43.3%	9.7%	1.0176	9.8%	4.3%	0.0030	0.2250	0.07%	**4.3%**
18	Sempra Energy	$7.50	$4.55	$57.75	39.3%	13.0%	1.0078	13.1%	5.1%	(0.0261)	0.5558	-1.45%	**3.7%**

BR+SV GROWTH RATE

		(a)	(a)	(f)	(a)	(a)	(f)	(g)	(a)	(a)		(h)	(a)	(a)	(g)
			2016			2021		Chg		2021 Price				Common Shares	
	Company	Eq Ratio	Tot Cap	Com Eq	Eq Ratio	Tot Cap	Com Eq	Equity	High	Low	Avg.	M/B	2016	2021	Growth
1	ALLETE	58.0%	$3,263	$1,893	60.0%	$3,925	$2,355	4.5%	$70.00	$50.00	$60.00	1.319	49.60	52.00	0.95%
2	Ameren Corp.	51.3%	$13,840	$7,100	50.5%	$17,000	$8,585	3.9%	$60.00	$45.00	$52.50	1.479	242.63	242.63	0.00%
3	Avangrid, Inc.	77.0%	$19,619	$15,107	76.0%	$21,100	$16,036	1.2%	$45.00	$35.00	$40.00	0.769	308.99	309.00	0.00%
4	Avista Corp.	48.8%	$3,379	$1,649	51.0%	$3,875	$1,976	3.7%	$45.00	$35.00	$40.00	1.379	64.19	68.00	1.16%
5	Black Hills Corp.	33.5%	$4,826	$1,617	40.5%	$6,200	$2,511	9.2%	$70.00	$55.00	$62.50	1.524	53.38	61.00	2.70%
6	CMS Energy Corp.	32.6%	$13,040	$4,251	35.5%	$17,100	$6,071	7.4%	$45.00	$35.00	$40.00	1.905	279.21	289.00	0.69%
7	Dominion Energy	32.6%	$44,836	$14,617	29.5%	$50,800	$14,986	0.5%	$105.00	$75.00	$90.00	3.711	627.80	615.00	-0.41%
8	DTE Energy Co.	44.4%	$20,280	$9,004	43.5%	$26,700	$11,615	5.2%	$120.00	$85.00	$102.50	1.653	179.43	187.00	0.83%
9	Edison International	49.2%	$24,362	$11,986	47.5%	$31,700	$15,058	4.7%	$95.00	$70.00	$82.50	1.784	325.81	325.81	0.00%
10	El Paso Electric Co.	47.3%	$2,270	$1,074	48.5%	$2,725	$1,322	4.2%	$60.00	$40.00	$50.00	1.550	40.52	41.00	0.24%
11	Entergy Corp.	35.5%	$22,777	$8,086	37.0%	$25,400	$9,398	3.1%	$95.00	$65.00	$80.00	1.538	179.13	179.00	-0.01%
12	Exelon Corp.	44.5%	$58,053	$25,834	47.5%	$72,000	$34,200	5.8%	$55.00	$35.00	$45.00	1.268	924.04	970.00	0.98%
13	Hawaiian Elec.	57.5%	$3,595	$2,067	51.5%	$4,775	$2,459	3.5%	$35.00	$25.00	$30.00	1.364	108.58	112.00	0.62%
14	IDACORP, Inc.	55.2%	$3,899	$2,152	57.5%	$4,550	$2,616	4.0%	$85.00	$60.00	$72.50	1.408	50.40	50.65	0.10%
15	NorthWestern Corp.	48.0%	$3,494	$1,677	52.0%	$3,850	$2,002	3.6%	$75.00	$50.00	$62.50	1.524	48.33	49.10	0.32%
16	Otter Tail Corp.	57.0%	$1,175	$670	60.0%	$1,695	$1,017	8.7%	$45.00	$35.00	$40.00	1.724	39.35	44.00	2.26%
17	Portland General Elec.	51.6%	$4,544	$2,345	49.5%	$5,650	$2,797	3.6%	$45.00	$35.00	$40.00	1.290	88.95	90.00	0.23%
18	Sempra Energy	47.3%	$24,963	$11,807	40.0%	$31,900	$12,760	1.6%	$150.00	$110.00	$130.00	2.251	250.15	236.00	-1.16%

(a) The Value Line Investment Survey (Mar. 17, Apr. 28, & May 19, 2017).
(b) Computed using the formula 2*(1+5-Yr. Change in Equity)/(2+5 Yr. Change in Equity).
(c) Product of average year-end "r" for 2021 and Adjustment Factor.
(d) Product of change in common shares outstanding and M/B Ratio.
(e) Computed as 1 - B/M Ratio.
(f) Product of total capital and equity ratio.
(g) Five-year rate of change in common equity.
(h) Average of High and Low expected market prices divided by 2021 BVPS.

CAPM - CURRENT BOND YIELD **Schedule 7**

Page 1 of 2

UTILITY GROUP

		(a)	(b)		(c)		(d)		(e)	(f)	
		Market Return (R_m)									Size
	Company	Div Yield	Proj. Growth	Cost of Equity	Risk-Free Rate	Risk Premium	Beta	Unadjusted K_e	Market Cap	Size Adjustment	Adjusted K_e
1	ALLETE	2.4%	9.2%	11.6%	3.0%	8.6%	0.80	9.9%	$ 3,520.8	0.98%	10.9%
2	Ameren Corp.	2.4%	9.2%	11.6%	3.0%	8.6%	0.70	9.0%	$13,415.8	0.61%	9.6%
3	Avangrid, Inc.	2.4%	9.2%	11.6%	3.0%	8.6%	NA	NA	$13,599.0	0.61%	NA
4	Avista Corp.	2.4%	9.2%	11.6%	3.0%	8.6%	0.70	9.0%	$ 2,675.9	1.51%	10.5%
5	Black Hills Corp.	2.4%	9.2%	11.6%	3.0%	8.6%	0.85	10.3%	$ 3,607.6	0.98%	11.3%
6	CMS Energy Corp.	2.4%	9.2%	11.6%	3.0%	8.6%	0.65	8.6%	$12,810.0	0.61%	9.2%
7	Dominion Energy	2.4%	9.2%	11.6%	3.0%	8.6%	0.65	8.6%	$49,263.3	-0.35%	8.2%
8	DTE Energy Co.	2.4%	9.2%	11.6%	3.0%	8.6%	0.65	8.6%	$18,896.6	0.61%	9.2%
9	Edison International	2.4%	9.2%	11.6%	3.0%	8.6%	0.60	8.2%	$25,400.2	-0.35%	7.8%
10	El Paso Electric Co.	2.4%	9.2%	11.6%	3.0%	8.6%	0.75	9.5%	$ 2,092.2	1.66%	11.1%
11	Entergy Corp.	2.4%	9.2%	11.6%	3.0%	8.6%	0.65	8.6%	$13,595.6	0.61%	9.2%
12	Exelon Corp.	2.4%	9.2%	11.6%	3.0%	8.6%	0.65	8.6%	$32,484.1	-0.35%	8.2%
13	Hawaiian Elec.	2.4%	9.2%	11.6%	3.0%	8.6%	0.70	9.0%	$ 3,509.2	1.51%	10.5%
14	IDACORP, Inc.	2.4%	9.2%	11.6%	3.0%	8.6%	0.75	9.5%	$ 4,198.6	0.98%	10.4%
15	NorthWestern Corp.	2.4%	9.2%	11.6%	3.0%	8.6%	0.65	8.6%	$ 3,130.8	1.51%	10.1%
16	Otter Tail Corp.	2.4%	9.2%	11.6%	3.0%	8.6%	0.85	10.3%	$ 1,462.3	1.72%	12.0%
17	Portland General Elec	2.4%	9.2%	11.6%	3.0%	8.6%	0.70	9.0%	$ 4,014.3	0.98%	10.0%
18	Sempra Energy	2.4%	9.2%	11.6%	3.0%	8.6%	0.80	9.9%	$27,800.8	-0.35%	9.5%
	Average (g)							**9.1%**			**9.9%**
	Midpoint (h)							**9.2%**			**9.9%**

(a) Weighted average for dividend-paying stocks in the S&P 500 based on data from www.zacks.com (retrieved Apr. 7, 2017).

(b) Average of weighted average earnings growth rates from Value Line Investment Survey, IBES, and Zacks Investment Research for dividend-paying stocks in the S&P 500 based on data from www.valueline.com (Apr. 7, 2017), http://finance.yahoo.com (retrieved Apr. 9, 2017), and www.zacks.com (retrieved Apr. 7, 2017).

(c) Average yield on 30-year Treasury bonds for the six-months ending Apr. 2017 based on data from the Federal Reserve at http://www.fred.stlouisfed.org.

(d) The Value Line Investment Survey (Mar. 17, Apr. 28, & May 19, 2017).

(e) www.valueline.com (retrieved May 24, 2017).

(f) Duff & Phelps, 2017 Valuation Handbook-U.S. Guide to Cost of Capital (Preview Version), p. 19.

(g) Excludes highlighted figures.

(h) Average of low and high values.

CAPM - PROJECTED BOND YIELD

UTILITY GROUP

		(a)	(b)		(c)		(d)		(e)	(f)	
		Market Return (R_m)									
	Company	Div Yield	Proj. Growth	Cost of Equity	Risk-Free Rate	Risk Premium	Beta	Unadjusted K_e	Market Cap	Size Adjustment	Size Adjusted K_e
1	ALLETE	2.4%	9.2%	11.6%	4.1%	7.5%	0.80	10.1%	$ 3,520.8	0.98%	11.1%
2	Ameren Corp.	2.4%	9.2%	11.6%	4.1%	7.5%	0.70	9.4%	$13,415.8	0.61%	10.0%
3	Avangrid, Inc.	2.4%	9.2%	11.6%	4.1%	7.5%	NA	NA	$13,599.0	0.61%	NA
4	Avista Corp.	2.4%	9.2%	11.6%	4.1%	7.5%	0.70	9.4%	$ 2,675.9	1.51%	10.9%
5	Black Hills Corp.	2.4%	9.2%	11.6%	4.1%	7.5%	0.85	10.5%	$ 3,607.6	0.98%	11.5%
6	CMS Energy Corp.	2.4%	9.2%	11.6%	4.1%	7.5%	0.65	9.0%	$12,810.0	0.61%	9.6%
7	Dominion Energy	2.4%	9.2%	11.6%	4.1%	7.5%	0.65	9.0%	$49,263.3	-0.35%	8.6%
8	DTE Energy Co.	2.4%	9.2%	11.6%	4.1%	7.5%	0.65	9.0%	$18,896.6	0.61%	9.6%
9	Edison International	2.4%	9.2%	11.6%	4.1%	7.5%	0.60	8.6%	$25,400.2	-0.35%	8.3%
10	El Paso Electric Co.	2.4%	9.2%	11.6%	4.1%	7.5%	0.75	9.7%	$ 2,092.2	1.66%	11.4%
11	Entergy Corp.	2.4%	9.2%	11.6%	4.1%	7.5%	0.65	9.0%	$13,595.6	0.61%	9.6%
12	Exelon Corp.	2.4%	9.2%	11.6%	4.1%	7.5%	0.65	9.0%	$32,484.1	-0.35%	8.6%
13	Hawaiian Elec.	2.4%	9.2%	11.6%	4.1%	7.5%	0.70	9.4%	$ 3,509.2	1.51%	10.9%
14	IDACORP, Inc.	2.4%	9.2%	11.6%	4.1%	7.5%	0.75	9.7%	$ 4,198.6	0.98%	10.7%
15	NorthWestern Corp.	2.4%	9.2%	11.6%	4.1%	7.5%	0.65	9.0%	$ 3,130.8	1.51%	10.5%
16	Otter Tail Corp.	2.4%	9.2%	11.6%	4.1%	7.5%	0.85	10.5%	$ 1,462.3	1.72%	12.2%
17	Portland General Elec	2.4%	9.2%	11.6%	4.1%	7.5%	0.70	9.4%	$ 4,014.3	0.98%	10.3%
18	Sempra Energy	2.4%	9.2%	11.6%	4.1%	7.5%	0.80	10.1%	$27,800.8	-0.35%	9.8%
	Average							**9.4%**			**10.2%**
	Midpoint (g)							**9.5%**			**10.3%**

(a) Weighted average for dividend-paying stocks in the S&P 500 based on data from www.zacks.com (retrieved Apr. 7, 2017).

(b) Average of weighted average earnings growth rates from Value Line Investment Survey, IBES, and Zacks Investment Research for dividend-paying stocks in the S&P 500 based on data from www.valueline.com (Apr. 7, 2017), http://finance.yahoo.com (retrieved Apr. 9, 2017), and www.zacks.com (retrieved Apr. 7, 2017).

(c) Average yield on 30-year Treasury bonds for 2018-22 based on data from the Value Line Investment Survey, Forecast for the U.S. Economy (Mar. 3, 2017); IHS Global Insight (Feb. 2017); & Wolters Kluwer, Blue Chip Financial Forecasts, Vol. 35, No. 12 (Dec. 1, 2016).

(d) The Value Line Investment Survey (Mar. 17, Apr. 28, & May 19, 2017).

(e) www.valueline.com (retrieved May 24, 2017).

(f) Duff & Phelps, 2017 Valuation Handbook-U.S. Guide to Cost of Capital (Preview Version), p. 19.

(g) Average of low and high values.

EMPIRICAL CAPM - CURRENT BOND YIELD

UTILITY GROUP

		(a)	(b)		(c)		(d)		(e)	(d)				(f)	(g)	
		Market Return (R_m)				Market										Size
		Div	Proj.	Cost of	Risk-Free	Risk	Unadjusted RP		Beta Adjusted RP			Total	Unadjusted	Market	Size	Adjusted
	Company	Yield	Growth	Equity	Rate	Premium	Weight	RP^1	Beta	Weight	RP^2	RP	K_e	Cap	Adjustment	K_e
1	ALLETE	2.4%	9.2%	11.6%	3.0%	8.6%	25%	2.2%	0.80	75%	5.2%	7.3%	10.3%	$ 3,520.8	0.98%	11.3%
2	Ameren Corp.	2.4%	9.2%	11.6%	3.0%	8.6%	25%	2.2%	0.70	75%	4.5%	6.7%	9.7%	$13,415.8	0.61%	10.3%
3	Avangrid, Inc.	2.4%	9.2%	11.6%	3.0%	8.6%	25%	2.2%	NA	75%	NA	NA	NA	$13,599.0	0.61%	NA
4	Avista Corp.	2.4%	9.2%	11.6%	3.0%	8.6%	25%	2.2%	0.70	75%	4.5%	6.7%	9.7%	$ 2,675.9	1.51%	11.2%
5	Black Hills Corp.	2.4%	9.2%	11.6%	3.0%	8.6%	25%	2.2%	0.85	75%	5.5%	7.6%	10.6%	$ 3,607.6	0.98%	11.6%
6	CMS Energy Corp.	2.4%	9.2%	11.6%	3.0%	8.6%	25%	2.2%	0.65	75%	4.2%	6.3%	9.3%	$12,810.0	0.61%	10.0%
7	Dominion Energy	2.4%	9.2%	11.6%	3.0%	8.6%	25%	2.2%	0.65	75%	4.2%	6.3%	9.3%	$49,263.3	-0.35%	9.0%
8	DTE Energy Co.	2.4%	9.2%	11.6%	3.0%	8.6%	25%	2.2%	0.65	75%	4.2%	6.3%	9.3%	$18,896.6	0.61%	10.0%
9	Edison Internationa	2.4%	9.2%	11.6%	3.0%	8.6%	25%	2.2%	0.60	75%	3.9%	6.0%	9.0%	$25,400.2	-0.35%	8.7%
10	El Paso Electric C	2.4%	9.2%	11.6%	3.0%	8.6%	25%	2.2%	0.75	75%	4.8%	7.0%	10.0%	$ 2,092.2	1.66%	11.6%
11	Entergy Corp.	2.4%	9.2%	11.6%	3.0%	8.6%	25%	2.2%	0.65	75%	4.2%	6.3%	9.3%	$13,595.6	0.61%	10.0%
12	Exelon Corp.	2.4%	9.2%	11.6%	3.0%	8.6%	25%	2.2%	0.65	75%	4.2%	6.3%	9.3%	$32,484.1	-0.35%	9.0%
13	Hawaiian Elec.	2.4%	9.2%	11.6%	3.0%	8.6%	25%	2.2%	0.70	75%	4.5%	6.7%	9.7%	$ 3,509.2	1.51%	11.2%
14	IDACORP, Inc.	2.4%	9.2%	11.6%	3.0%	8.6%	25%	2.2%	0.75	75%	4.8%	7.0%	10.0%	$ 4,198.6	0.98%	11.0%
15	NorthWestern Corp.	2.4%	9.2%	11.6%	3.0%	8.6%	25%	2.2%	0.65	75%	4.2%	6.3%	9.3%	$ 3,130.8	1.51%	10.9%
16	Otter Tail Corp.	2.4%	9.2%	11.6%	3.0%	8.6%	25%	2.2%	0.85	75%	5.5%	7.6%	10.6%	$ 1,462.3	1.72%	12.4%
17	Portland General E	2.4%	9.2%	11.6%	3.0%	8.6%	25%	2.2%	0.70	75%	4.5%	6.7%	9.7%	$ 4,014.3	0.98%	10.6%
18	Sempra Energy	2.4%	9.2%	11.6%	3.0%	8.6%	25%	2.2%	0.80	75%	5.2%	7.3%	10.3%	$27,800.8	-0.35%	10.0%
	Average												**9.7%**			**10.5%**
	Midpoint (h)												**9.8%**			**10.6%**

(a) Weighted average for dividend-paying stocks in the S&P 500 based on data from www.zacks.com (retrieved Apr. 7, 2017).

(b) Average of weighted average earnings growth rates from Value Line Investment Survey, IBES, and Zacks Investment Research for dividend-paying stocks in the S&P 500 based on data from www.valueline.com (Apr. 7, 2017), http://finance.yahoo.com (retrieved Apr. 9, 2017), and www.zacks.com (retrieved Apr. 7, 2017).

(c) Average yield on 30-year Treasury bonds for the six-months ending Apr. 2017 based on data from the Federal Reserve at http://www.fred.stlouisfed.org.

(d) Morin, Roger A., "New Regulatory Finance," *Public Utilities Reports, Inc.* at 190 (2006).

(e) The Value Line Investment Survey (Mar. 17, Apr. 28, & May 19, 2017).

(f) www.valueline.com (retrieved May 24, 2017).

(g) Duff & Phelps, 2017 Valuation Handbook-U.S. Guide to Cost of Capital (Preview Version), p. 19.

(h) Average of low and high values.

UTILITY GROUP

		(a)	(b)		(c)	(d)			(e)	(d)				(f)	(g)	
		Market Return (R_m)				Market										Size
		Div	Proj.	Cost of	Risk-Free	Risk	Unadjusted RP		Beta Adjusted RP			Total	Unadjusted	Market	Size	Adjusted
	Company	Yield	Growth	Equity	Rate	Premium	Weight	RP^1	Beta	Weight	RP^2	RP	K_e	Cap	Adjustment	K_e
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4	Avista Corp.	2.4%	9.2%	11.6%	4.1%	7.5%	25%	1.9%	0.70	75%	3.9%	5.8%	9.9%	$ 2,675.9	1.51%	11.4%
5	Black Hills Corp.	2.4%	9.2%	11.6%	4.1%	7.5%	25%	1.9%	0.85	75%	4.8%	6.7%	10.8%	$ 3,607.6	0.98%	11.7%
6	CMS Energy Corp.	2.4%	9.2%	11.6%	4.1%	7.5%	25%	1.9%	0.65	75%	3.7%	5.5%	9.6%	$12,810.0	0.61%	10.2%
7	Dominion Energy	2.4%	9.2%	11.6%	4.1%	7.5%	25%	1.9%	0.65	75%	3.7%	5.5%	9.6%	$49,263.3	-0.35%	9.3%
8	DTE Energy Co.	2.4%	9.2%	11.6%	4.1%	7.5%	25%	1.9%	0.65	75%	3.7%	5.5%	9.6%	$18,896.6	0.61%	10.2%
9	Edison Internationa	2.4%	9.2%	11.6%	4.1%	7.5%	25%	1.9%	0.60	75%	3.4%	5.3%	9.4%	$25,400.2	-0.35%	9.0%
10	El Paso Electric Co	2.4%	9.2%	11.6%	4.1%	7.5%	25%	1.9%	0.75	75%	4.2%	6.1%	10.2%	$ 2,092.2	1.66%	11.9%
11	Entergy Corp.	2.4%	9.2%	11.6%	4.1%	7.5%	25%	1.9%	0.65	75%	3.7%	5.5%	9.6%	$13,595.6	0.61%	10.2%
12	Exelon Corp.	2.4%	9.2%	11.6%	4.1%	7.5%	25%	1.9%	0.65	75%	3.7%	5.5%	9.6%	$32,484.1	-0.35%	9.3%
13	Hawaiian Elec.	2.4%	9.2%	11.6%	4.1%	7.5%	25%	1.9%	0.70	75%	3.9%	5.8%	9.9%	$ 3,509.2	1.51%	11.4%
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16	Otter Tail Corp.	2.4%	9.2%	11.6%	4.1%	7.5%	25%	1.9%	0.85	75%	4.8%	6.7%	10.8%	$ 1,462.3	1.72%	12.5%
17	Portland General El	2.4%	9.2%	11.6%	4.1%	7.5%	25%	1.9%	0.70	75%	3.9%	5.8%	9.9%	$ 4,014.3	0.98%	10.9%
18	Sempra Energy	2.4%	9.2%	11.6%	4.1%	7.5%	25%	1.9%	0.80	75%	4.5%	6.4%	10.5%	$27,800.8	-0.35%	10.1%
	Average												**10.0%**			**10.7%**
	Midpoint (h)												**10.1%**			**10.8%**

(a) Weighted average for dividend-paying stocks in the S&P 500 based on data from www.zacks.com (retrieved Apr. 7, 2017).

(b) Average of weighted average earnings growth rates from Value Line Investment Survey, IBES, and Zacks Investment Research for dividend-paying stocks in the S&P 500 based on data from www.valueline.com (Apr. 7, 2017), http://finance.yahoo.com (retrieved Apr. 9, 2017), and www.zacks.com (retrieved Apr. 7, 2017).

(c) Average yield on 30-year Treasury bonds for 2018-22 based on data from the Value Line Investment Survey, Forecast for the U.S. Economy (Mar. 3, 2017); IHS Global Insight (Feb. 2017); & Wolters Kluwer, Blue Chip Financial Forecasts, Vol. 35, No. 12 (Dec. 1, 2016).

(d) Morin, Roger A., "New Regulatory Finance," *Public Utilities Reports, Inc.* at 190 (2006).

(e) The Value Line Investment Survey (Mar. 17, Apr. 28, & May 19, 2017).

(f) www.valueline.com (retrieved May 24, 2017).

(g) Duff & Phelps, 2017 Valuation Handbook-U.S. Guide to Cost of Capital (Preview Version), p. 19.

(h) Average of low and high values.

ELECTRIC UTILITY RISK PREMIUM **Schedule 9**

Page 1 of 4

CURRENT BOND YIELD

Current Equity Risk Premium

(a)	Avg. Yield over Study Period	8.38%
(b)	Average Utility Bond Yield	4.26%
	Change in Bond Yield	-4.12%
(c)	Risk Premium/Interest Rate Relationship	-0.4301
	Adjustment to Average Risk Premium	1.77%
(a)	Average Risk Premium over Study Period	3.67%
	Adjusted Risk Premium	**5.44%**

Implied Cost of Equity

(b)	Baa Utility Bond Yield	4.63%
	Adjusted Equity Risk Premium	5.44%
	Risk Premium Cost of Equity	**10.07%**

(a) Schedule 9, page 3.

(b) Average bond yield on all utility bonds and Baa subset for the six-months ending Apr. 2017 based on data from Moody's Investors Service at www.credittrends.com.

(c) Schedule 9, page 4.

PROJECTED BOND YIELD

Current Equity Risk Premium	
(a) Avg. Yield over Study Period	8.38%
(b) Average Utility Bond Yield 2018-2022	5.72%
Change in Bond Yield	-2.66%
(c) Risk Premium/Interest Rate Relationship	-0.4301
Adjustment to Average Risk Premium	1.14%
(a) Average Risk Premium over Study Period	3.67%
Adjusted Risk Premium	**4.81%**
Implied Cost of Equity	
(b) Baa Utility Bond Yield 2018-2022	6.09%
Adjusted Equity Risk Premium	4.81%
Risk Premium Cost of Equity	**10.90%**

(a) Schedule 9, page 3.
(b) Yields on all utility bonds and Baa subset based on data from IHS Global Insight (Feb. 2017); Energy Information Administration, Annual Energy Outlook 2017 (Jan. 5, 2017); & Moody's Investors Service at www.credittrends.com.
(c) Schedule 9, page 4.

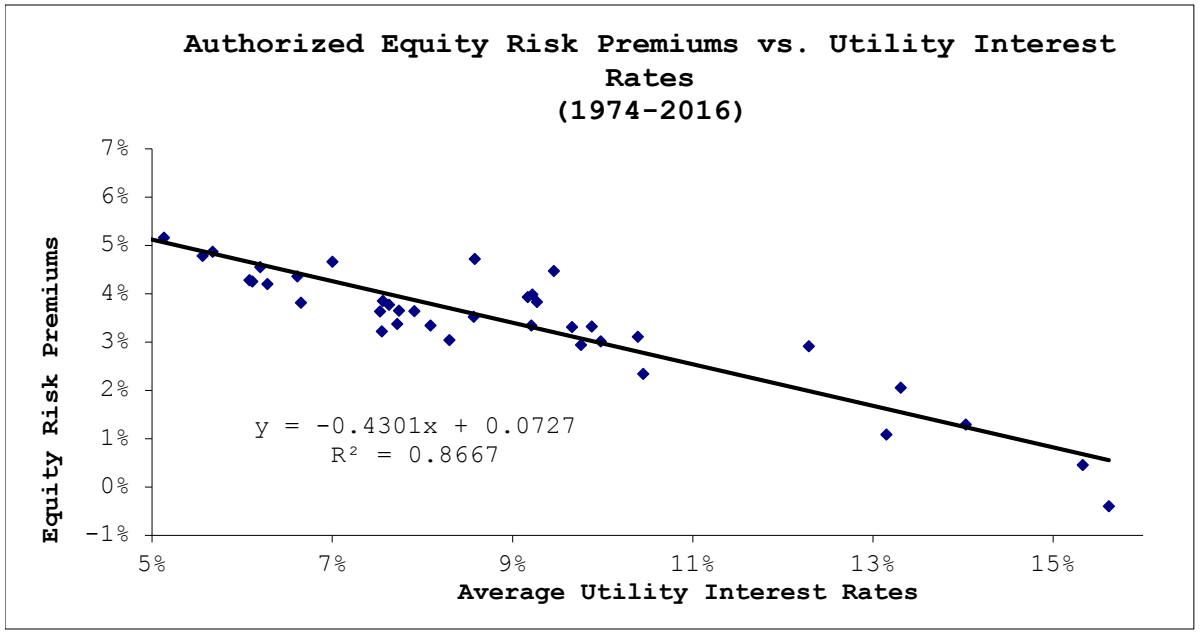
AUTHORIZED RETURNS

Year	(a) Allowed ROE	(b) Average Utility Bond Yield	Risk Premium
1974	13.10%	9.27%	3.83%
1975	13.20%	9.88%	3.32%
1976	13.10%	9.17%	3.93%
1977	13.30%	8.58%	4.72%
1978	13.20%	9.22%	3.98%
1979	13.50%	10.39%	3.11%
1980	14.23%	13.15%	1.08%
1981	15.22%	15.62%	-0.40%
1982	15.78%	15.33%	0.45%
1983	15.36%	13.31%	2.05%
1984	15.32%	14.03%	1.29%
1985	15.20%	12.29%	2.91%
1986	13.93%	9.46%	4.47%
1987	12.99%	9.98%	3.01%
1988	12.79%	10.45%	2.34%
1989	12.97%	9.66%	3.31%
1990	12.70%	9.76%	2.94%
1991	12.55%	9.21%	3.34%
1992	12.09%	8.57%	3.52%
1993	11.41%	7.56%	3.85%
1994	11.34%	8.30%	3.04%
1995	11.55%	7.91%	3.64%
1996	11.39%	7.74%	3.65%
1997	11.40%	7.63%	3.77%
1998	11.66%	7.00%	4.66%
1999	10.77%	7.55%	3.22%
2000	11.43%	8.09%	3.34%
2001	11.09%	7.72%	3.37%
2002	11.16%	7.53%	3.63%
2003	10.97%	6.61%	4.36%
2004	10.75%	6.20%	4.55%
2005	10.54%	5.67%	4.87%
2006	10.36%	6.08%	4.28%
2007	10.36%	6.11%	4.25%
2008	10.46%	6.65%	3.81%
2009	10.48%	6.28%	4.20%
2010	10.34%	5.56%	4.78%
2011	10.29%	5.13%	5.16%
2012	10.17%	4.26%	5.91%
2013	10.02%	4.55%	5.47%
2014	9.92%	4.41%	5.51%
2015	9.85%	4.37%	5.48%
2016	9.77%	4.11%	5.66%
Average	12.05%	8.38%	3.67%

(a) Major Rate Case Decisions, *Regulatory Focus*, Regulatory Research Associates; *UtilityScope Regulatory Service*, Argus.

(b) Moody's Investors Service.

REGRESSION RESULTS



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.9309653
R Square	0.8666965
Adjusted R Square	0.8634452
Standard Error	0.004962
Observations	43

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0.006563352	0.0065634	266.56874	1.51943E-19
Residual	41	0.001009486	2.462E-05		
Total	42	0.007572838			

	Coefficient	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.072712	0.002333891	31.154833	3.636E-30	0.067998588	0.0774254	0.067998588	0.077425364
X Variable 1	-0.430142	0.026345519	-16.32693	1.519E-19	-0.483347378	-0.376936	-0.483347378	-0.376935621

EXPECTED EARNINGS APPROACH

UTILITY GROUP

	Company	(a) Expected Return on Common Equity	(b) Adjustment Factor	(c) Adjusted Return on Common Equity
1	ALLETE	9.0%	1.0218	9.2%
2	Ameren Corp.	10.0%	1.0190	10.2%
3	Avangrid, Inc.	5.0%	1.0060	5.0%
4	Avista Corp.	8.0%	1.0181	8.1%
5	Black Hills Corp.	10.5%	1.0440	11.0%
6	CMS Energy Corp.	13.5%	1.0356	14.0%
7	Dominion Energy	19.0%	1.0025	19.0%
8	DTE Energy Co.	10.5%	1.0254	10.8%
9	Edison International	11.0%	1.0228	11.3%
10	El Paso Electric Co.	9.5%	1.0208	9.7%
11	Entergy Corp.	10.0%	1.0150	10.2%
12	Exelon Corp.	9.0%	1.0280	9.3%
13	Hawaiian Elec.	9.0%	1.0174	9.2%
14	IDACORP, Inc.	9.0%	1.0195	9.2%
15	NorthWestern Corp.	9.5%	1.0177	9.7%
16	Otter Tail Corp.	9.5%	1.0417	9.9%
17	Portland General Elec.	9.5%	1.0176	9.7%
18	Sempra Energy	13.5%	1.0078	13.6%
	Average (d)			**10.3%**
	Midpoint (d,e)			**11.1%**

(a) The Value Line Investment Survey (Mar. 17, Apr. 28, & May 19, 2017).

(b) Adjustment to convert year-end return to an average rate of return from Schedule 6.

(c) (a) x (b).

(d) Excludes highlighted values.

(e) Average of low and high values.

DIVIDEND YIELD

	Company	Industry Group	(a) Price	(b) Dividends	Yield
1	AT&T Inc.	Telecommunications	$ 40.95	$ 1.97	4.8%
2	Church & Dwight	Household Products	$ 50.07	$ 0.76	1.5%
3	Coca-Cola	Beverage	$ 42.71	$ 1.50	3.5%
4	Colgate-Palmolive	Household Products	$ 73.56	$ 1.62	2.2%
5	Gen'l Mills	Food Processing	$ 58.40	$ 1.94	3.3%
6	Hormel Foods	Food Processing	$ 34.58	$ 0.69	2.0%
7	Kellogg	Food Processing	$ 72.63	$ 2.10	2.9%
8	Kimberly-Clark	Household Products	$132.11	$ 3.88	2.9%
9	Lilly (Eli)	Drug Industry	$ 83.82	$ 2.08	2.5%
10	PepsiCo, Inc.	Beverage	$112.54	$ 3.08	2.7%
11	Procter & Gamble	Household Products	$ 89.88	$ 2.76	3.1%
12	Public Storage	REIT	$223.51	$ 8.15	3.6%
13	Smucker (J.M.)	Food Processing	$130.20	$ 3.00	2.3%
14	Sysco Corp.	Wholesale Food	$ 52.26	$ 1.36	2.6%
15	Verizon Communic.	Telecommunications	$ 48.70	$ 2.31	4.7%
16	Wal-Mart Stores	Retail Store	$ 72.46	$ 2.04	2.8%
17	Waste Management	Environmental	$ 72.79	$ 1.70	2.3%
	Average				**2.9%**

(a) Average of closing prices for 30 trading days ended Apr. 28, 2017.
(b) The Value Line Investment Survey, *Summary & Index* (Apr. 28, 2017).

GROWTH RATES

		(a)	(b)	(c)
		Earnings Growth		
	Company	**V Line**	**IBES**	**Zacks**
1	AT&T Inc.	5.50%	7.90%	4.40%
2	Church & Dwight	7.50%	8.24%	9.20%
3	Coca-Cola	4.50%	4.83%	6.20%
4	Colgate-Palmolive	12.00%	8.58%	9.20%
5	Gen'l Mills	5.00%	6.21%	7.40%
6	Hormel Foods	10.50%	9.88%	9.30%
7	Kellogg	6.50%	5.67%	6.00%
8	Kimberly-Clark	12.00%	6.07%	6.90%
9	Lilly (Eli)	11.00%	12.33%	11.90%
10	PepsiCo, Inc.	7.00%	6.41%	7.40%
11	Procter & Gamble	7.50%	5.97%	7.90%
12	Public Storage	NA	11.10%	5.00%
13	Smucker (J.M.)	7.00%	4.91%	6.20%
14	Sysco Corp.	11.50%	12.16%	8.20%
15	Verizon Communic.	3.00%	2.46%	9.00%
16	Wal-Mart Stores	4.00%	5.50%	6.10%
17	Waste Management	7.00%	10.41%	9.50%

(a) The Value Line Investment Survey (Mar. 17, Mar. 24, Apr. 7, Apr. 21, Apr. 28, & May 26, 2017).

(b) www.finance.yahoo.com (retrieved May 25, 2017).

(c) www.zacks.com (retrieved May 25, 2017).

DCF COST OF EQUITY ESTIMATES

		(a)	(a)	(a)
		Earnings Growth		
	Company	**V Line**	**IBES**	**Zacks**
1	AT&T Inc.	10.3%	12.7%	9.2%
2	Church & Dwight	9.0%	9.8%	10.7%
3	Coca-Cola	8.0%	8.3%	9.7%
4	Colgate-Palmolive	14.2%	10.8%	11.4%
5	Gen'l Mills	8.3%	9.5%	10.7%
6	Hormel Foods	12.5%	11.9%	11.3%
7	Kellogg	9.4%	8.6%	8.9%
8	Kimberly-Clark	14.9%	9.0%	9.8%
9	Lilly (Eli)	13.5%	14.8%	14.4%
10	PepsiCo, Inc.	9.7%	9.1%	10.1%
11	Procter & Gamble	10.6%	9.0%	11.0%
12	Public Storage	NA	14.7%	8.6%
13	Smucker (J.M.)	9.3%	7.2%	8.5%
14	Sysco Corp.	14.1%	14.8%	10.8%
15	Verizon Communic.	7.7%	7.2%	13.7%
16	Wal-Mart Stores	6.8%	8.3%	8.9%
17	Waste Management	9.3%	12.7%	11.8%
	Average (b)	**10.7%**	**10.5%**	**10.6%**
	Midpoint (c)	**11.3%**	**11.0%**	**11.4%**

(a) Sum of dividend yield (Schedule 11, p. 1) and respective growth rate (Schedule 11, p. 2).
(b) Excludes highlighted figures.
(c) Average of low and high values.

REGULATORY MECHANISMS

UTILITY GROUP

	Company	AMS	BDR	DSM	ECA	ESM	FCA	FRP	FTY	ICR	NDT	PCR	PGA	RDM	SCR	TAX	TCR	WNA	Other
1	ALLETE			√	√		√		√	√							√		
2	Ameren Corp.		√	√	√		√	√	√	√		√	√	√			√		
3	Avangrid, Inc.			√		√			√	√			√	√			√		
4	Black Hills Corp.		√	√	√		√		√	√			√			√	√	√	Vegetation mgmt. tracker
5	CMS Energy Corp.			√			√		√	√			√				√		
6	Dominion Resources		√	√	√		√	√		√							√		Nuclear decomm.
7	DTE Energy Co.			√			√		√		√		√				√		
8	Edison International			√	√		√	√	√	√	√	√		√		√	√		
9	El Paso Electric Co.			√			√		√	√									
10	Entergy			√	√		√	√		√			√	√	√	√	√		
11	Exelon Corp.	√	√	√	√			√	√	√			√	√			√	√	
12	Hawaiian Elec.			√			√		√	√		√		√					
13	IDACORP, Inc.			√			√		√	√		√		√					
14	NorthWestern Corp.			√			√						√			√			
15	Otter Tail Corp.	√		√			√			√		√			√				
16	Portland General Elec.			√			√		√	√				√	√				
17	Sempra Energy			√	√		√	√	√	√	√	√	√	√		√	√		

GLOSSARY OF TERMS

AMS--Advanced Metering System Recovery Rider
BDR -- Bad Debt Cost Recovery Rider
DSM -- Demand Side Management / Conservation / Energy Efficiency Adj Clause
ECA -- Environmental and/or Emissions Cost Adjustment Clause
ESM -- Earnings Sharing Mechanism
FCA -- Fuel and/or Power Cost Adjustment Clause
FRP--Formula Rate Plan
FTY - Jurisdiction allows for future test year
ICR -- Infrastructure Investment / Renewables Cost Recovery Mechanism
NDT -- Nuclear Decomissioning Tracker
PCR -- Pension Cost Recovery Mechanism
PGA -- Gas Cost Adjustment Clause
RDM -- Revenue Decoupling Mechanism
SCR - Storm Cost Recovery Tracker
TAX--Property / Franchise Tax Recovery Mechanism
TCR -- Transmission Cost Recovery Tracker
WNA -- Weather Normalization Adjustment or other mitigants

Sources:

Company 10-K reports;
Regulatory Research Associates, Regulatory Focus, *"Adjustment Clauses-A State-by-State Overview,"* Aug. 22, 2016;
Edison Electric Institute, *"Alternative Regulation for Emerging Utility Challenges: 2015 Update,"* Nov. 11, 2015.

UTILITY GROUP

Holding Company/ Operating Company	Type of Svc	State	Type of Adjustment Clause (a)										Future Test Year (b)
					Decoupling				New Capital				
			Elec. Fuel/ Gas/ Purch. Pwr	Conserv. Program Expense	Full	Partial	Renew-ables Expense	Environ-mental Compliance	Gener-ation Capacity	Generic Infra-structure	Trans-mission Expense	Other	
ALLETE													
Minnesota Power	Elec.	MN	√	√			√	√			√		C
AMEREN													
Ameren Illinois	Elec.	IL	D	√			√	√			√	Bad debts, taxes, franchise fees	O
Ameren Illinois	Gas	IL	√	√	√			√		√	√	Bad debts, taxes, franchise fees	
Union Electric	Elec.	MO	√	√		√		√		√	√	Taxes, fees	P
Union Electric	Gas	MO	√							√		Taxes, fees	
AVANGRID													
Central Maine Pwr	Elec.	ME	D		√							Storm cost rider	C
New York State E&G	Elec.	NY	D		√		√						C
New York State E&G	Gas	NY	√		√								
Rochester G&E	Elec.	NY	D		√		√						C
Rochester G&E	Gas	NY	√		√								
United Illuminating	Elec.	CT	D	√	√						√		C
BLACK HILLS CORP.													
Black Hills Power	Elec.	SD	√	√		√		√			√		
Cheyenne Light Fuel & Power	Elec.	WY	√	√		√	√						O
Cheyenne Light Fuel & Power	Gas	WY	√	√		√							
Black Hills/Colorado Electric	Elec.	CO	√	√			√		√	√		CWIP in rate base rider	
SourceGas Arkansas	Gas	AR	√	√	√					√		Taxes, franchise fees	
Black Hills Gas Distribution	Gas	CO	√	√									
Black Hills Gas Distribution	Gas	NE	√							√		Franchise fees	
Black Hills Gas Distribution	Gas	WY	√			√							
Black Hills Iowa Gas Utility	Gas	IA	√	√						√		Taxes, franchise fees	
Black Hills/Kansas Gas Utility	Gas	KS	√			√				√		Bad debts, taxes, franchise fees	
Black Hills Nebraska Gas Utility	Gas	NE	√							√		Franchise fees	
CMS ENERGY													
Consumers Energy	Elec.	MI	√	√			√				√		C
Consumers Energy	Gas	MI	√	√									
DOMINION ENERGY													
Virginia Electric & Pwr	Elec	VA	√	√				√	√		√	Taxes, franchise fees	
DTE ENERGY													
DTE Electric	Elec.	MI	√	√			√				√		C
DTE Gas	Gas	MI	√	√									
EDISON INTERNATIONAL													
Southern California Edison	Elec.	CA	√		√								C
Southern California Gas	Gas	CA	√		√								
EL PASO ELECTRIC													
El Paso Electric	Elec.	NM	√	√								Taxes, franchise fees	O
El Paso Electric	Elec.	TX	√	√						√		Recovery of military base discounts	
ENTERGY													
Entergy Arkansas	Elec.	AR	√	√		√			√	√	√	Storm charges rider, taxes, franchise fees	P
Entergy New Orleans	Elec.	LA	√	√		√		√	√		√	Storm reserve rider	O
Entergy New Orleans	Gas	LA	√									Storm reserve rider	O
Entergy Louisiana	Elec.	LA	√	√		√		√	√		√	Securitization-related riders	O
Entergy Louisiana	Gas	LA	√			√				√		Securitization-related riders	O
Entergy Mississippi	Elec.	MS	√	√		√		√			√	Storm cost rider, ad valorem tax rider	O
Entergy Texas	Elec.	TX	√	√						√		Storm cost rider	

UTILITY GROUP

Holding Company/ Operating Company	Type of Svc	State	Type of Adjustment Clause (a)										Future Test Year (b)
					Decoupling				New Capital				
			Elec. Fuel/ Gas/ Purch. Pwr	Conserv. Program Expense	Full	Partial	Renew- ables Expense	Environ- mental Compliance	Gener- ation Capacity	Generic Infra- structure	Trans- mission Expense	Other	
EXELON CORP.													
Delmarva Power and Light	Elec.	DE	D								√		P
Delmarva Power and Light	Gas	DE	√					√					
Delmarva Power and Light	Elec.	MD	D	√	√					√		Taxes and fees	P
Baltimore Gas & Electric Co.	Elec.	MD	D	√	√					√		Taxes and fees	P
Baltimore Gas & Electric Co.	Gas	MD	√	√	√					√		Taxes and fees	
Commonweath Edison Co.	Elec.	IL	D	√			√	√		√	√	Bad debts, taxes, franchise fees	O
PECO Energy Co.	Elec.	PA	D	√						√		Taxes, franchise fees, nuclear decomm, bad debts	O
PECO Energy Co.	Gas	PA	√	√						√		Taxes, franchise fees	
Potomac Electric Power Co.	Elec.	DC	D			√	√			√		Taxes and fees	P
Potomac Electric Power Co.	Elec.	MD	D	√	√					√		Taxes and fees	P
Atlantic City Electric Co.	Elec.	NJ	D	√			√	√				Taxes and fees	P
HAWAIIAN ELECT. INDUSTRIES													
Hawaiian Electric Co.	Elec.	HE	√	√	√		√		√	√		Recovery of integrated resource plan costs	C
Hawaii Electric Light	Elec.	HE	√	√	√		√		√	√		Recovery of integrated resource plan costs	C
Maui Electric	Elec.	HE	√	√	√		√		√	√		Recovery of integrated resource plan costs	C
IDACORP													
Idaho Power	Elec.	ID	√	√	√								P
Idaho Power	Elec.	OR	√				√						C
NORTHWESTERN CORP.													
NorthWestern Corp.	Elec.	MT	√	√								Recovery of out-of-market purch pwr costs	
NorthWestern Corp.	Gas	MT	√	√								Recovery of out-of-market purch pwr costs	
NorthWestern Corp.	Elec.	SD	√	√									
Northwestern Energy	Gas	NE	√									Franchise fees	
OTTER TAIL CORP.													
Otter Tail Power Co.	MN	Elec.	√	√			√	√			√		C
Otter Tail Power Co.	ND	Elec.	√				√	√		√			O
PORTLAND GENERAL ELEC.													
Portland General Electric	Elec.	OR	√			√	√						C
SEMPRA ENERGY													
San Diego G&E	Elec.	CA	√		√								C
San Diego G&E	Gas	CA	√		√								

Notes:
D - Delivery-only utility.
C - Fully-forecasted test years commonly used in the state listed for this operating company.
O - Fully-forecasted test years occasionally used in the state listed for this operating company.
P - Partially-forecasted test years commonly or occasionally used in the state listed for this operating company.
LIR - Limited issue reopeners.

Sources:
(a Regulatory Research Associates, Regulatory Focus, *"Adjustment Clauses-A State-by-State Overview,"* Aug. 22, 2016.
(b Edison Electric Institute, *"Alternative Regulation for Emerging Utility Challenges: 2015 Update,"* Nov. 11, 2015.