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Before the Public Service Commission of the State of Missouri

Rebuttal Testimony

of

James H. Vander Weide, Ph.D.

April 2011

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ON BEHALF OF
THE EMPIRE DISTRICT GAS COMPANY
BEFORE THE
MISSOURI PUBLIC SERVICE COMMISSION

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DR. JAMES H. VANDER WEIDE
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BEFORE THE
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I. INTRODUCTION

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 10.6 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 10.6 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 8.6 percent to 9.6 percent, with a midpoint of 9.1 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 ten electric companies. From its single-stage DCF model analysis, Staff obtains an estimated cost of equity in the range 8.5 percent to 9.5 percent, with a midpoint estimate of 9.0 percent (Staff Report at 20). From its multi-stage DCF analysis, Staff obtains an estimated cost of equity in the range 8.40 percent to 9.13 percent, with a midpoint of 8.77 percent (Staff Report at 21). Staff places "primary weight" on its multi-stage DCF estimate of its proxy companies' cost of equity (Staff Report at 19).

Staff also recognizes that Empire is more risky than its proxy company group. Thus, Staff arrives at its final 8.6 percent to 9.6 percent recommended cost of equity range by adding a thirty-five basis-point risk premium to the 8.77 percent midpoint result of the cost of equity estimates derived from its multi-stage DCF model analysis and expanding the range by fifty basis points around the adjusted midpoint cost of equity estimate.

In addition, Staff also applies the Capital Asset Pricing Model ("CAPM") to its proxy company group, obtaining results in the range 6.26 percent to 8.31 percent (Staff Report at 26). However, since Staff recommends precisely the range of results from its multi-stage DCF model analysis, I conclude that Staff gives no weight to its CAPM results.

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, PG&E Corp., Pinnacle West Capital, 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 fifty-eight electric utilities, Staff selects ten 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")—twenty-three companies eliminated.
4. At least seventy percent of revenues from electric operations as classified by AUS—nine companies eliminated.
5. Ten-year Value Line historical growth data available—three companies eliminated.
6. No reduced dividend since 2006--five companies eliminated.
7. Projected growth available from Value Line and Reuters--two companies eliminated.
8. At least investment grade credit rating--two companies eliminated.

9. Company-owned generating assets—two companies eliminated.

10. Significant merger or acquisition announced in the last three years—two companies eliminated [Staff Report at 17].

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 methods 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 twenty 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 TEN ELECTRIC UTILITIES COMPARE TO THE AVERAGE INVESTMENT RISK OF YOUR LARGER PROXY GROUP OF 28 ELECTRIC UTILITIES?

A. Staff's proxy group of ten electric utilities has the same investment risk as my proxy group of twenty 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 seventy 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"--regulated assets greater than eighty percent of total assets; (2) "mostly regulated"--regulated assets between fifty percent and eighty percent of total assets; and (3) "diversified"--regulated assets less than fifty 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 THE SAME INVESTMENT RISK AS THE COMPANIES IN ITS OTHER GROUPS?

A. Yes. My proxy companies include fourteen companies classified by EEI as "regulated," five companies classified as "mostly regulated," and one company classified as "diversified." Yet the average risk ratings results for the companies classified as "regulated" utilities are 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 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.

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 8, Staff eliminates nine companies as a result of their failure to meet Staff's criterion that the percent of revenues from electric operations must be greater than seventy percent. The average Value Line Safety Rank for these nine companies is 2, and the average Standard & Poor's bond rating for these companies is BBB+, the same average Safety 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 criterion that a proxy company must have a certain percentage of regulated assets or revenues relate to a potential single dimension of risk rather than to an overall assessment of the company's equity risk. A problem with using a potential single dimension of risk, such as percent regulated electric assets or revenues, is that a company may be eliminated based on a single dimension of risk, even though the company's overall 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 seventy 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.

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.

1. Staff's Single-Stage Annual DCF Model

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 2011 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 2011 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 ("DPS"), earnings per share ("EPS"), and book value per share ("BPS"), as reported in Value Line, along with Value Line's projected growth rates in DPS, EPS, and BPS, and forecasts of EPS growth obtained from Reuters and Value Line. From its review of these data, Staff obtains six growth indicators for its proxy companies (the following table reproduces the average growth rates reported on Staff's Schedule 10-4). Although Staff believes that most of these growth indicators are unsustainably high for electric utilities, Staff chooses to use a growth rate in the range four percent to five percent for its proxy electric companies in its constant growth DCF model (Staff Report at 20).

TABLE 1
AVERAGE ELECTRIC UTILITY GROWTH RATES REPORTED BY STAFF

GROWTH INDICATOR	RESULT
Average Historical 10-yr. Growth in DPS, EPS, and BPS	0.07%
Historical 5-yr Growth in DPS, EPS, and BPS	4.23%
Projected 5-yr. Growth in DPS, EPS, and BPS	5.10%
Reuters Projected 5-yr. EPS Growth	5.82%
Value Line Projected 3–5-yr. EPS Growth	6.25%
AVERAGE PROJECTED EPS GROWTH	**6.04%**

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. HAVING REVIEWED GROWTH FORECASTS FROM VARIOUS SOURCES, WHAT GROWTH RATE DOES STAFF ACTUALLY USE IN ITS SINGLE-STAGE ANNUAL DCF MODEL ESTIMATE OF EMPIRE'S COST OF EQUITY?

A. Staff uses a growth rate in the range four percent to five percent (Staff Report at 19).

Q. HOW DOES STAFF ARRIVE AT ITS FOUR PERCENT TO FIVE PERCENT GROWTH RATE RANGE?

A. Staff does not explain how it arrives at its four percent to five percent growth rate range:

> Staff used a growth rate range of 4.0% to 5.0% in its constant-growth DCF, although Staff does not consider that figure to be sustainable for the electric utility industry in the long run. [Staff Report at 19]

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 DIVIDEND YIELD DOES STAFF PROPOSE FOR ITS PROXY COMPANIES?

A. Staff proposes a dividend yield of 4.50 percent (Staff Report, Schedule 12).

Q. WHAT DCF RESULT WOULD STAFF HAVE OBTAINED IF IT HAD USED THE 6.04 PERCENT AVERAGE ANALYSTS' GROWTH FORECASTS AS REPORTED BY REUTERS AND VALUE LINE TO ESTIMATE THE GROWTH COMPONENT OF ITS DCF MODEL?

A. Staff would have obtained a DCF estimate of the cost of equity equal to 10.54 percent (see following table).

TABLE 2
DCF RESULT FOR STAFF PROXY COMPANIES
USING STAFF'S AVERAGE REPORTED EPS GROWTH FORECAST
AS THE ESTIMATE OF GROWTH IN THE DCF MODEL

PROPOSED DIVIDEND YIELD	4.50%
Growth	6.04%
Proxy Cost of Equity	**10.54%**

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 three percent to four percent estimates of perpetual growth, and then grow at rates in the range three to four percent in perpetuity. Specifically, Staff calculates multi-stage DCF results using terminal growth rates of three percent, three and one half percent, and four percent.

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 believes that the four to five percent growth rate it uses in its single-stage model is not sustainable in the long run:

> The constant-growth DCF model may not yield reliable results if industry and/or economic circumstances cause expected near-term growth rates to be inconsistent with sustainable perpetual growth rates. Staff believes this condition currently exists for the electric utility industry. Consequently, Staff has elected to use a multi-stage DCF method and will give this estimate primary weight in its estimated cost of equity for Empire. [Staff Report at 20.]

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 EPS growth rates to value stocks in the marketplace.

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

A. Staff arrives at its three to four percent estimate of long-term growth by examining data on the rolling ten-year average growth rates in DPS, EPS, and BPS for Central region electric utilities from 1968 through 1999.

Q. DO YOU AGREE WITH STAFF'S USE OF AVERAGE HISTORICAL GROWTH IN DPS, EPS, AND BPS TO FORECAST LONG-RUN FUTURE GROWTH IN THE DCF MODEL?

A. No. As discussed above and in my direct testimony, the DCF model requires the growth forecasts of investors, and my studies indicate that investors use

the analysts' EPS growth forecasts to forecast long-run future growth in the DCF model. In addition, historical growth rates are strongly influenced by accounting adjustments and one-time write-offs that do not relate to a company's expected future growth.

Q. STAFF RECOGNIZES THAT MULTI-STAGE MODEL RESULTS ARE SENSITIVE TO THE ASSUMED LONG-TERM GROWTH RATE (STAFF REPORT AT 22). DID THE COMMISSION ACCEPT THE STAFF'S LONG-TERM GROWTH ASSUMPTION IN THE RECENT AMEREN CASE, ER-2010-0036?

A. No. As Staff itself reports, "In its Report and Order the Commission stated a preference to use historical GDP growth from 1929 through 2008 to derive an expected growth rate of 6.0% for the economy [Staff Report at 25]."

Q. HOW DOES THE COMMISSION'S SIX PERCENT ESTIMATE OF EXPECTED LONG-TERM GROWTH COMPARE TO THE AVERAGE ANALYSTS' EPS GROWTH FORECAST FOR STAFF'S PROXY COMPANIES?

A. As discussed above, the average analysts' EPS growth forecast for Staff's proxy companies is 6.04 percent. Thus, the average analysts' EPS growth forecast is virtually the same as the six percent long-term growth forecast the Commission accepted in the Ameren Order.

Q. WHAT DCF RESULT WOULD THE STAFF HAVE OBTAINED FROM ITS MULTI-STAGE DCF MODEL IF IT HAD USED THE SIX PERCENT LONG-

TERM GROWTH RATE THE COMMISSION ACCEPTED IN THE AMEREN ORDER?

A. Using a six percent estimate of long-term growth in its multi-stage model, the Staff would obtain a DCF estimate of 10.63 percent.

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 2010 through January 2011 (4.38 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 – 2009 (6.0 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 – 2009 (4.4 percent). Staff obtains its risk premium data from the *Ibbotson® SBBI® 2010 Yearbook Stocks, Bonds, Bills, and Inflation* ("SBBI"). (Staff Report at 26.)

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 2010. 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 2010 Yearbook* at 56 – 57 and Schedule 6 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 – 47, 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]

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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.

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 3.

TABLE 3
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.

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

III. STAFF'S TESTS OF REASONABLENESS

Q. HOW DOES STAFF ARRIVE AT ITS RECOMMENDED 9.1 PERCENT MIDPOINT COST OF EQUITY FOR EMPIRE?

A. As noted above, Staff arrives at its recommended 9.1 percent midpoint cost of equity estimate by adding a thirty-five basis-point Empire-specific risk premium to its 8.77 percent midpoint multi-stage DCF estimate of the cost of equity for its proxy companies.

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

A. Staff recommends a thirty-five 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 9.1 PERCENT MIDPOINT COST OF EQUITY FOR EMPIRE TO THE COST OF EQUITY THE COMMISSION AUTHORIZED FOR AMEREN IN ER-2010-0036?

A. No.

Q. WHAT RATE OF RETURN ON EQUITY DID THE COMMISSION AUTHORIZE FOR AMEREN IN THAT PROCEEDING?

A. The Commission authorized a rate of return on equity equal to 10.1 percent.

Q. HAVE INTEREST RATES CHANGED MATERIALLY SINCE THE AMEREN ORDER WAS ISSUED IN MAY 2010?

A. No. The average interest rate on Baa-rated utility bonds was 5.95 percent in May 2010, compared to an average interest rate of 6.15 percent in February

2011; the average interest rate on thirty-year Treasury bonds was 4.29 percent in May 2010 and 4.65 percent in February 2011.

Q. WHAT CONCLUSIONS DO YOU DRAW FROM YOUR OBSERVATIONS THAT THE COMMISSION AUTHORIZED A RATE OF RETURN ON EQUITY OF 10.1 PERCENT IN THE AMEREN PROCEEDING AND THAT INTEREST RATES HAVE NOT CHANGED MATERIALLY SINCE THE TIME OF THAT ORDER?

A. I conclude that Staff's recommended 9.1 percent midpoint cost of equity estimate understates Empire's cost of equity by at least 100 basis points.

Q. DOES STAFF COMPARE ITS RECOMMENDED 9.1 PERCENT MIDPOINT 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 2010 is 10.34 percent (Staff Report at 27).

Q. DOES THIS 10.34 PERCENT AVERAGE AUTHORIZED RETURN ON EQUITY FOR ELECTRIC UTILITIES INCLUDE AUTHORIZED RETURNS ON EQUITY FOR WIRES-ONLY ELECTRIC UTILITIES?

A. Yes, it does.

Q. WHAT IS THE AVERAGE AUTHORIZED RETURN ON EQUITY IN 2010 FOR INTEGRATED ELECTRIC UTILITIES SUCH AS EMPIRE?

A. The average authorized return on equity for integrated electric utilities such as Empire is 10.49 percent (see Rebuttal Schedule JVW-3).

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

A. Yes, by definition, the 10.49 percent authorized return on equity applies to all integrated electric utilities who received allowed rates of return in 2010. Since there were forty-three integrated electric utilities whose returns were authorized in 2010, it is reasonable to assume that the average allowed return represents a return for an average risk integrated electric utility.

Q. IF ONE ACCEPTS THE STAFF'S OPINION THAT EMPIRE REQUIRES AT LEAST A THIRTY-FIVE BASIS-POINT RISK PREMIUM TO REFLECT ITS HIGHER THAN AVERAGE INVESTMENT RISK, WHAT DOES THE 10.49 PERCENT AVERAGE ALLOWED RETURN FOR INTEGRATED ELECTRIC UTILITIES IN 2010 IMPLY ABOUT THE REASONABLENESS OF STAFF'S RECOMMENDED 9.1 PERCENT MIDPOINT RETURN ON EQUITY FOR EMPIRE IN THIS PROCEEDING?

A. The average allowed return on equity evidence implies that Staff's 9.1 percent midpoint recommended rate of return for Empire is unreasonably low. Adding Staff's thirty-five basis-point risk premium to the 10.49 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 10.84 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 10.6 percent.

Q. PLEASE SUMMARIZE YOUR EVIDENCE ON THE REASONABLENESS OF THE STAFF'S 9.1 PERCENT MIDPOINT RECOMMENDED ROE IN THIS PROCEEDING?

A. I find that the Staff's 9.1 percent midpoint recommended ROE in this proceeding is not only less than my recommended 10.6 percent cost of equity, but is also less than: (1) the 10.1 percent the Commission authorized in ER-2010-0036; (2) the 10.34 percent average allowed return on equity Staff reports for all electric utilities in 2010; (3) the 10.49 percent average allowed return on equity for all integrated electric utilities in 2010; (4) the 10.54 percent result Staff would obtain using the analysts' EPS growth rates in its single-stage DCF model; and (5) the 10.63 percent result Staff would obtain using a more reasonable long-term growth rate in its multi-stage model (see following table). These comparisons suggest that Staff's recommended 9.1 percent midpoint return on equity understates Empire's cost of equity by one hundred to 150 basis points.

TABLE 4
COMPARISON OF STAFF'S RECOMMENDED COST OF EQUITY
TO OTHER INDICATORS OF THE COST OF EQUITY

INDICATOR	COST OF EQUITY
Vander Weide Cost of Equity Studies	10.60%
Commission Order in ER-2010-0036	10.10%
Average Authorized Return All Electrics in 2010	10.34%
Average Authorized Return Integrated Electrics 2010	10.49%
Staff Model Results Using Staff's Reported EPS Growth Forecasts	10.54%
Staff Model Results Using 6% Long-term Growth in ER-2010-0036	10.63%

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 COMPANY GROUP	EEI CLASSIFICATION	COST OF EQUITY	SAFETY RANK	S&P BOND RATING	S&P BOND RATING (NUMERICAL)
1	Hawaiian Elec.	D	13.4%	3	BBB	7
2	Dominion Resources	MR	9.5%	2	A-	5
3	Duke Energy	MR	10.8%	2	A-	5
4	Exelon Corp.	MR	7.3%	1	BBB	7
5	NextEra Energy	MR	10.1%	2	A-	5
6	SCANA Corp.	MR	10.4%	2	BBB+	6
7	Consol. Edison	R	10.1%	1	A-	5
8	Alliant Energy	R	15.3%	2	BBB+	6
9	NSTAR	R	10.4%	1	A+	3
10	Northeast Utilities	R	11.5%	3	BBB	7
11	PG&E Corp.	R	12.0%	2	BBB+	6
12	Progress Energy	R	10.7%	2	BBB+	6
13	Pinnacle West Capital	R	12.6%	3	BBB-	8
14	Portland General	R	10.0%	3	BBB+	6
15	Southern Co.	R	10.8%	1	A	4
16	TECO Energy	R	12.3%	3	BBB	7
17	UIL Holdings	R	11.0%	2	BBB	7
18	Wisconsin Energy	R	12.9%	2	BBB+	6
19	Westar Energy	R	15.5%	2	BBB+	6
20	Xcel Energy Inc.	R	11.6%	2	BBB+	6
21	Average All Companies		11.4%	2.1		5.9
22	Average "MR," "D" Companies		10.2%	2.0		5.8
23	Average "R" Companies		11.9%	2.1		5.9

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

LINE NO.	COMPANIES ELIMINATED BY STAFF 70% CRITERION	SAFETY RANK	S&P BOND RATING	S&P BOND RATING (NUMERICAL)
1	Avista Corp.	2	BBB	7
2	CH Energy Group	1	A	4
3	CMS Energy Corp.	3	BBB-	8
4	Consol. Edison	1	A-	5
5	DTE Energy	3	BBB+	6
6	TECO Energy	3	BBB	7
7	UNITIL Corp.	2	NA	NA
8	Vectren Corp.	2	A-	5
9	Wisconsin Energy	2	BBB+	6
10	Average	2	BBB+	6

LINE NO.	STAFF PROXY GROUP	SAFETY RANK	S&P BOND RATING	S&P BOND RATING (NUMERICAL)
1	Alliant Energy	2	BBB+	6
2	Amer. Elec. Power	3	BBB	7
3	Cleco Corp.	3	BBB	7
4	DPL Inc.	3	A-	5
5	IDACORP, Inc.	3	BBB	7
6	PG&E Corp.	2	BBB+	6
7	Pinnacle West Capital	3	BBB-	8
8	Southern Company	1	A	4
9	Westar Energy, Inc.	2	BBB	7
10	Xcel Energy	2	A-	5
11	Average	2	BBB+	6

REBUTTAL SCHEDULE JVW-3
2010 AUTHORIZED RETURNS ON EQUITY
ELECTRIC UTILITIES[3]

LINE NO	COMPANY	RETURN ON EQUITY (%)	WIRES ONLY
1	Interstate Power & Light Co.	10.80	
2	Detroit Edison Co.	11.00	
3	PacifiCorp	10.13	
4	Duke Energy Carolinas LLC	10.70	
5	Kansas Gas and Electric Co.	10.40	
6	Westar Energy Inc.	10.40	
7	Narragansett Electric Co.	9.80	Wires Only
8	PacifiCorp	10.60	
9	Idaho Power Co.	10.18	
10	Potomac Electric Power Co.	9.63	Wires Only
11	Kentucky Utilities Co.	10.50	
12	Florida Power Corp.	10.50	
13	Virginia Electric & Power Co.	11.90	
14	Virginia Electric & Power Co.	12.30	
15	Virginia Electric & Power Co.	12.30	
16	Florida Power & Light Co.	10.00	
17	Consolidated Edison Co. of NY	10.15	Wires Only
18	Puget Sound Energy Inc.	10.10	
19	MDU Resources Group Inc.	10.00	
20	Ameren Illinois	9.90	Wires Only
21	Ameren Illinois	10.06	Wires Only
22	Ameren Illinois	10.26	Wires Only
23	Atlantic City Electric Co.	10.30	Wires Only
24	Rockland Electric Company	10.30	Wires Only
25	Entergy Arkansas Inc.	10.20	
26	Union Electric Co.	10.10	
27	Public Service Electric Gas	10.30	Wires Only
28	Central Hudson Gas & Electric	10.00	Wires Only
29	Kentucky Power Co.	10.50	
30	Public Service Co. of NH	9.67	Wires Only
31	Connecticut Light & Power Co.	9.40	Wires Only
32	Wisconsin Electric Power Co.	10.25	
33	Appalachian Power Co.	10.53	
34	South Carolina Electric & Gas	10.70	
35	Maui Electric Company Ltd	10.70	
36	Black Hills Colorado Electric	10.50	
37	Potomac Electric Power Co.	9.83	Wires Only
38	Northern IN Public Svc Co.	9.90	
39	Hawaiian Electric Co.	10.70	

3 Regulatory Research Associates, SNL Financial.

LINE NO	COMPANY	RETURN ON EQUITY (%)	WIRES ONLY
40	NY State Electric & Gas Corp.	10.00	Wires Only
41	Rochester Gas & Electric Corp.	10.00	Wires Only
42	UNS Electric Inc.	9.75	
43	Indiana Michigan Power Co.	10.35	
44	Hawaii Electric Light Co	10.70	
45	ALLETE (Minnesota Power)	10.38	
46	Consumers Energy Co.	10.70	
47	Avista Corp.	10.20	
48	Kansas City Power & Light	10.00	
49	Entergy Texas Inc.	10.13	
50	Baltimore Gas and Electric Co.	9.86	
51	NorthWestern Energy Division	10.00	Wires Only
52	Virginia Electric & Power Co.	10.70	
53	PacifiCorp	10.13	
54	Interstate Power & Light Co.	10.44	
55	Portland General Electric Co.	10.00	
56	Sierra Pacific Power Co.	10.60	
57	Upper Peninsula Power Co.	10.30	
58	PacifiCorp	9.90	
59	Georgia Power Co.	11.15	
60	**Average ROE Wires Only Companies**	**9.98**	
61	**Average ROE Integrated Companies**	**10.49**	
62	**Average ROE All Companies**	**10.35**	

AFFIDAVIT OF JAMES H. VANDER WEIDE

STATE OF NORTH CAROLINA)
) ss
COUNTY OF DURHAM)

On the 6 day of April, 2011, 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 also 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 6 day of April, 2011

Notary Public

My commission expires: 2/29/2012