Exhibit No.
Issue: Rate of Return
Witness: James H. Vander Weide
Type of Exhibit: Surrebuttal Testimony
Sponsoring Party: Empire District Electric
Case No. ER-2016-0023
Date Testimony Prepared: May 2016

Before the Public Service Commission of the State of Missouri

Surrebuttal Testimony

of

James H. Vander Weide, Ph.D.

May 2016

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

SURREBUTTAL TESTIMONY
OF
DR. JAMES H. VANDER WEIDE
ON BEHALF OF
THE EMPIRE DISTRICT ELECTRIC COMPANY
BEFORE THE
MISSOURI PUBLIC SERVICE COMMISSION
CASE NO. ER-2016-0023

I. INTRODUCTION

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

A. My name is James H. Vander Weide. I am 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 PREVIOUSLY PROVIDED DIRECT AND REBUTTAL TESTIMONIES BEFORE THE MISSOURI PUBLIC SERVICE COMMISSION ("COMMISSION") IN THIS PROCEEDING?

A. Yes, I am.

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

A. The purpose of my direct testimony in this proceeding was to prepare an independent appraisal of the cost of equity for The Empire District Electric Company ("Empire" or "the Company") and to recommend to the Commission a range of returns on equity for the Company's electric utility operations in Missouri.

Q. HOW DID YOU ESTIMATE EMPIRE'S COST OF EQUITY?

A. I estimated Empire's cost of equity by applying standard cost of equity methods, including the Discounted Cash Flow ("DCF"), the risk premium, and the Capital Asset Pricing Model ("CAPM") to market data for a large proxy group of electric utilities.

Q. WHAT COST OF EQUITY RESULTS DID YOU OBTAIN FROM YOUR APPLICATION OF THESE COST OF EQUITY METHODS TO A LARGE PROXY GROUP OF ELECTRIC UTILITIES?

A. From my DCF method, I obtained a cost of equity result equal to 9.9 percent; from my risk premium methods, I obtained cost of equity results of 10.6 percent and 10.1 percent; and from my CAPM, I obtained cost of equity results of 9.4 percent, 10.8 percent, 9.7 percent, and 11.2 percent.

Q. WHAT COST OF EQUITY DID YOU RECOMMEND BASED ON THESE RESULTS?

A. I recommended a cost of equity in the range 9.9 percent to 10.6 percent, with an average of 10.2 percent based on the results of my DCF and risk premium studies.

Q. WHAT ALLOWED RETURN ON COMMON EQUITY IS EMPIRE REQUESTING FOR THE PURPOSE OF DETERMINING THE COMPANY'S REVENUE REQUIREMENT IN THIS PROCEEDING?

A. Empire is requesting an allowed return on common equity equal to 9.9 percent for the purpose of calculating the Company's revenue requirement.

Q. WHY IS THE COMPANY REQUESTING AN ALLOWED RETURN ON EQUITY THAT IS AT THE LOW END OF YOUR RECOMMENDED RANGE OF RETURNS?

A. Empire Witness Bryan Owens explains in his direct testimony that the Company is requested a 9.9 percent allowed return on equity because this case is essentially a "true-up" of the recently completed rate case, ER-2014-0351; and the Company's proposed rate of return in this case is within the range recommended by the parties in ER-2014-0351 and is supported by the cost of equity studies reported in my direct testimony. (Owens Direct at 7)

Q. WHAT ALLOWED RETURN ON EQUITY IS STAFF RECOMMENDING IN THIS PROCEEDING?

A. Staff is recommending an allowed return on equity equal to 9.75 percent.

Q. HOW DOES STAFF ARRIVE AT ITS RECOMMENDED 9.75 PERCENT ALLOWED RETURN ON EQUITY?

A. Staff arrives at its recommended 9.75 percent ROE by: (1) comparing its current estimate of its proxy electric utilities' cost of equity to its estimate of the proxy electric utilities' cost of equity at the time of the most recent Ameren and Kansas City Power & Light cases; and (2) adding a 25-basis-point risk premium to the 9.53 percent and 9.50 percent allowed returns found in the Ameren and Kansas City Power & Light ("KCPL") cases. (Staff Report at 55)

Q. WHAT DOES STAFF CONCLUDE FROM ITS COMPARISON OF ITS CURRENT ESTIMATE OF THE ELECTRIC UTILITY COST OF EQUITY TO ITS ESTIMATE AT THE TIME OF THE AMEREN AND KCPL CASES?

A. Staff concludes that there has not been a significant change in the electric utility cost of equity since the time of the Ameren and KCPL cases:

> Considering all of the information that Staff has reviewed, there does not appear to be a significant change in the capital markets to support a conclusion that the cost of equity for the electric utility industry has substantially increased or decreased since the Commission ordered an allowed ROE of 9.53% for Ameren Missouri and 9.50% for KCPL. (Staff Report at 55)

Q. WHY DOES STAFF FOCUS ON ASSESSING WHETHER THERE IS A CHANGE IN THE COST OF EQUITY, RATHER THAN ON STAFF'S CURRENT ESTIMATE OF THE ELECTRIC UTILITY COST OF EQUITY?

A. Staff focuses on assessing whether there is a change in the electric utility cost of equity since the time of the Ameren and KCPL cases because it believes that regulatory commissions typically grant an allowed ROE that exceeds the electric utility cost of equity. (Staff Report at 24)

Q. DO YOU AGREE WITH STAFF'S OPINION THAT REGULATORY COMMISSIONS TYPICALLY GRANT ALLOWED ROES THAT EXCEED THE REGULATED UTILITY'S COST OF EQUITY?

A. No. Although some commissions offer special ROE incentives for investments in socially desirable projects such as investment in new environmentally friendly generation or transmission facilities, I am not aware of any commission that has purposely decided to set the regulated utility's allowed ROE above its cost of equity in a general rate proceeding. In my experience, regulatory commissions purposefully attempt to set an allowed return that, in their opinion, is commensurate with returns on other investments of comparable risk—that is, commensurate with their estimate of the cost of equity. Indeed, it is my understanding as an economist that a commission is

required by the *Hope* and *Bluefield* standards to set the allowed return that is commensurate with returns on other investments of comparable risk. (*See* Vander Weide Direct at 9 – 11.)

Q. DOES STAFF DISCUSS THE *HOPE* AND *BLUEFIELD* DECISIONS IN ITS INITIAL REPORT?

A. Yes. Staff describes the guidelines from *Hope* and *Bluefield* that it believes must be followed in setting an allowed rate of return:

> From these two decisions, Staff derives and applies the following principles to guide it in recommending a fair and reasonable ROR:
>
> 1. A return consistent with returns of investments of comparable risk;
>
> 2. A return sufficient to assure confidence in the utility's financial 29 integrity; and
>
> 3. A return that allows the utility to attract capital. [Staff Report at 23.]

Q. IS THE STAFF'S OPINION THAT REGULATORY COMMISSIONS TYPICALLY GRANT ALLOWED ROES THAT EXCEED THE REGULATED UTILITY'S COST OF EQUITY CONSISTENT WITH STAFF'S OWN INTERPRETATION OF THE *HOPE* AND *BLUEFIELD* STANDARDS?

A. No.

Q. WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?

A. I have been asked by Empire to respond to the rebuttal testimony filed in this proceeding by Ms. Shana Griffin for the Staff of the Missouri Public Service Commission ("Staff" or "Ms. Griffin").

II. RESPONSE TO STAFF REBUTTAL

Q. WHAT TOPICS DO YOU ADDRESS IN YOUR RESPONSE TO STAFF'S REBUTTAL TESTIMONY?

A. I address Staff's rebuttal comments on my: (1) proxy group of electric utilities; (2) DCF analyses; and (3) risk premium and CAPM analyses.

A. Proxy Electric Utilities

Q. HOW DO YOU SELECT YOUR PROXY GROUP OF ELECTRIC UTILITIES?

A. I select all the companies in Value Line's groups of electric utilities 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) have an I/B/E/S long-term growth forecast; and (4) are not the subject of a merger offer that has not been completed. In addition, each of the utilities included in my comparable groups has an investment grade bond rating and a Value Line Safety Rank of 1, 2, or 3.

Q. DOES STAFF AGREE WITH YOUR PROXY SELECTION CRITERIA?

A. No. Ms. Griffin claims that my proxy selection criteria fail to satisfy the basic objective of proxy selection, namely, to identify "pure-play" electric utilities. (Staff Rebuttal at 3)

Q. HOW DOES STAFF DEFINE A "PURE-PLAY" ELECTRIC UTILITY?

A. Staff defines a "pure-play" electric utility as one that has at least 50 percent of plant from electric utility operations; at least 25 percent of plant from electric generation assets; and at least 80 percent of income from regulated utility operations.

Q. DO YOU AGREE WITH STAFF'S CLAIM THAT THE OBJECTIVE OF PROXY GROUP SELECTION IS TO FIND COMPANIES THAT ARE "PURE-PLAY" ELECTRIC UTILITIES?

A. No. The objective of proxy selection is to find the largest possible group of electric utilities that are comparable in risk to the electric utility whose cost of equity is being estimated. The advantage of my proxy electric utility group is that it has slightly lower investment risk than Staff's proxy group but also includes twice as many companies as Staff's proxy group (see Vander Weide Rebuttal Schedule 1). The use of a larger sample with approximately the same average risk reduces the uncertainty of the cost of equity estimate.

Q. WHAT IS THE DCF MODEL FOR ESTIMATING THE COST OF EQUITY?

A. The DCF model is based on the assumption that a company's stock price is equal to the present discounted value of all expected future dividends. Assuming that dividends are paid annually and grow at a constant annual rate, g, the equation for the discounted present value of the stock can be solved for k, the cost of equity. The resulting cost of equity equation is $k = D_1/P_s + g$, where k is the cost of equity, D_1 is the expected next period annual dividend, P_s is the current price of the stock, and g is the constant annual growth rate in earnings, dividends, and book value per share. The term D_1/P_s is called the expected dividend yield component of the annual DCF model, and the term g is called the expected growth component of the annual DCF model.

Q. HOW DO YOU ESTIMATE THE GROWTH COMPONENT, G, OF THE DCF MODEL?

A. I use the analysts' estimate of future earnings per share ("EPS") growth reported by I/B/E/S Thomson Reuters.

Q. WHY DO YOU RELY ON ANALYSTS' PROJECTIONS OF FUTURE EPS GROWTH IN ESTIMATING THE INVESTORS' EXPECTED GROWTH RATE RATHER THAN RELYING ON HISTORICAL OR RETENTION GROWTH RATES?

A. I rely on analysts' projections of future EPS growth rather than historical or retention growth rates because there is considerable empirical evidence that analysts' forecasts are the best estimate of investors' expectation of future long-term growth. The evidence that analysts' forecasts are the best estimate of investors' expectation of future long-term growth is important because the DCF model requires the growth expectations of investors, not the growth expectations of the individual who is estimating the cost of equity.

Q. DOES MS. GRIFFIN AGREE WITH YOUR USE OF ANALYSTS' EPS GROWTH FORECASTS TO ESTIMATE THE GROWTH COMPONENT OF THE DCF MODEL?

A. No. Ms. Griffin claims that using the analysts' growth projections to estimate the growth component of the DCF model is inconsistent with the way securities analysts estimate the "fair price" for a utility's stock. Specifically, Ms. Griffin claims that when equity analysts estimate the fair price for a stock, they use discount rates that are "much lower than" cost of equity estimates that are presented by rate of return witnesses in rate proceedings. (Staff Rebuttal at 7)

Q. FOR THE SAKE OF ARGUMENT, ASSUME THAT MS. GRIFFIN IS CORRECT WHEN SHE CLAIMS THAT ANALYSTS USE LOWER DISCOUNT RATES TO ESTIMATE THE "FAIR PRICE" FOR A STOCK THAN COST OF EQUITY ESTIMATES WITNESSES PRESENT IN RATE PROCEEDINGS. DOES HER CLAIM SUPPORT HER CONTENTION THAT COST OF EQUITY ESTIMATES WITNESSES PRESENT IN RATE PROCEEDINGS ARE HIGHER THAN THE UTILITIES' COSTS OF EQUITY?

A. No. Ms. Griffin fails to recognize the fundamental difference between the DCF models used to estimate the cost of equity in rate proceedings and the discounted cash flow analyses used to determine the "fair price" of a company's stock. When using the DCF model to estimate a utility's cost of equity, rate of return witnesses use the *current observed market price* of the stock as the best estimate of a fair price for the stock, and then solve for the discount rate—that is, the cost of equity—that makes the present value of expected future cash flows equal to the current observed market price of the stock.

In contrast, when using discounted cash flow analyses to estimate a "fair price" for a stock, analysts use an ***assumed discount rate*** to determine a "fair price" of the stock, which, in many cases, is not equal to the current market price of the stock. Because analysts typically estimate a "fair price" that is different from the current observed market price, it is not surprising that the *assumed discount rate* in the analyst's cash flow analysis is not the same as the cost of equity estimates witnesses present in utility rate proceedings.

Q. DOES STAFF RECOGNIZE THAT SETTING ALLOWED ROES EQUAL TO THE DISCOUNT RATES USED IN STOCK VALUATIONS WOULD CAUSE UTILITY STOCK PRICES TO DECLINE?

A. Yes. Ms. Griffin acknowledges that setting allowed ROEs equal to the discount rates used to calculate fair values would cause utility stock prices to decline, stating that doing so "would cause downward pressure on the stock price of a company whose earnings rely primarily on the regulated utility operations….because utility stock prices currently reflect investors' expectations of regulators continuing to allow returns in the 9% to 10% range." (Staff Rebuttal at 8)

Q. WHEN STOCK PRICES DECLINE, ALL ELSE EQUAL, DO DCF ESTIMATES OF THE COST OF EQUITY INCREASE?

A. Yes. As stock prices decline, the cost of equity would increase to the point where the estimated cost of equity is equal to the returns expected by investors.

B. Risk Premium and CAPM Analyses

Q. DOES STAFF AGREE WITH YOUR RISK PREMIUM AND CAPM ESTIMATES OF EMPIRE'S COST OF EQUITY?

A. No. Ms. Griffin claims that my use of forecasted bond yields in my risk premium and CAPM analyses causes me to overstate the cost of equity for electric utilities such as Empire. (Staff Rebuttal at 10)

Q. WHY DO YOU USE FORECASTED BOND YIELDS RATHER THAN CURRENT BOND YIELDS IN YOUR RISK PREMIUM AND CAPM ANALYSES?

A. I use forecasted bond yields rather than current bond yields in my risk premium and CAPM analyses because the fair rate of return standard requires that a company have an opportunity to earn its required return on its investment during the forward-looking period during which rates will be in effect. In addition, because current interest rates are artificially depressed as a result of the Federal Reserve's efforts to keep interest rates low in order to stimulate the economy, current interest rates at this time are a poor indicator of expected future interest rates. Economists project that future interest rates will be higher than current interest rates as the Federal Reserve allows interest rates to rise in order to prevent inflation. Thus, the use of forecasted interest rates is consistent with the fair rate of return standard, whereas the use of current interest rates at this time is not.

Q. WHY DOES STAFF BELIEVE THAT YOUR USE OF FORECASTED BOND YIELDS IN YOUR RISK PREMIUM AND CAPM ANALYSES CAUSES YOU TO OVERSTATE THE COST OF EQUITY?

A. Ms. Griffin notes that I also recommended using forecasted bond yields in Empire's 2012 proceeding, but that actual bond yields turned out to be less than the forecasted yields I used in my risk premium and CAPM analyses (Staff Rebuttal at 12).

Q. IF ACTUAL INTEREST RATES DO NOT TURN OUT TO BE EQUAL TO PREVIOUSLY FORECASTED INTEREST RATES, DOES THIS DISCREPANCY IMPLY THAT INVESTORS DO NOT RELY ON FORECASTED INTEREST RATES TO ESTIMATE THEIR REQUIRED RETURNS?

A. No. Because forecasted interest rates are uncertain, actual rates are sometimes greater than forecasted interest rates and sometimes less than forecasted interest rates. That actual interest rates may not turn out to be equal to forecasted interest rates does not change the fundamental conclusion that forecasted interest rates are reasonable estimates of future rates.

Q. DO YOU PRESENT EVIDENCE IN YOUR DIRECT TESTIMONY THAT INVESTORS REQUIRE A HIGHER RISK PREMIUM WHEN INTEREST RATES DECLINE?

A. Yes. I provide empirical evidence that the ex ante risk premium moves inversely with interest rates. Specifically, I provide evidence that the ex ante risk premium tends to increase by approximately 60 basis points when interest rates decline by 100 basis points. For example, if the forecasted bond yield declines by 50 basis points, the cost of equity would decline by 20 basis points, because the required risk premium would increase by 30 basis points. (*See* Vander Weide Direct, Appendix 3.)

Q. RECOGNIZING THE EVIDENCE THAT INVESTORS DEMAND A HIGHER RISK PREMIUM WHEN INTEREST RATES DECLINE, WHAT COST OF EQUITY WOULD YOU HAVE FOUND IF YOU HAD USED ACTUAL INTEREST RATES RATHER THAN FORECASTED INTEREST RATES IN YOUR EX ANTE RISK PREMIUM ANALYSES?

A. The estimated ex ante risk premium cost of equity using the actual interest rate at the time of my studies would have been 10.0 percent (see Vander Weide Direct work papers).

Q. STAFF CLAIMS THAT IF YOU HAD USED ACTUAL INTEREST RATES ON LONG-TERM TREASURY BONDS IN YOUR CAPM ANALYSES, YOU WOULD HAVE OBTAINED CAPM COST OF EQUITY ESTIMATES IN THE RANGE 7.8 PERCENT TO 9.3 PERCENT (STAFF REBUTTAL AT 14). DO YOU AGREE?

A. No. Ms. Griffin's calculations fail to acknowledge the evidence I present in my direct testimony that the CAPM underestimates the cost of equity for companies with betas less than 1.0 (*see* Vander Weide Direct at 44 – 49) and the evidence I present in my rebuttal testimony that the CAPM underestimates the cost of equity for companies such as Empire with small market capitalizations (*see* Vander Weide Rebuttal at 21 - 22).

Q. DID YOU PROVIDE AN ADJUSTED CAPM THAT ACCOUNTS FOR THE TENDENCY OF THE CAPM TO UNDERESTIMATE THE COST OF EQUITY FOR COMPANIES SUCH AS YOUR ELECTRIC UTILITIES WITH BETAS LESS THAN 1.0?

A. Yes. I provided adjusted CAPM cost of equity estimates for my electric utility proxy groups equal to 10.8 percent and 11.2 percent (Vander Weide Direct at 48 – 49). If one were to use the actual Treasury bond yield of 2.85 percent discussed in Staff's rebuttal report, the CAPM cost of equity estimates using the adjusted-beta CAPM would be in the range 9.2 percent for the historical CAPM (2.85 + 0.90 x 7.0 = 9.2) to 11.1 percent for the DCF-based CAPM (2.85 + 0.90 x 9.15 = 11.1).

Q. DID YOU DISCUSS THE NEED TO ADD A SIZE PREMIUM TO CAPM COST OF EQUITY ESTIMATES FOR SMALL MARKET CAPITALIZATION COMPANIES SUCH AS EMPIRE IN YOUR REBUTTAL TESTIMONY?

A. Yes. I noted that estimates of the risk premium required for small market capitalization companies such as Empire is approximately 1.7 percent to 1.8 percent (Vander Weide Rebuttal at 22). Adding these small market capitalization risk premiums to base CAPM cost of equity estimates of 7.8 percent to 9.3 percent calculated using the Treasury bond yield of 2.85 percent produces CAPM cost of equity estimates in the range 9.5 percent to 11.1 percent.

Q. DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY?

A. Yes, it does.

AFFIDAVIT OF JAMES H. VANDER WEIDE

STATE OF NORTH CAROLINA)
) ss
COUNTY OF DURHAM)

On the 12th day of May, 2016, before me appeared James H. Vander Weide, to me personally known, who, being by me first duly sworn, states that he is 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 12th day of May, 2016.

Tochukwu Chime Ukpabi
Notary Public

My commission expires: 10-04-2016

TOCHUKWU CHIME UKPABI
My Commission Expires
NOTARY
PUBLIC
10-04-16
DURHAM COUNTY, NC