Exhibit No.
Issue: Rate of Return
Witness: James H. Vander Weide
Type of Exhibit: Rebuttal Testimony
Sponsoring Party: Empire District Electric
Case No. ER-2010-0130
Date Testimony Prepared: April 2010

Before the Public Service Commission of the State of Missouri

Rebuttal Testimony

of

James H. Vander Weide, Ph.D.

April 2010

TABLE OF CONTENTS
OF
DR. JAMES H. VANDER WEIDE
ON BEHALF OF
THE EMPIRE DISTRICT GAS COMPANY
BEFORE THE
MISSOURI PUBLIC SERVICE COMMISSION

REBUTTAL TESTIMONY
OF
DR. JAMES H. VANDER WEIDE
ON BEHALF OF
THE EMPIRE DISTRICT ELECTRIC COMPANY
BEFORE THE
MISSOURI PUBLIC SERVICE COMMISSION
CASE NO. ER-2010-0130

I. INTRODUCTION AND SUMMARY

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

A. My name is James H. Vander Weide. I am Research Professor of Finance and Economics at Duke University, the Fuqua School of Business. I am also President of Financial Strategy Associates, a firm that provides strategic and financial consulting services to business clients. My business address is 3606 Stoneybrook Drive, Durham, North Carolina 27705.

Q. ARE YOU THE SAME JAMES H. VANDER WEIDE WHO PROVIDED DIRECT TESTIMONY BEFORE THE MISSOURI PUBLIC SERVICE COMMISSION ("THE COMMISSION") IN THIS PROCEEDING?

A. Yes, I am.

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A. I have been asked by The Empire District Electric Company ("Empire" or "the Company") to review the Commission Staff Report Cost of Service in this proceeding and to evaluate Staff's recommended cost of equity for Empire.

Q. IS THERE ANYTHING IN THE STAFF'S REPORT THAT WOULD CAUSE YOU TO CHANGE YOUR RECOMMENDED 11.0 PERCENT COST OF EQUITY FOR EMPIRE?

A. No. After reviewing the Staff Report, I continue to recommend that Empire be allowed to earn a return on equity of 11.0 percent.

II. REBUTTAL OF STAFF'S RECOMMENDED COST OF EQUITY

Q. WHAT IS STAFF'S RECOMMENDED COST OF EQUITY FOR EMPIRE?

A. Staff recommends a cost of equity in the range 8.9 percent to 9.9 percent, with a midpoint of 9.4 percent.

Q. HOW DOES STAFF ESTIMATE EMPIRE'S COST OF EQUITY?

A. Staff estimates Empire's cost of equity by applying both a single-stage annual and a multi-stage annual Discounted Cash Flow ("DCF") model to a proxy group of 12 electric companies. From its single-stage DCF model, Staff obtains an estimated cost of equity in the range 8.92 percent to 9.92 percent, with a midpoint estimate of 9.42 percent. From its multi-stage DCF analysis, Staff obtains an estimated cost of equity in the range 8.55 percent to 9.55 percent, with a midpoint of 9.05 percent. Staff believes that its multi-stage DCF estimate is more "reliable" than its single-stage DCF estimate of its proxy companies' cost of equity (Staff Report at 25). Staff also recognizes that Empire is more risky than its proxy company group. Thus, Staff arrives at its final 9.4 percent recommended estimate of Empire's cost of equity by adding a 35-basis-point risk premium to its 9.05 percent cost of equity estimate derived from its multi-stage DCF model. Although Staff also applies the Capital Asset Pricing Model ("CAPM") to its proxy company group, it concludes that its CAPM results "should not be given much consideration in this case." [Staff Report at 29.]

A. Proxy Companies

Q. WHAT COMPANIES DOES STAFF INCLUDE IN ITS PROXY GROUP OF ELECTRIC COMPANIES?

A. Staff's proxy group includes Alliant Energy, American Electric Power, Cleco Corp., DPL Inc., IDACORP, Northeast Utilities, PG&E Corp., Pinnacle West Capital, Progress Energy, Southern Company, Westar Energy, and Xcel Energy.

Q. HOW DOES STAFF SELECT COMPANIES FOR INCLUSION IN ITS PROXY GROUP?

A. Starting with an initial group of 64 electric utilities, Staff selects 12 companies that, in its opinion, satisfy the following criteria:

1. Classified as an electric utility company by Value Line;
2. Stock publicly traded--no companies eliminated.
3. Classified as a regulated utility by the Edison Electric Institute ("EEI")--this criterion eliminates 31 companies.
4. At least 70 percent of revenues from electric operations as classified by AUS--this criterion eliminates nine companies.
5. Ten-year Value Line historical growth data available--two additional companies eliminated.
6. No reduced dividend since 2006--six additional companies eliminated.
7. Projected growth available from Value Line and Reuters--four additional companies eliminated.
8. At least investment grade credit rating--no additional companies eliminated.
9. Company-owned generating assets--one additional company eliminated. [*See* Staff Report at 20-21]

Q. DOES STAFF'S PROXY GROUP INCLUDE ALL COMPANIES THAT MEET ITS CRITERIA?

A. No. Staff mistakenly eliminates NSTAR and DTE. Staff eliminates NSTAR because it apparently believes that NSTAR reduced its dividend since 2006, and Staff eliminates DTE because it apparently believes that DTE is not classified as a "regulated" utility by the Edison Electric Institute ("EEI"). Contrary to Staff's belief, NSTAR has not reduced its dividend since 2006; and DTE is classified as a "regulated" utility by EEI.

Q. WHAT IS THE PURPOSE OF PROXY SELECTION CRITERIA?

A. The purpose of proxy selection criteria is to identify the largest possible group of comparable risk companies that have sufficient data to reliably apply cost of equity methodologies such as the DCF, CAPM, and risk premium.

Q. IS IT DESIRABLE TO CHOOSE A RELATIVELY LARGE GROUP OF COMPARABLE RISK COMPANIES?

A. Yes.

Q. PLEASE EXPLAIN.

A. It is desirable to choose a relatively large group of comparable risk companies because the estimate of the cost of equity obtained from applying cost of equity methodologies to a single company is uncertain. Cost of equity methodologies such as the DCF, CAPM, and risk premium, require estimates of quantities such as growth rates, betas, and expected risk premiums that necessarily involve a degree of uncertainty. However, the uncertainty in estimating the cost of equity by applying cost of equity methodologies to a single company can be significantly reduced by applying cost of equity models to a relatively large group of comparable risk companies. Intuitively,

any over- and under-estimate of the cost of equity that arises from the application of cost of equity methods to a single company is averaged out by applying the methods to a larger group of comparable risk companies.

In addition, the choice of a relatively small group of proxy companies requires a great deal of judgment. When the analyst applies judgment to select a small group of companies, the analyst may be tempted to choose a set of selection criteria that produce a desired result. The analyst can eliminate the possibility of selection bias by starting with the largest possible group of comparable risk companies and eliminating only those companies with insufficient data to estimate the cost of equity.

Q. WHAT PROXY GROUP OF ELECTRIC UTILITIES DO YOU USE FOR THE PURPOSE OF ESTIMATING EMPIRE'S COST OF EQUITY?

A. I use a group of 28 electric utilities shown in Schedule JVW-1 of my direct testimony.

Q. WHAT CRITERIA DO YOU USE TO SELECT PROXY COMPANIES?

A. As described in my direct testimony, I select all the companies in Value Line's groups of electric companies that: (1) paid dividends during every quarter of the last two years; (2) did not decrease dividends during any quarter of the past two years; (3) had at least three analysts included in the I/B/E/S mean growth forecast; (4) have an investment grade bond rating and a Value Line Safety Rank of 1, 2, or 3; and (5) are not the subject of a merger offer that has not been completed.

Q. HOW DOES THE AVERAGE INVESTMENT RISK OF STAFF'S SMALL GROUP OF 12 ELECTRIC UTILITIES COMPARE TO THE AVERAGE INVESTMENT RISK OF YOUR LARGER PROXY GROUP OF 28 ELECTRIC UTILITIES?

A. Staff's proxy group of 12 electric utilities has approximately the same investment risk as my proxy group of 28 electric utilities. For example, the average S&P bond rating for both my large proxy electric group and Staff's smaller group of electric companies is BBB+, and the average Value Line Safety Rank for both groups is 2.

Q. STAFF'S PROXY GROUP HAS SIMILAR AVERAGE INVESTMENT RISK AS YOUR PROXY GROUP, BUT STAFF USES A MUCH SMALLER PROXY GROUP. WHY IS STAFF'S PROXY GROUP SO MUCH SMALLER THAN YOUR PROXY GROUP?

A. Staff employs two proxy selection criteria that have little or no relationship to investment risk: (1) the requirement that a company must be classified as a regulated electric utility by EEI; and (2) the requirement that, according to AUS, the company must have at least 70 percent of revenues from electric operations. Staff's use of these criteria serve only to reduce its sample size without improving the risk comparability of its proxy group.

Q. HOW DOES EEI CLASSIFY ITS ELECTRIC UTILITY MEMBERS?

A. EEI classifies its electric utility members into three groups based on its estimate of the percentage of a company's total assets that are regulated. The three groups include: (1) "regulated" utilities--regulated assets greater

than 80 percent of total assets; (2) "mostly regulated"--regulated assets between 50 percent and 80 percent of total assets; and (3) "diversified"--regulated assets less than 50 percent of total assets.

Q. DOES STAFF PROVIDE ANY EVIDENCE THAT COMPANIES IN EEI'S "REGULATED" ASSET GROUP HAVE LESS RISK THAN COMPANIES IN EEI'S "MOSTLY REGULATED" AND "DIVERSIFIED" GROUPS?

A. No.

Q. DO YOU HAVE EVIDENCE THAT EEI'S "REGULATED" ASSET GROUP OF ELECTRIC UTILITIES HAS APPROXIMATELY THE SAME INVESTMENT RISK AS THE COMPANIES IN ITS OTHER GROUPS?

A. Yes. My proxy companies include 18 companies classified by EEI as "regulated," nine companies classified as "mostly regulated," and one company classified as "diversified." Yet the average risk ratings and DCF results for the companies classified as "regulated" utilities are approximately the same as those for the companies classified as "mostly regulated" and "diversified" utilities. For example, the average Value Line Safety Rank for the companies classified as "regulated" is approximately 2, and the average S&P bond rating is approximately BBB+, the same average Safety Rank and S&P bond rating as those in the other classifications. Similarly, the average DCF result for those companies classified as "regulated" is 12.0 percent, and the average DCF result for those companies in the other classifications is 11.9 percent (see Rebuttal Schedule JVW-1).

Q. DOES STAFF PROVIDE ANY EVIDENCE THAT THE PERCENT OF REVENUES FROM ELECTRIC OPERATIONS AS REPORTED IN AUS IS AN INDICATOR OF A COMPANY'S INVESTMENT RISK?

A. No.

Q. DO YOU HAVE EVIDENCE THAT THE PERCENTAGE OF REVENUES FROM ELECTRIC OPERATIONS, AS REPORTED BY AUS, IS NOT RELATED TO A COMPANY'S INVESTMENT RISK?

A. Yes. According to Staff's Schedule 10, Staff eliminates seven companies as a result of their failure to meet Staff's criterion that the percent of revenues from electric operations must be greater than 70 percent. The average Value Line Safety Rank for these seven companies is 2 and the average Standard & Poor's bond rating for these companies is BBB+, the same average Safety and Rank and bond rating as Staff's selected companies (see Rebuttal Schedule JVW-2).

Q. ARE THERE ANY OTHER PROBLEMS WITH STAFF'S SELECTION CRITERIA?

A. Yes. First, Staff's criteria that a proxy company must have a certain percentage of regulated assets or revenues relate to an individual company's business characteristics rather than to an overall assessment of the company's equity risk. A problem with using an individual company's business characteristics such as percent regulated electric assets or revenues is that a company may be eliminated based on a company-specific

criterion, even though the company's overall equity risk may be comparable to those included in the proxy group.

Second, Staff provides no justification for the cut-off values it uses for percent regulated assets and revenues. Staff's criterion requiring a proxy company to have at least 70 percent regulated revenues is arbitrary. Similarly, Staff provides no justification for limiting its proxy group to EEI's "regulated" classification, rather than including "regulated" and "mostly regulated."

Third, Staff fails to recognize that it is quite difficult to quantify the percentage of a company's business that is classified as "regulated." Ideally, one would measure percent regulated versus percent non-regulated based on the market values of a company's regulated and non-regulated businesses. However, since the individual business segments are not market traded, there is no market value for these business segments. Although an analyst might attempt to quantify "percent regulated" and "percent unregulated" using accounting variables such as assets or revenues as a substitute for market values, these accounting categories are imperfect because the accounting for regulated assets and revenues is likely not comparable from one company to another, and accounting values are imperfect indicators of market values.

Q. WHAT CONCLUSION DO YOU DRAW FROM YOUR ANALYSIS OF STAFF'S PROXY GROUP?

A. I conclude that the Commission should rely on my proxy group to estimate Empire's cost of equity. As I have demonstrated, my proxy group has similar

investment risk, but includes a significantly larger sample of companies than Staff's proxy group. Since one can obtain more accurate estimates of the cost of equity by using a larger sample of comparable risk companies, the Commission should rely on my proxy companies to estimate Empire's cost of equity.

B. Staff's DCF Models

Q. WHAT DCF MODELS DOES STAFF USE TO ESTIMATE EMPIRE'S COST OF EQUITY?

A. Staff estimates Empire's cost of equity using both a single-stage annual DCF model and a multi-stage annual DCF model.

1. Staff's Single-Stage Annual DCF Model

Q. PLEASE DESCRIBE STAFF'S SINGLE-STAGE ANNUAL DCF MODEL.

A. Staff's single-stage annual DCF model is of the form, $k = D_1/P_0 + g$, where k is the cost of equity, D_1 is the expected first period dividend, P_0 is the current stock price, and g is the average expected future growth in the company's earnings and dividends.

Q. WHAT ARE THE BASIC ASSUMPTIONS OF STAFF'S SINGLE-STAGE ANNUAL DCF MODEL?

A. Staff's single-stage annual DCF model is based on the assumptions that: (1) a company's stock price is equal to the present value of the future dividends investors expect to receive from their investment in the company; (2) dividends are paid annually; (3) dividends, earnings, and book value are

expected to grow at the same constant rate forever; and (4) the first dividend is received one year from the date of the analysis.

Q. YOU NOTE THAT ONE ASSUMPTION OF STAFF'S SINGLE-STAGE ANNUAL DCF MODEL IS THAT DIVIDENDS ARE PAID ANNUALLY. DO ANY OF STAFF'S PROXY COMPANIES, IN FACT, PAY DIVIDENDS ANNUALLY?

A. No. All of Staff's proxy companies pay dividends quarterly.

Q. CAN STAFF'S SINGLE-STAGE ANNUAL DCF MODEL BE MATHEMATICALLY DERIVED FROM THE ASSUMPTION THAT DIVIDENDS ARE PAID QUARTERLY?

A. No. Staff's single-stage annual DCF model can only be derived from the assumption that dividends are paid annually. When dividends are paid quarterly, the quarterly DCF model is the only model that can be mathematically derived from DCF assumptions. Since Staff's proxy companies pay dividends quarterly, Staff should have used a quarterly DCF model to estimate Empire's cost of equity.

Q. YOU ALSO MENTION THAT STAFF'S DCF MODEL REQUIRES AN ESTIMATE OF THE EXPECTED FIRST PERIOD DIVIDEND FOR EACH COMPANY. HOW DOES STAFF ESTIMATE THE EXPECTED FIRST PERIOD DIVIDEND FOR ITS SINGLE-STAGE ANNUAL DCF MODEL?

A. Staff uses Value Line's estimate of each company's total 2010 dividend as its estimate of the expected first period dividend in its single-stage annual DCF model.

Q. DO YOU AGREE WITH STAFF'S USE OF VALUE LINE'S ESTIMATE OF EACH COMPANY'S TOTAL 2010 DIVIDEND AS THE ESTIMATE OF THE EXPECTED FIRST PERIOD DIVIDEND IN ITS APPLICATION OF THE DCF MODEL?

A. No. Staff's single-stage annual DCF model is based on the assumptions that dividends are paid annually and grow at the same constant rate forever. Under these assumptions, the cost of equity is given by the equation, $k = D_0 (1 + g) / P_0 + g$, where D_0 is the current annualized dividend, P_0 is the stock price, and g is the expected constant annual growth rate. Thus, the correct first period dividend in the single-stage annual DCF model is the current annualized dividend multiplied by the factor, (*1 + growth rate*).

Q. HOW DOES STAFF ESTIMATE THE GROWTH COMPONENT OF ITS DCF MODEL?

A. Staff reviews historical five- and ten-year growth rates in dividends per share, earnings per share, and book value per share, as reported in Value Line, along with forecasts of earnings per share obtained from Reuters and Value Line. Staff's final choice of growth rate is based on its judgment about the growth rate that, in its opinion, investors could expect for the proxy companies. In this case, Staff estimates that investors would expect growth in the range 4 percent to 5 percent for its proxy electric companies.

Q. DO YOU AGREE WITH STAFF'S USE OF HISTORICAL GROWTH RATES TO ESTIMATE INVESTORS' EXPECTATIONS WHEN ANALYSTS'

GROWTH EXPECTATIONS FOR STAFF'S PROXY COMPANIES ARE READILY AVAILABLE?

A. No. Historical growth rates are inherently inferior to analysts' forecasts because analysts' forecasts already incorporate all relevant information regarding historical growth rates and also incorporate the analysts' knowledge about current conditions and expectations regarding the future. My studies indicate that the correlation between analysts' growth forecasts and stock prices is significantly higher than the correlation between historical growth rates and stock prices.

Q. DO YOU AGREE WITH STAFF'S USE OF ANALYSTS' EARNINGS PER SHARE GROWTH FORECASTS TO ESTIMATE THE GROWTH COMPONENT OF ITS DCF MODEL?

A. Yes. Analysts' growth forecasts are superior to historical growth rates because they incorporate all relevant information regarding current and future economic conditions. In addition, as discussed in my direct testimony, my studies indicate that analysts' growth forecasts are more highly correlated with stock prices than historical growth rates. This result is consistent with the hypothesis that investors use analysts' growth forecasts in making stock buy and sell decisions. Since the DCF model requires the growth estimates of investors, and investors use analysts' growth forecasts in making stock buy and sell decisions, analysts' growth forecasts are the best estimate of future growth in the DCF model.

Q. WHAT ANALYSTS' GROWTH FORECASTS DOES STAFF USE?

A. Staff uses growth forecasts from Reuters and Value Line.

Q. HOW DO THE ANALYSTS' GROWTH FORECASTS REPORTED BY REUTERS DIFFER CONCEPTUALLY FROM THE GROWTH FORECASTS OF VALUE LINE?

A. The analysts' growth forecasts differ conceptually from the growth forecasts of Value Line in that the analysts' growth forecasts represent the average growth forecast of all analysts or most all of the analysts that follow a particular stock, whereas the Value Line growth forecasts represent only the views of a single analyst. In addition, the analysts' long-term growth forecasts relate to a period from the beginning of the current period to a period five years later, whereas the Value Line forecast represents the growth forecast for a five-year period that, in this instance, began in 2006 – 2008 and ends in 2013 – 2015. Since the period 2006 – 2008 is two years past, the Value Line forecast is less appropriate for use in the DCF model.

Q. HOW DO THE ANALYSTS' GROWTH FORECASTS REPORTED BY REUTERS DIFFER NUMERICALLY FROM THE VALUE LINE FORECASTS FOR STAFF'S PROXY COMPANIES?

A. As shown on Staff's Schedule 15, the average Reuters growth forecast for Staff's proxy companies is 6.13 percent, while the average Value Line forecast us 5.71 percent.

Q. WHAT GROWTH FORECAST DOES STAFF ACTUALLY USE IN ITS SINGLE-STAGE ANNUAL DCF MODEL ESTIMATE OF EMPIRE'S COST OF EQUITY?

A. Staff uses a growth forecast in the range four percent to five percent.

Q. DOES STAFF EXPLAIN HOW IT ARRIVES AT ITS GROWTH FORECAST RANGE OF FOUR PERCENT TO FIVE PERCENT?

A. No. Staff's growth forecast seems to be based entirely on its judgment. However, it is clear that Staff's growth forecast is significantly less than the average analysts' growth forecast for Staff's proxy companies.

Q. DOES THE DCF MODEL REQUIRE THE GROWTH FORECASTS OF INVESTORS OR THE GROWTH FORECASTS OF STAFF?

A. The DCF model requires the growth forecasts of investors because investors' growth forecasts are impounded in stock prices.

Q. DO YOU HAVE EVIDENCE THAT INVESTORS USE THE ANALYSTS' GROWTH FORECASTS RATHER THAN HISTORICAL GROWTH RATES?

A. Yes. I report such evidence in my direct testimony at pages 25 - 26.

Q. WHAT DCF RESULT WOULD STAFF HAVE OBTAINED IF IT HAD USED THE ANALYSTS' GROWTH FORECASTS AS REPORTED BY REUTERS TO ESTIMATE THE GROWTH COMPONENT OF ITS DCF MODEL?

A. Staff would have obtained a DCF estimate of the cost of equity equal to 11.1 percent (see Rebuttal Schedule JVW-3).

Q. STAFF CLAIMS THAT ANALYSTS' GROWTH FORECASTS ARE OVERLY OPTIMISTIC. DOES STAFF PROVIDE ANY EVIDENCE TO SUPPORT ITS CLAIM?

A. No.

Q. DO YOU HAVE EVIDENCE THAT ANALYSTS' GROWTH FORECASTS, IN FACT, ARE NOT OVERLY OPTIMISTIC?

A. Yes. Recent research demonstrates that the conclusion of analyst optimism is incorrect. Although some earlier research had found evidence of analyst optimism in some time periods, recent research has demonstrated that earlier researchers failed to recognize substantial statistical difficulties in their studies that caused these researchers to unwittingly accept the hypothesis of optimism when no optimism was present. For example, recent studies recognize that the results of earlier studies are heavily influenced by the presence of large unexpected accounting write-offs and special accounting charges at a small number of sample companies. Unexpected accounting write-offs and special charges have a potentially dramatic impact on conclusions concerning analysts' bias because analysts' forecasts intentionally exclude the impact of accounting write-offs and special charges, whereas actual earnings include these items. Thus, a comparison of analysts' forecasts premised on normalized earnings (that is, earnings that exclude the impact of accounting write-offs and special charges) to reported earnings that include the negative effect of accounting write-offs and special charges will bias the results in favor of concluding that analysts are optimistic. More recent studies demonstrate that once the distorting effect of unexpected accounting write-offs and special charges are removed from the analysis, there is no evidence that analysts' EPS growth forecasts are optimistic.

2. Staff's Multi-Stage DCF Model

Q. WHAT ARE THE BASIC ASSUMPTIONS OF STAFF'S MULTI-STAGE DCF MODEL?

A. Staff's multi-stage DCF model is based on the assumptions that investors believe all electric utilities will grow at the average of the Reuters' and Value Line EPS growth rate for five years, grow at a rate that steadily declines in years six through ten to Staff's 3.35 percent estimate of perpetual growth, and then grow at a rate of 3.35 percent in perpetuity.

Q. DOES STAFF PROVIDE ANY EVIDENCE TO SUPPORT ITS MULTI-STAGE GROWTH ASSUMPTIONS?

A. No. Staff's multi-stage growth assumptions seem to reflect its own view of investors' growth expectations rather than being based on any studies or analysis.

Q. WHY DOES STAFF RECOMMEND THE USE OF A MULTI-STAGE DCF MODEL RATHER THAN THE USE OF ITS SINGLE-STAGE DCF MODEL TO ESTIMATE EMPIRE'S COST OF EQUITY IN THIS PROCEEDING?

A. Staff recommends using a multi-stage DCF model because Staff uses a four to five percent growth estimate in its single-stage model that is partially based on analysts' growth forecasts, and Staff believes that a four to five percent growth rate is not sustainable in the long run:

> ...based on Staff's understanding of the continued large investment cycle of the electric utility industry, analysts' higher projected growth rates reflect this near-term expected rate base growth and will not be sustainable for the long-term. Staff believes this justifies Staff's continued reliance on the multi-stage DCF methodology for estimating an electric utility company's cost of common equity. [Staff Report at 24.]

Q. DO YOU AGREE WITH STAFF'S OPINION THAT ANALYSTS' PROJECTED GROWTH RATES FOR ELECTRIC UTILITIES ARE NOT SUSTAINABLE IN THE LONG RUN?

A. No. First, I disagree with Staff's attempt to impose its view of "sustainability" on investors. The cost of equity is determined by investors in the marketplace, not by Staff. If investors use analysts' growth forecasts in making stock buy and sell decisions—and my studies indicate that they do—the analysts' growth forecasts should be used to estimate the growth component of the DCF model, whether or not Staff believes these growth forecasts are "sustainable."

Second, Staff fails to recognize that investor growth forecasts affect stock prices. If Staff believes that investors' growth forecasts are irrational, Staff should adjust the stock prices for the companies in its DCF analyses as well as the growth forecasts. Making such an adjustment to the stock price would significantly increase the results of Staff's multi-stage DCF analysis.

Q. HAVE YOU DONE ANY STUDIES ON THE GROWTH RATES THAT INVESTORS USE TO VALUE STOCKS IN THE MARKETPLACE?

A. Yes. As discussed in my direct testimony, my studies indicate that investors use analysts' forecasted growth rates to value stocks in the marketplace.

Q. YOU NOTE THAT STAFF ASSUMES THAT ELECTRIC UTILITIES WILL GROW AT A CONSTANT RATE OF 3.35 PERCENT IN THE LONG RUN. HOW DOES STAFF ARRIVE AT ITS 3.35 PERCENT ESTIMATE OF LONG-TERM GROWTH?

A. Staff adds a 2.35 percent estimate of inflation to a one percent estimate of the growth in long-term electricity consumption to arrive at its 3.35 percent estimate of long-term growth.

Q. STAFF'S LONG-TERM GROWTH ESTIMATE IS BASED ON THE ASSUMPTION THAT ELECTRICITY PRICES WILL GROW IN LINE WITH THE GENERAL LEVEL OF PRICES IN THE LONG RUN. DO YOU AGREE WITH THIS ASSUMPTION?

A. No. Electricity rates depend on fuel prices, other operating expenses, and rate base. In view of the rapid increase in fuel prices in recent years, and the need for utilities to make significant capital expenditures to replace aging plant, satisfy stricter environmental regulations, and provide sufficient capacity to meet demand forecasts, it is likely that increases in electricity rates will exceed increases in general price levels over the long term.

C. CAPM

Q. WHAT IS THE CAPM?

A. The CAPM is an equilibrium model in which the expected rate of return on an investment in a company is equal to a risk-free rate of interest, plus an expected risk premium, where the expected risk premium is the product of a company-specific risk factor, or beta, and the expected risk premium on the market portfolio of all securities.

Q. HOW DOES STAFF USE THE CAPM TO ESTIMATE EMPIRE'S COST OF EQUITY?

A. The CAPM requires estimates of the risk-free rate, the company-specific risk factor, or beta, and the risk premium on the market portfolio. As its estimate of the risk-free rate, Staff uses the average yield to maturity on 30-year Treasury bonds for the most recent three months, November 2009 through January 2010 (4.47 percent). As its estimate of the company-specific risk factor or beta, Staff uses Value Line's average estimated beta for its proxy companies (0.66). As its estimate of the risk premium on the market portfolio, Staff uses: (1) the arithmetic mean risk premium on the S&P 500 compared to the return on long-term Treasury bonds for the period 1926 – 2008 (allegedly 5.6 percent); and (2) the geometric mean risk premium on the S&P 500 compared to the return on long-term Treasury bonds for the period 1926 – 2008 (allegedly 3.9 percent). Staff obtains its risk premium data from the *Ibbotson® SBBI® 2009 Yearbook Stocks, Bonds, Bills, and Inflation* ("SBBI").

Q. WHAT IS SBBI'S CURRENT ESTIMATE OF THE REQUIRED MARKET RISK PREMIUM ON STOCK INVESTMENTS COMPARED TO INVESTMENTS IN 20-YEAR U.S. TREASURY BONDS?

A. SBBI's current estimate of the required market risk premium is 6.7 percent.

Q. HOW DOES SBBI ARRIVE AT ITS 6.7 PERCENT ESTIMATE OF THE REQUIRED MARKET RISK PREMIUM?

A. SBBI arrives at its estimate of the required market risk premium by calculating the arithmetic mean return on the S&P 500 and the arithmetic mean income return on 20-year U.S. Treasury bonds over the period 1926 through 2009.

SBBI then uses the difference between these two arithmetic mean returns as its estimate of the forward-looking market risk premium.

Q. WHY DOES SBBI RECOMMEND USING THE ARITHMETIC MEAN RETURN ON THE S&P 500 RATHER THAN THE GEOMETRIC MEAN RETURN ON THIS INDEX IN ORDER TO ESTIMATE THE MARKET RISK PREMIUM?

A. SBBI recommends using the arithmetic mean return rather than the geometric mean return in order to estimate the cost of equity because a cost of equity based on the arithmetic mean return is the only cost of equity that will discount the investors' expected future wealth to the current price of the stock (see *Ibbotson® SBBI® Valuation 2009 Yearbook* at 59 – 60 and Schedule 5 in my direct testimony). In addition, the arithmetic mean is most appropriate for use in the CAPM because the CAPM is based on the assumption that the return is obtained from an additive process, and the arithmetic mean return is additive, whereas the geometric mean return is not. Because the arithmetic mean provides the best estimate of the required market risk premium, the Commission should ignore Staff's CAPM result based on the geometric mean risk premium.

Q. WHAT IS THE DIFFERENCE BETWEEN THE INCOME RETURN ON U.S. TREASURY SECURITIES AND THE TOTAL RETURN ON THESE SECURITIES?

A. The income return considers only the income an investor receives from owning a debt instrument such as U.S. Treasury securities, whereas the total

return considers both the income and the capital gain or loss on the investment.

Q. WHY DOES SBBI RECOMMEND USING THE INCOME RETURN ON U.S. TREASURY SECURITIES RATHER THAN THE TOTAL RETURN IN ITS RISK PREMIUM ESTIMATE?

A. SBBI recommends using the income return rather than the total return on Treasury securities to estimate the risk-free rate component of the equity risk premium because the income return is the only return that is risk free. Since the total return includes capital gains and losses, and capital gains and losses are highly uncertain, the total return is definitely not risk free.

Q. DO YOU HAVE OTHER CRITICISMS OF STAFF'S USE OF THE CAPM TO ESTIMATE EMPIRE'S COST OF EQUITY?

A. Yes. Staff fails to recognize that the CAPM underestimates the cost of equity for companies with betas less than 1.0 and that the CAPM must be adjusted to include an additional risk premium for small capitalization companies such as Empire District.

Q. WHAT EVIDENCE DO YOU HAVE THAT THE CAPM TENDS TO UNDERESTIMATE THE COST OF EQUITY FOR COMPANIES WITH BETAS LESS THAN 1.0?

A. As described in my direct testimony at page 43, the original evidence that the unadjusted CAPM tends to underestimate the cost of equity for companies whose equity beta is less than 1.0 and to overestimate the cost of equity for companies whose equity beta is greater than 1.0 was presented in a paper by

Black, Jensen, and Scholes, "The Capital Asset Pricing Model: Some Empirical Tests." Numerous subsequent papers have validated the Black, Jensen, and Scholes findings, including those by Litzenberger and Ramaswamy, Banz, Fama and French, and Fama and MacBeth.[1]

Q. DO YOU HAVE ANY EVIDENCE THAT INVESTORS EXPECT TO EARN A HIGHER RATE OF RETURN ON SMALL CAPITALIZATION COMPANIES SUCH AS EMPIRE THAN WOULD BE PREDICTED FROM THE BASIC CAPM EQUATION USED BY STAFF?

A. Yes. SBBI provides evidence that investors require a higher rate of return for investments in small capitalization companies than is indicated by Staff's CAPM equation. SBBI's most recent estimates of the risk premium required to be added to the basic CAPM cost of equity are shown below in Table 1.

---

1 Fischer Black, Michael C. Jensen, and Myron Scholes, "The Capital Asset Pricing Model: Some Empirical Tests," in Studies in the Theory of Capital Markets, M. Jensen, ed. New York: Praeger, 1972; Eugene Fama and James MacBeth, "Risk, Return, and Equilibrium: Empirical Tests," Journal of Political Economy 81 (1973), pp. 607-36; Robert Litzenberger and Krishna Ramaswamy, "The Effect of Personal Taxes and Dividends on Capital Asset Prices: Theory and Empirical Evidence." Journal of Financial Economics 7 (1979), pp. 163-95.; Rolf Banz, "The Relationship between Return and Market Value of Common Stocks," Journal of Financial Economics (March 1981), pp. 3-18; and Eugene Fama and Kenneth French, "The Cross-Section of Expected Returns," Journal of Finance (June 1992), pp. 427-465.

TABLE 1
IBBOTSON ESTIMATES OF CAPM
SMALL COMPANY SIZE PREMIA[2]

DECILE	SMALLEST COMPANY	LARGEST COMPANY	SIZE PREMIUM RETURN IN EXCESS OF CAPM
Mid-Cap (3-5)	1,602.429	5,936.147	1.08%
Low-Cap (6-8)	432.175	1,600.169	1.85%
Micro-Cap (9-10)	1.007	431.256	3.99%

Q. WHAT CONCLUSION DO YOU DRAW FROM THE EVIDENCE THAT THE CAPM TENDS TO UNDERESTIMATE THE COST OF EQUITY FOR SMALL CAPITALIZATION COMPANIES SUCH AS EMPIRE AND COMPANIES SUCH AS ELECTRIC UTILITIES WITH BETAS LESS THAN 1.0?

A. I agree with Staff's recommendation that the Commission give little or no weight to the results of its CAPM analysis in this proceeding.

III. STAFF'S TESTS OF REASONABLENESS

Q. HOW DOES STAFF ARRIVE AT ITS RECOMMENDED 9.4 PERCENT COST OF EQUITY FOR EMPIRE?

A. As noted above, Staff arrives at its recommended 9.4 cost of equity by adding a 35-basis-point Empire-specific risk premium to its 9.05 percent multi-stage DCF estimate of the cost of equity for its proxy companies.

Q. WHY DOES STAFF RECOMMEND A 35-BASIS-POINT RISK PREMIUM FOR EMPIRE?

---

2 *See* Ibbotson® 2010 Risk Premia Over Time Report.

A. Staff recommends a 35-basis-point risk premium because Staff recognizes that Empire is significantly more risky than the average company in Staff's proxy group of electric utilities.

Q. DOES STAFF COMPARE ITS RECOMMENDED COST OF EQUITY FOR EMPIRE TO RECENT ALLOWED RATES OF RETURN ON EQUITY FOR ELECTRIC UTILITIES ACROSS THE COUNTRY?

A. Yes. Staff reports that the average authorized return on equity for electric utilities for the year 2009 is 10.5 percent.

Q. DOES THIS 10.5 PERCENT AVERAGE AUTHORIZED RETURN ON EQUITY FOR ELECTRIC UTILITIES INCLUDE AUTHORIZED RETURNS ON EQUITY FOR DELIVERY-ONLY ELECTRIC UTILITIES?

A. Yes, it does.

Q. WHAT IS THE AVERAGE AUTHORIZED RETURN ON EQUITY IN 2009 FOR INTEGRATED ELECTRIC UTILITIES SUCH AS EMPIRE?

A. The average authorized return on equity for integrated electric utilities such as Empire is 10.65 percent (see Rebuttal Schedule JVW-4).

Q. DOES THIS AVERAGE RETURN ON EQUITY PERTAIN TO ELECTRIC UTILITIES OF AVERAGE INVESTMENT RISK?

A. Yes, by definition, the 10.65 percent authorized return on equity applies to all integrated electric utilities who received allowed rates of return in 2009. Since there were 29 integrated electric utilities whose returns were authorized in 2009, it is reasonable to assume that the average allowed return represents a return for an average risk electric utility.

Q. IF ONE ACCEPTS THAT EMPIRE REQUIRES AT LEAST A 35-BASIS-POINT RISK PREMIUM TO REFLECT ITS HIGHER THAN AVERAGE INVESTMENT RISK, WHAT DOES THE 10.65 PERCENT AVERAGE ALLOWED RETURN FOR ELECTRIC UTILITIES IN 2009 IMPLY ABOUT THE REASONABLENESS OF STAFF'S RECOMMENDED 9.4 PERCENT RETURN ON EQUITY FOR EMPIRE IN THIS PROCEEDING?

A. The average allowed return on equity evidence implies that Staff's 9.4 percent recommended rate of return for Empire is unreasonably low. Adding Staff's 35-basis-point risk premium to the 10.65 percent average authorized rate of return for integrated electric utilities suggests that regulators in other states would likely assess Empire's cost of equity to be at least 11.0 percent.

Q. WHAT IS YOUR RECOMMENDED COST OF EQUITY FOR EMPIRE IN THIS PROCEEDING?

A. I continue to recommend that Empire be allowed to earn a return on equity of at least 11.0 percent.

Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?

A. Yes, it does.

REBUTTAL SCHEDULE JVW-1
COMPARISON OF AVERAGE VALUE LINE SAFETY RANK, STANDARD & POOR'S BOND RATING, AND DISCOUNTED CASH FLOW RESULT FOR VANDER WEIDE PROXY COMPANIES GROUPED ACCORDING TO EDISON ELECTRIC INSTITUTE CLASSIFICATIONS

Line No.	Vander Weide Group	Cost of Equity	EEI Category	Safety Rank	S&P BOND RATING	S&P BOND RATING (Numerical)
1	Amer. Elec. Power	9.3%	R	3	BBB	7
2	ALLETE	12.8%	R	2	BBB+	6
3	CMS Energy Corp.	11.1%	R	3	BBB-	8
4	Dominion Resources	12.0%	MR	2	A-	5
5	DPL Inc.	15.0%	R	3	A-	5
6	Duke Energy	10.4%	MR	2	A-	5
7	Consol. Edison	9.2%	R	1	A-	5
8	Entergy Corp.	13.6%	MR	2	BBB	7
9	FirstEnergy Corp.	12.9%	MR	2	BBB	7
10	FPL Group	13.3%	MR	1	A-	5
11	Hawaiian Elec.	12.6%	D	3	BBB	7
12	Alliant Energy	11.1%	R	2	BBB+	6
13	NSTAR	11.5%	R	1	A+	3
14	Northeast Utilities	13.1%	R	3	BBB	7
15	PG&E Corp.	11.9%	R	2	BBB+	6
16	Public Serv. Enterprise	10.1%	MR	3	BBB	7
17	Progress Energy	12.8%	R	2	BBB+	6
18	Pinnacle West Capital	13.7%	R	3	BBB-	8
19	Pepco Holdings	12.6%	MR	3	BBB	7
20	Portland General	12.9%	R	2	BBB+	6
21	SCANA Corp.	11.8%	MR	2	BBB+	6
22	Southern Co.	11.1%	R	1	A	4
23	Sempra Energy	10.0%	MR	2	BBB+	6
24	UIL Holdings	12.8%	R	2	Baa3	8
25	Vectren Corp.	12.8%	R	2	A-	5
26	Wisconsin Energy	12.5%	R	2	BBB+	6
27	Westar Energy	10.2%	R	2	BBB-	8
28	Xcel Energy Inc.	12.4%	R	2	BBB+	6
29	**Average**	**12.0%**		**2.1**		**6.1**

Line No.	Only "R" Companies	Cost of Equity	EEI Category	Safety Rank	S&P BOND RATING	S&P BOND RATING (Numerical)
1	Amer. Elec. Power	9.3%	R	3	BBB	7
2	ALLETE	12.8%	R	2	BBB+	6
3	CMS Energy Corp.	11.1%	R	3	BBB-	8
4	DPL Inc.	15.0%	R	3	A-	5
5	Consol. Edison	9.2%	R	1	A-	5
6	Alliant Energy	11.1%	R	2	BBB+	6
7	NSTAR	11.5%	R	1	A+	3
8	Northeast Utilities	13.1%	R	3	BBB	7
9	PG&E Corp.	11.9%	R	2	BBB+	6
10	Progress Energy	12.8%	R	2	BBB+	6
11	Pinnacle West Capital	13.7%	R	3	BBB-	8
12	Portland General	12.9%	R	2	BBB+	6
13	Southern Co.	11.1%	R	1	A	4
14	UIL Holdings	12.8%	R	2	Baa3	8
15	Vectren Corp.	12.8%	R	2	A-	5
16	Wisconsin Energy	12.5%	R	2	BBB+	6
17	Westar Energy	10.2%	R	2	BBB-	8
18	Xcel Energy Inc.	12.4%	R	2	BBB+	6
19	**Average "R" Companies**	**12.0%**		**2.1**		**6.1**

Line No.	Only "MR" and "D" Companies	Cost of Equity	EEI Category	Safety Rank	S&P BOND RATING	S&P BOND RATING (Numerical)
1	Hawaiian Elec.	12.6%	D	3	BBB	7
2	Dominion Resources	12.0%	MR	2	A-	5
3	Duke Energy	10.4%	MR	2	A-	5
4	Entergy Corp.	13.6%	MR	2	BBB	7
5	FirstEnergy Corp.	12.9%	MR	2	BBB	7
6	FPL Group	13.3%	MR	1	A-	5
7	Public Serv. Enterprise	10.1%	MR	3	BBB	7
8	Pepco Holdings	12.6%	MR	3	BBB	7
9	SCANA Corp.	11.8%	MR	2	BBB+	6
10	Sempra Energy	10.0%	MR	2	BBB+	6
11	**Average "MR" and "D" Cos.**	**11.9%**		**2.2**		**6.2**

Cost of equity results from Vander Weide direct testimony, Schedule 1. EEI designation from EEI website: (1) "R" or "regulated" utilities--regulated assets greater than 80 percent of total assets; (2) "MR" or "mostly regulated"--regulated assets between 50 percent and 80 percent of total assets; and (3) "D" or "diversified"--regulated assets less than 50 percent of total assets. Value Line Safety Rank from The Value Line Investment Analyzer. Standard & Poor's bond ratings from Standard & Poor's website.

REBUTTAL SCHEDULE JVW-2
COMPARISON OF AVERAGE VALUE LINE SAFETY RANK AND
STANDARD & POOR'S BOND RATING FOR
COMPANIES STAFF ELIMINATED
DUE TO <70 PERCENT ELECTRIC REVENUE CRITERION
TO STAFF SELECTED PROXY COMPANIES

ELIMINATED FROM STAFF GROUP	EEI Category	Safety Rank	S&P Bond Rating	S&P Bond Rating (Numerical)
Avista Corp.	R	3	BBB-	8
CH Energy Group	R	1	A	4
CMS Energy Corp.	R	3	BBB-	8
Consol. Edison	R	1	A-	5
TECO Energy	R	3	BBB	7
Vectren Corp.	R	2	A-	5
Wisconsin Energy	R	2	BBB+	6
Average		2.1		6.1

STAFF PROXY ELECTRIC COMPANIES	EEI Category	Safety Rank	S&P Bond Rating	S&P Bond Rating (Numerical)
Amer. Elec. Power	R	3	BBB	7
Cleco Corp.	R	3	BBB	7
DPL Inc.	R	3	A-	5
IDACORP, Inc.	R	3	BBB	7
Alliant Energy	R	2	BBB+	6
Northeast Utilities	R	3	BBB	7
PG&E Corp.	R	2	BBB+	6
Progress Energy	R	2	BBB+	6
Pinnacle West Capital	R	3	BBB-	8
Southern Co.	R	1	A	4
Westar Energy	R	2	BBB	8
Xcel Energy Inc.	R	2	BBB+	6
Average		2.4		6.4

REBUTTAL SCHEDULE JVW-3
RECALCULATION OF STAFF'S SINGLE-STAGE ANNUAL MODEL
USING STAFF'S ANALYSTS' GROWTH FORECASTS
AS THE GROWTH ESTIMATE IN
STAFF'S SINGLE-STAGE ANNUAL DCF MODEL

	1	2	3	4	
Company	Dividend	Price	Dividend Yield	Growth	Cost of Equity
Alliant Energy	1.60	29.463	5.43%	4.93%	10.4%
American Electric Power	1.66	33.753	4.92%	4.67%	9.6%
Cleco Corp.	1.00	26.213	3.81%	9.00%	12.8%
DPL Inc.	1.18	27.397	4.31%	11.70%	16.0%
IDACORP, Inc.	1.20	30.850	3.89%	5.00%	8.9%
Northeast Utilities	1.00	24.860	4.02%	8.02%	12.0%
PG&E Corp.	1.80	43.260	4.16%	6.93%	11.1%
Pinnacle West Capital	2.10	35.508	5.91%	4.40%	10.3%
Progress Energy	2.50	39.528	6.32%	3.88%	10.2%
Southern Company	1.80	32.575	5.53%	4.91%	10.4%
Westar Energy	1.24	21.093	5.88%	4.00%	9.9%
Xcel Energy	1.00	20.592	4.86%	6.14%	11.0%
Average					**11.1%**

Notes:

Companies	=	Staff's proxy company group
Dividend (D)	=	Staff Schedule 17
Stock Price (P)	=	Staff Schedule 17
Projected Dividend Yield	=	Staff Schedule 17
Growth (g)	=	Staff Schedule 15, Consensus earnings growth estimates
Cost of Equity (K)	=	Cost of equity using Staff's single-stage annual DCF model using Staff's analysts' growth forecasts as the estimate of growth.

REBUTTAL SCHEDULE JVW-4
2009 AUTHORIZED RETURNS ON EQUITY
ELECTRIC UTILITIES[3]

Company	Authorized Return on Equity	
Public Service Co. of OK	10.50	
Cleveland Elec Illuminating Co	10.50	Delivery
Ohio Edison Co.	10.50	Delivery
Toledo Edison Co.	10.50	Delivery
Union Electric Co.	10.76	
Idaho Power Co.	10.50	
United Illuminating Co.	8.75	Delivery
Indiana Michigan Power Co.	10.50	
Southern California Edison Co.	11.50	
Tampa Electric Co.	11.25	
Entergy New Orleans Inc.	11.10	
ALLETE (Minnesota Power)	10.74	
PacifiCorp	10.61	
Consolidated Edison Co. of NY	10.00	Delivery
Oklahoma Gas and Electric Co.	10.25	
Public Service Co. of NM	10.50	
Idaho Power Co.	10.50	
Central Hudson Gas & Electric	10.00	Delivery
Nevada Power Co.	10.80	
Duke Energy Ohio Inc.	10.63	Delivery
Avista Corp.	10.50	
Oncor Electric Delivery Co.	10.25	Delivery
Cleco Power LLC	10.70	
Northern States Power Co. - MN	10.88	
Consumers Energy Co.	10.70	
Sierra Pacific Power Co.	10.70	
Southwestern Electric Power Co	10.25	
Otter Tail Corp.	10.75	
Massachusetts Electric Co.	10.35	Delivery
Public Service Co. of CO	10.50	
Duke Energy Carolinas LLC	10.70	
Arizona Public Service Co.	11.00	
Upper Peninsula Power Co.	10.90	
Wisconsin Electric Power Co.	10.40	
Wisconsin Power and Light Co	10.40	
Avista Corp.	10.20	
Madison Gas and Electric Co.	10.40	
Northern States Power Co - WI	10.40	
Delmarva Power & Light Co.	10.00	Delivery
Average All Companies	10.52	
Average Integrated Electrics	10.65	

[3] Regulatory Research Associates, "Major Rate Case Decisions--January 2009-December 2009," January 8, 2010.

AFFIDAVIT OF JAMES H. VANDER WEIDE

STATE OF NORTH CAROLINA)
) ss
COUNTY OF DURHAM)

On the 29 day of March, 2010, before me appeared James H. Vander Weide, to me personally known, who, being by me first duly sworn, states that he is Research Professor of Finance and Economics at the Fuqua School of Business of Duke University and President of Financial Strategy Associates and acknowledges that he has read the above and foregoing document and believes that the statements therein are true and correct to the best of his information, knowledge and belief.

James H. Vander Weide

Subscribed and sworn to before me this 29 day of March, 2010

Notary Public

My commission expires: 2/29/2012