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Before the Public Service Commission of the State of Missouri

Surrebuttal Testimony

of

James H. Vander Weide, Ph.D.

March 2015

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

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SURREBUTTAL TESTIMONY
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MISSOURI PUBLIC SERVICE COMMISSION
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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 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 10.0 percent; from my risk premium methods, I obtained cost of equity results of 10.8 percent and 10.7 percent; and from my CAPM, I obtained cost of equity results of 9.9 percent and 10.2 percent.

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

A. I recommended a cost of equity in the range 10.0 percent to 10.8 percent, with an average of 10.5 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 10.15 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 Ms. Kelly Walters explains in her direct testimony: "Since this case is the beginning of back-to-back rate cases to recover what are primarily environmental compliance costs, Empire has chosen to use a conservative return on equity that is toward the low side of Dr. Vander Weide's recommendation." (Walters at 6)

Q. DID YOU UPDATE ANY OF YOUR COST OF EQUITY STUDIES IN YOUR REBUTTAL TESTIMONY?

A. Yes. I updated my DCF results using data through December 2014.

Q. WHAT AVERAGE DCF RESULT DID YOU REPORT IN YOUR REBUTTAL TESTIMONY?

A. I reported an updated average DCF result equal to 9.9 percent, a result that is ten basis points lower than the 10.0 percent DCF result I reported in my direct testimony.

Q. WHAT COST OF EQUITY DID YOU RECOMMEND IN EMPIRE'S 2012 RATE CASE?

A. I recommended a cost of equity equal to 10.6 percent in Empire's 2012 rate case.

Q. WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?

A. I have been asked by Empire to respond to the rebuttal testimonies filed in this proceeding by the Staff of the Missouri Public Service Commission ("Staff") and by Mr. Lance C. Schafer, who testifies on behalf of the Office of the Public Counsel.

II. RESPONSE TO STAFF REBUTTAL

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

A. I address Staff's claim that Empire's cost of equity has declined by more than the ten basis points implied by the difference between my 10.6 percent recommended cost of equity in Empire's 2012 case and my 10.5 percent average cost of equity in this proceeding.

Q. HOW DOES STAFF ARRIVE AT ITS CONCLUSION THAT EMPIRE'S COST OF EQUITY HAS DECLINED BY MORE THAN TEN BASIS POINTS FROM THE TIME OF EMPIRE'S 2012 CASE TO TIME OF THE CURRENT PROCEEDING?

A. Staff claims that it arrives at its conclusion by estimating the change in Empire's cost of equity from April 2012 to both May 2014 and December 2014. Staff estimates this change by comparing its calculation of Empire's cost of equity in April 2012 to its calculation of the Company's cost of equity in both May and December 2014 "using COE estimation methods Dr. Vander Weide used in both cases." (Staff Rebuttal at 1)

Q. STAFF CLAIMS THAT IT HAS USED YOUR COST OF EQUITY METHODS TO ESTIMATE THE CHANGE IN EMPIRE'S COST OF EQUITY FROM 2012 TO 2014. DID STAFF IMPLEMENT YOUR COST OF EQUITY METHODS IN THE SAME MANNER AS YOU IMPLEMENT THESE METHODS?

A. No. Staff's implementation of my cost of equity methods differs from my implementation in the choice of comparable companies and the choice of the interest rate to be used to estimate the interest rate component of the risk premium methods.

Q. DID YOU USE THE SAME COST OF EQUITY ESTIMATION METHODS IN THIS PROCEEDING AS IN EMPIRE'S 2012 CASE?

A. Yes. I estimated Empire's cost of equity in this proceeding based on cost of equity model results from applications of the DCF, risk premium, and CAPM methods.

Q. HAVE YOU EXAMINED STAFF'S DCF, EX ANTE RISK PREMIUM, AND EX POST RISK PREMIUM ESTIMATES OF THE CHANGE IN EMPIRE'S COST OF EQUITY FROM 2012 TO 2014?

A. Yes.

Q. HAVE YOU FOUND ANY DATA ERRORS IN STAFF'S DCF AND RISK PREMIUM STUDIES PRESENTED IN ITS REBUTTAL TESTIMONY?

A. Yes. I have found two significant data errors in Staff's DCF and risk premium studies. These errors cause Staff to greatly overestimate the change in Empire's cost of equity from 2012 to 2014. First, in Staff's 2012 DCF study, Staff failed to recognize that Duke Energy implemented a one-for-three stock split in 2012 that increased its dividend per share commensurate with the increase in stock price. However, Staff inadvertently used a post-split dividend along with a pre-split stock price in its calculation of Duke Energy's DCF result.[1] Second, Staff used incorrect interest rate information in its risk premium studies for both 2012 and 2014.

[1] There are additional errors in Staff's 2012 DCF calculations relating to incorrect dividend inputs, but the error in the Duke Energy DCF calculation has the greatest impact on Staff's erroneous average DCF result.

Q. WHAT IS THE NUMERICAL IMPACT OF STAFF'S FAILURE TO RECOGNIZE DUKE ENERGY'S 2012 ONE-FOR-THREE STOCK SPLIT ON STAFF'S DCF ESTIMATE OF EMPIRE'S COST OF EQUITY IN 2012?

A. Because of Staff's failure to recognize the Duke Energy stock split, Staff used a dividend per share in its DCF analysis that was three times the actual dividend value. As a result, Staff mistakenly calculated a DCF estimate for Duke Energy equal to 20.5 percent in its 2012 study, rather than the correct 9.7 percent DCF estimate Staff would have obtained if it had used the correct dividend data. This error alone incorrectly inflates Staff's 2012 average DCF result by fifty basis points. Staff should have reported an average DCF result in its 2012 study equal to 9.8 percent, not 10.3 percent.

Q. WHAT IMPACT DOES STAFF'S MISCALCULATION OF THE AVERAGE 2012 DCF COST OF EQUITY HAVE ON ITS CONCLUSION THAT EMPIRE'S DCF COST OF EQUITY DECLINED BY 80 BASIS POINTS FROM APRIL 2012 TO DECEMBER 2014?

A. Staff's miscalculation leads them to the false conclusion that Empire's DCF cost of equity declined by 80 basis points, when Staff's evidence, as corrected, indicates that the DCF cost of equity declined by 30 basis points (see JVW Surrebuttal Schedule 1).

Q. STAFF REPORTS A DCF RESULT FOR DECEMBER 2014 EQUAL TO 9.5 PERCENT. WHAT AVERAGE DCF COST OF EQUITY FOR DECEMBER 2014 DID YOU REPORT IN YOUR REBUTTAL TESTIMONY?

A. I reported an average DCF cost of equity at December 2014 equal to 9.9 percent.

Q. YOU NOTE THAT STAFF ALSO USES INCORRECT INTEREST IN ITS 2012 AND 2014 RISK PREMIUM STUDIES. HOW DO STAFF'S REPORTED INTEREST RATES COMPARE TO ACTUAL INTEREST RATES IN 2012 AND 2014?

A. In its 2012 risk premium studies, Staff uses a three-month average A-rated utility bond yield equal to 4.97 percent. However, the actual average interest rate for A-rated utility bonds for the three-month period ending April 2012 is 4.41 percent, 56 basis points lower than the rate used by the Staff. In its May 2014 risk premium studies, Staff uses a three-month A-rated average utility bond yield equal to 4.27 percent; however, the actual average interest rate for the three-month period ending May 2014 is 4.39 percent, 12 basis points higher than the rate used by Staff. (The correct monthly average A-rated utility bond yields are shown in my direct testimony, Schedule JVW-2.)

Q. WHAT EFFECT DOES STAFF'S USE OF AN INCORRECT INTEREST RATE THAT IS TOO HIGH IN 2012 AND TOO LOW IN 2014 HAVE ON STAFF'S ESTIMATE OF THE CHANGE IN EMPIRE'S EX ANTE RISK PREMIUM COST OF EQUITY FROM APRIL 2012 TO MAY 2014?

A. Staff's use of incorrect interest rates leads them to the false conclusion that the cost of equity has declined by 40 basis points from April 2012 to May 2014. If Staff had used actual A-rated utility bond yield averages for the specified time periods, they would have found that the ex ante risk premium cost of equity did not decline from April 2012 to May 2014 (see TABLE 1 below).

TABLE 1
STAFF'S EX ANTE RISK PREMIUM ANALYSES USING CORRECTED INTEREST RATES

EX ANTE RISK PREMIUM	INTERCEPT COEFFICIENT÷(1-SERIAL CORRELATION COEFFICIENT)		BOND COEFFICIENT		BOND YIELD		RISK PREMIUM		BOND YIELD		MODEL RESULT
Staff Calculation April 2012	8.22	-	-0.5863	*	4.97	=	5.31	+	4.97	=	10.3
Staff Calculation Corrected	8.22	-	-0.5863	*	**4.41**	=	5.63	+	**4.41**	=	**10.0**
Staff Calculation May 2014	8.16	-	-0.5864	*	4.27	=	5.66	+	4.27	=	9.9
Staff Calculation Corrected	8.16	-	-0.5864	*	**4.39**	=	5.59	+	**4.39**	=	**10.0**

Q. WHAT EFFECT DOES STAFF'S USE OF AN INCORRECT INTEREST RATE THAT IS TOO HIGH IN 2012 AND TOO LOW IN 2014 HAVE ON STAFF'S ESTIMATE OF THE CHANGE IN EMPIRE'S EX POST COST OF EQUITY FROM APRIL 2012 TO MAY 2014?

A. Staff's use of incorrect interest rates in its ex post risk premium estimate also leads them to the false conclusion that the cost of equity has declined by 40 basis points from April 2012 to May 2014. If Staff had used actual A-rated utility bond yield averages for the specified time periods, they would have found that the ex post risk premium cost of equity *increased* by 20 basis points from April 2012 to May 2014, not decreased by 40 basis points.

Q. DOES STAFF'S USE OF INCORRECT INTEREST RATES ON A-RATED UTILITY BONDS ALSO AFFECT ITS ESTIMATE OF THE CHANGE IN EMPIRE'S COST OF EQUITY FROM APRIL 2012 TO DECEMBER 2014?

A. Yes. Based on its incorrect information regarding the yield on A-rated utility bonds, Staff concludes that the cost of equity from the ex ante risk premium method declined by 50 basis points from April 2012 to December 2014, and that the cost of equity from the ex post risk premium method declined by 70 basis points over this period. If Staff had used correct rates on A-rated utility

bonds, it would have found that the cost of equity based on the ex ante and the ex post risk premium methods would have declined by only 20 basis points from April 2012 to December 2014.

Q. STAFF ARGUES THAT ITS ANALYSES INDICATE THAT EMPIRE'S COST OF EQUITY HAS DECLINED BY APPROXIMATELY 40 TO 80 BASIS POINTS FROM APRIL 2012 TO DECEMBER 2014 (SEE STAFF SCHEDULE SG-1). CORRECTING ONLY FOR THE DATA ERRORS IN STAFF'S ANALYSES, WHAT DOES STAFF'S EVIDENCE IN FACT INDICATE REGARDING THE CHANGE IN EMPIRE'S COST OF EQUITY FROM APRIL 2012 TO DECEMBER 2014?

A. Correcting only for the data errors in Staff's analyses, Staff would have found that the cost of equity may have declined by no more than 23 basis points (30 basis points on the DCF, 20 basis points ex ante risk premium, 20 basis points ex post risk premium equals an average of 23 basis points). However, even this estimate of change is likely overstated because Staff's analyses do not, in fact, use my cost of equity methods as implemented in my direct and rebuttal testimonies. I further note that Empire recommends that their rates be set based on a cost of equity equal to 10.15 percent, a value that is at the low end of the range of my cost of equity estimates.

III. RESPONSE TO MR. SCHAFER'S REBUTTAL

Q. WHAT TOPICS WILL YOU ADDRESS IN YOUR RESPONSE TO MR. SCHAFER'S REBUTTAL TESTIMONY?

A. I will address Mr. Schafer's rebuttal comments on my: (1) DCF analysis; (2) Risk Premium analyses; and (3) CAPM analyses.

1. DCF Analysis

Q. WHAT OBJECTIONS DOES MR. SCHAFER HAVE TO YOUR DCF ANALYSIS OF EMPIRE'S COST OF EQUITY?

A. Mr. Schafer objects to my proxy selection criteria, my use of a quarterly DCF model, and my use of what, in his opinion, are "stale" stock prices.

2. Proxy Selection Criteria

Q. HOW DO YOU APPLY THE DCF APPROACH TO ESTIMATE EMPIRE'S COST OF EQUITY?

A. I apply the DCF approach to the Value Line electric utilities shown in Schedule JVW-1 of my direct testimony and Schedule JVW-3 of my rebuttal testimony.

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

A. 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) 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 MR. SCHAFER HAVE ANY OBJECTIONS TO YOUR PROXY SELECTION CRITERIA?

A. Yes. Mr. Schafer claims that my proxy selection criteria are incomplete because they do not require that a proxy company "receive at least 70% of its revenues from regulated electricity." (Schafer at 6)

Q. WHAT COMPANIES DOES MR. SCHAFER BELIEVE SHOULD BE ELIMINATED FROM YOUR PROXY GROUP BECAUSE THEY DO NOT RECEIVE AT LEAST 70 PERCENT OF REVENUES FROM REGULATED ELECTRIC OPERATIONS?

A. Mr. Schafer believes that nine Value Line electric utilities, including Black Hills, CMS Energy, DTE Energy, Integrys Energy, SCANA Corp., Sempra Energy, UIL Holdings, Vectren Corp. and Wisconsin Energy, should not be included in a proxy group to estimate Empire's cost of equity because they did not receive at least 70 percent of regulated revenues from electric operations (see TABLE 2 below—data from Schafer at 7)

TABLE 2
PERCENT REVENUES FROM REGULATED UTILITY OPERATIONS FOR COMPANIES MR. SCHAFER RECOMMENDS ELIMINATING FROM PROXY GROUP

COMPANY	SCHAFER % REVENUES FROM REGULATED ELECTRIC OPERATIONS	SCHAFER % REVENUES FROM REGULATED GAS OPERATIONS
Black Hills	49%	44%
CMS Energy Corp.	62%	33%
DTE Energy	45%	16%
Integrys Energy	18%	38%
SCANA Corp.	53%	21%
Sempra Energy	32%	42%
UIL Holdings	48%	52%
Vectren Corp.	24%	36%
Wisconsin Energy	68%	30%

Q. DO YOU AGREE WITH MR. SCHAFER'S ARGUMENT THAT THE UTILITIES SHOWN ABOVE IN TABLE 2 SHOULD BE REMOVED FROM A PROXY GROUP BECAUSE THEY HAVE LESS THAN 70 PERCENT OF REVENUES FROM REGULATED ELECTRIC OPERATIONS?

A. No. Mr. Schafer implies that the companies shown above are not comparable in risk to Empire because they have less than 70 percent of revenues from

regulated electric operations. However, Mr. Schafer fails to recognize that regulated electric utility and regulated gas utility operations are generally comparable in risk. Further, Mr. Schafer's own data support the conclusion that the nine companies he recommends eliminating from the proxy group have an average of 79 percent of revenues from regulated electric and gas utility operations. More importantly, there is convincing evidence that investors view these nine Value Line electric utilities to be either comparable in risk to Empire, or less risky than Empire. For example, the average Value Line Safety Rank for these utilities is 2, and their average Standard & Poor's bond rating is BBB+ (see TABLE 3 below). In addition, each of these nine Value Line electric utilities has significantly higher market capitalization than Empire. As I discuss in my direct testimony, investors generally view higher market capitalization companies as having less risk than low market capitalization companies such as Empire.

TABLE 3
VALUE LINE SAFETY RANK, S&P BOND RATING, MARKET CAPITALIZATION, AND PERCENT REVENUES FROM REGULATED UTILITY OPERATIONS FOR COMPANIES MR. SCHAFER ELIMINATES FROM PROXY GROUP

COMPANY	SAFETY RANK	S&P BOND RATING	S&P BOND RATING (NUMERICAL)	MARKET CAP $ (MIL)	REVENUES FROM REGULATED ELECTRIC OPERATIONS	REVENUES FROM REGULATED GAS OPERATIONS	% REVENUES FROM REGULATED OPERATIONS
Black Hills	3	BBB	7	2,231	49%	44%	93%
CMS Energy Corp.	2	BBB+	7	9,743	62%	33%	95%
DTE Energy	2	BBB+	6	15,363	45%	16%	61%
Integrys Energy	2	A-	5	6,240	18%	38%	56%
SCANA Corp.	2	BBB+	6	8,700	53%	21%	74%
Sempra Energy	2	BBB+	6	27,269	32%	42%	74%
UIL Holdings	2	BBB	7	2,512	48%	52%	100%
Vectren Corp.	2	A-	5	3,904	24%	36%	60%
Wisconsin Energy	1	A-	5	12,092	68%	30%	98%
Average	**2**		**6**				**79%**
Empire	2	BBB	7	1,282			

Q. DID YOUR INCLUSION OF THESE NINE VALUE LINE ELECTRIC UTILITIES BIAS YOUR DCF RESULTS UPWARD?

A. No. In fact, the inclusion of these companies, which generally receive a high percentage of revenues from all regulated utility operations, is conservative. At the time of my direct testimony, the average DCF result for these electric utilities is 9.4 percent compared to the 10.0 percent average result for the proxy group; and the average DCF result for these electric utilities in the DCF analysis in my rebuttal testimony is 9.5 percent compared to the 9.9 percent average for the proxy group. Thus, the inclusion of the nine utilities in my DCF analysis is conservative.

Q. MR. SCHAFER ALSO ARGUES THAT YOUR PROXY GROUP SHOULD NOT HAVE INCLUDED CERTAIN COMPANIES BECAUSE OF MERGER AND ACQUISITION ACTIVITY. SPECIFICALLY, HE CONTENDS THAT YOU SHOULD NOT INCLUDE ANY COMPANY THAT HAS BEEN INVOLVED IN A "SIGNIFICANT MERGER OR ACQUISITION WITHIN THE LAST THREE YEARS." (SCHAFER AT 10) DO YOU AGREE?

A. No. I agree that a company should not be included in a proxy group if it is the subject of a merger offer that has not been completed because, in this case, there will be a mismatch between the information contained in the stock price component of the DCF cost of equity with the information contained in the growth component of the DCF cost of equity (see Vander Weide direct at 34). However, I disagree that there is a need to eliminate the acquiring company from the proxy group because the acquiring company's stock price and growth information are generally unaffected by the merger announcement until after a merger is completed. I also disagree with Mr. Schafer's criterion

that a company should be eliminated from a proxy group for a period as long as three years after completion of merger activity. Once a merger has been completed, stock prices and growth rates both reflect investors' expectations for the new company's future growth. Mr. Schafer provides no evidence that there is a mismatch in the growth and stock price information for companies that have completed mergers for the last three years. Mr. Schafer's recommendation serves only to limit the size of a proxy group without any benefit to the reliability of cost of equity estimates.

Q. WHAT COMPANIES DOES MR. SCHAFER ELIMINATE FROM YOUR COMPARABLE GROUP BECAUSE THEY HAVE BEEN INVOLVED IN MERGERS AND ACQUISITIONS OVER THE PAST THREE YEARS?

A. Mr. Schafer argues that my proxy group should not have contained eleven companies, including Cleco Corporation, Hawaiian Electric/NextEra Energy, Integrys Energy/Wisconsin Energy, Dominion, Duke, Northeast Utilities (now Eversource Energy), OGE Energy, SCANA Corporation, and TECO Holdings.

Q. DO YOU AGREE THAT YOU SHOULD NOT HAVE INCLUDED THESE COMPANIES IN YOUR PROXY GROUP?

A. No. First, as I discuss above and in my direct testimony, I do not believe it is necessary to exclude a company from a proxy group if it is the acquiring company because typically it is the company that is being acquired that is subject to stock price effects, not the acquiring company.

Second, several of these transactions were announced after I performed my studies; and the announcements were made after the period included in my capital market studies. It is difficult to understand why Mr. Schafer believes that I would have knowledge in advance of transactions that

had not yet been announced. For example, the acquisition of Cleco Corporation was announced October 20, 2014; the Hawaiian Electric acquisition by NextEra Energy was announced December 3, 2014; and the Integrys Energy acquisition by Wisconsin Energy was announced on June 23, 2014.

Q. DID YOUR INCLUSION OF COMPANIES THAT MR. SCHAFER CONTENDS SHOULD BE ELIMINATED FROM YOUR PROXY GROUP BIAS YOUR AVERAGE DCF RESULT UPWARD?

A. No. The eleven companies that Mr. Schafer wants to eliminate from my proxy group because of their involvement in mergers and acquisitions over the past three years have an average DCF result equal to 9.4 percent, lower than the average DCF result of 10.0 percent for the whole group.

Q. MR. SCHAFER ALSO SUGGESTS THAT PG&E SHOULD BE EXCLUDED FROM A PROXY COMPANY GROUP BECAUSE OF "SIGNIFICANT UNRESOLVED COSTS RELATING TO THE EXPLOSION OF A PIPELINE IN SAN BRUNO, CALIFORNIA." DO YOU AGREE?

A. No. Mr. Schafer's suggestion implies that PG&E is significantly more risky than the proxy group on average or Empire in particular. Mr. Schafer fails to recognize that Empire also faces the ongoing challenge of making substantial investments going forward of making substantial investments to comply with environmental requirements and that Empire is significantly smaller than PG&E.

3. Quarterly DCF Model

Q. WHY DOES MR. SCHAFER DISAGREE WITH YOUR USE OF A QUARTERLY DCF MODEL TO ESTIMATE EMPIRE'S COST OF EQUITY?

A. Mr. Schafer claims that my use of a quarterly DCF model is inappropriate because it "unreasonably assumes that dividends should be increased to account for the period of time remaining in the year after the investor receives them." (Schafer at 18)

Q. DO YOU AGREE WITH MR. SCHAFER'S ASSERTION THAT THE QUARTERLY DCF MODEL ASSUMES THAT THE ELECTRIC UTILITY MUST "COMPENSATE INVESTORS FOR THE PERIOD OF TIME REMAINING IN THE YEAR AFTER THE DIVIDEND HAS BEEN PAID TO THE INVESTOR" (SCHAFER AT 15)?

A. No. The quarterly DCF model is based on the underlying assumption of all DCF models that a company's stock price is equal to the present value of the expected stream of dividends investors expect to receive from their investment in the company. Because the present value of a stream of cash flows (that is, dividends) depends on both the timing and the magnitude of the expected cash flows, a company's stock price will also depend on both the timing and the magnitude of the expected cash flows. As I demonstrate in my direct testimony, Appendix 3, the quarterly DCF model must be used to estimate Empire's cost of equity because all my proxy companies pay dividends quarterly; and the quarterly DCF model is the only DCF model that appropriately equates the company's stock price to the present value of expected future dividends when dividends are paid quarterly. In contrast, Mr.

Schafer's annual DCF model will only satisfy the underlying assumption of all DCF models if dividends are paid annually.

Q. IS YOUR USE OF THE QUARTERLY DCF MODEL A SIGNIFICANT FACTOR IN EXPLAINING THE DIFFERENCE BETWEEN YOUR AND MR. SCHAFER'S ESTIMATES OF THE COST OF EQUITY?

A. No. For example, the difference between the average result of my quarterly DCF model presented in my direct testimony and the average result for a correctly applied annual model is only 6 basis points.

4. "Stale" Stock Prices

Q. MR. SCHAFER CRITICIZES YOUR DCF STUDIES BECAUSE, IN HIS OPINION, YOU USED STOCK PRICE DATA THAT WERE THREE TO SIX MONTHS OLD WHEN YOU PREPARED YOUR DIRECT TESTIMONY. IS HIS CRITICISM JUSTIFIED?

A. No. Empire asked me to prepare cost of equity studies for this proceeding in June 2014. I therefore based my studies on the most recent capital market data available at the time, the three-month period ending May 31, 2014. I provided testimony to the Company in early July, and the affidavit for my testimony was notarized on August 13, 2015. It is unreasonable for Mr. Schafer to expect that a rate filing could be prepared and finalized to incorporate up to the last minute data.

5. Forecasted Interest Rates

Q. MR. SCHAFER CRITICIZES YOUR USE OF FORECASTED INTEREST RATES BECAUSE HE ARGUES THAT FORECASTS "HAVE CHANGED SIGNIFICANTLY SINCE THE TIME" YOU FILED YOUR TESTIMONY.

(SCHAFER AT 22) HAS THE PATTERN OF INTEREST RATE FORECASTS "CHANGED SIGNIFICANTLY SINCE THE TIME" YOU FILED YOUR TESTIMONY?

A. No. Although the Interest rate forecasts have declined slightly since May 2014, interest rates are still expected to increase in the next several years (see TABLE 4 below).

TABLE 4
INTEREST RATE FORECASTS MAY 2014, DECEMBER 2014, AND FEBRUARY 2015

VALUE LINE SELECTION & OPINION, MAY 23, 2014	2015	2016	2017	2018	**AVERAGE**
Aaa-rated Corporate Forecast	4.80%	5.50%	5.80%	6.00%	**5.5%**
10-Year Treasury Note Forecast	3.30%	3.80%	4.30%	4.50%	**4.0%**
Value Line Selection & Opinion, November 20, 2015	2015	2016	2017	2018	
Aaa-rated Corporate Forecast	4.60%	5.20%	5.50%	5.50%	**5.2%**
10-Year Treasury Note Forecast	3.40%	3.80%	4.00%	4.00%	**3.8%**
Value Line Selection & Opinion, February 20, 2015	2016	2017	2018	2019	
Aaa-rated Corporate Forecast	4.60%	5.30%	5.50%	5.50%	**5.2%**
10-Year Treasury Note Forecast	3.20%	3.70%	4.00%	4.30%	**3.8%**
Energy Information Administration	2016	2017	2018	2019	
10-Year Treasury Note Forecast EIA	3.56%	4.03%	4.16%	4.15%	**4.0%**
AA Utility Bond Rate Forecast – EIA	5.75%	6.39%	6.58%	6.60%	**6.3%**

6. Risk Premium Analyses

Q. PLEASE DESCRIBE THE RISK PREMIUM METHOD OF ESTIMATING EMPIRE'S COST OF EQUITY.

A. The risk premium method is based on the principle that investors expect to earn a return on an equity investment in Empire that reflects a "premium" over and above the return they expect to earn on an investment in a portfolio of bonds. This equity risk premium compensates equity investors for the additional risk they bear in making equity investments versus bond investments.

Q. HOW DO YOU MEASURE THE REQUIRED RISK PREMIUM ON AN EQUITY INVESTMENT IN EMPIRE?

A. I use two methods to estimate the required risk premium on an equity investment in Empire. The first is called the ex ante risk premium method and the second is called the ex post risk premium method.

Q. DOES MR. SCHAFER AGREE WITH YOUR EX ANTE RISK PREMIUM ESTIMATE OF EMPIRE'S COST OF EQUITY?

A. No. Mr. Schafer has three disagreements with my ex ante risk premium estimates of Empire's cost of equity. First, he argues that I should have recognized that Value Line updated its forecast of the yield to maturity on long-term bonds in November 2014. Second, he argues that I should have used the average of Value Line's interest rate forecasts for the years 2015 to 2018 rather than using the interest rate forecast for 2018. Third, he argues that my estimate of the required risk premium is based on a relatively small set of electric utilities.

Q. WAS VALUE LINE'S NOVEMBER 2014 FORECAST OF LONG-TERM INTEREST RATES AVAILABLE AT THE TIME YOU PREPARED YOUR DIRECT TESTIMONY?

A. No. At the time I prepared my direct testimony, Value Line's most recent interest rate forecast was dated May 23, 2014.

Q. DID VALUE LINE LOWER ITS FORECAST OF LONG-TERM INTEREST RATES IN THE NOVEMBER 21, 2014 EDITION OF VALUE LINE'S SELECTION & OPINION?

A. Yes. Value Line reduced its forecast of long-term interest rates by 20 to 50 basis points compared to the May 2014 forecasts.

Q. DOES THE RISK PREMIUM COMPONENT OF THE EX ANTE RISK PREMIUM APPROACH DEPEND ON THE LEVEL OF INTEREST RATES?

A. Yes. As I discuss in my direct testimony, Appendix 3, 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.

Q. MR. SCHAFER ALSO CRITICIZES YOUR EX ANTE RISK PREMIUM ANALYSIS BECAUSE IT IS BASED ON A RELATIVELY SMALL SET OF TEN TO TWENTY ELECTRIC UTILITIES. IS MR. SCHAFER'S CRITICISM JUSTIFIED?

A. No. Mr. Schafer fails to recognize that in my ex ante risk premium analysis, as I explain in my direct testimony, I use the Moody's group of twenty-four electric companies as my proxy group because they were a widely followed group of electric utilities, and using this constant group greatly simplifies the data collection task required to estimate the ex ante risk premium over the nearly 15-year period of my study (see Vander Weide direct testimony, Appendix 3). Simplifying the data collection task is desirable because the ex ante risk premium approach requires that the DCF model be estimated for every company in every month of the study period.

Mr. Schafer also fails to recognize that as time passes, in each month of the analysis different companies may be included or may drop out due to mergers and acquisitions or due to lack of data required to perform a DCF

analysis (for example, lack of long-term growth estimate, or reduction or elimination of dividend payment). Given the number of mergers in the electric utility industry over the past fifteen years, it is not surprising that there are now fewer companies in the sample than in earlier periods.

Q. YOU NOTE THAT MR. SCHAFER CRITICIZES YOUR EX ANTE RISK PREMIUM ANALYSIS BECAUSE IT INCLUDES ONLY TEN TO TWENTY ELECTRIC UTILITIES. HOW MANY ELECTRIC UTILITIES DOES MR. SCHAFER RECOMMEND INCLUDING IN HIS DCF ANALYSIS?

A. Mr. Schafer recommends including only eight electric utilities in his DCF analysis.

Q. IS IT REASONABLE FOR MR. SCHAFER TO CRITICIZE YOUR EX ANTE ANALYSIS BECAUSE IT IS BASED ON A GROUP OF TEN TO TWENTY ELECTRIC UTILITIES, WHEN HIS OWN RECOMMENDED PROXY GROUP CONTAINS ONLY EIGHT UTILITIES?

A. No.

Q. WHAT IS THE MAJOR BENEFIT OF YOUR EX ANTE RISK PREMIUM STUDY IN DETERMINING A COMPANY'S APPROPRIATE ALLOWED RETURN ON EQUITY?

A. The major benefit of my ex ante risk premium study is that it provides information on the relationship between required risk premium and changes in interest rates. When interest rates are declining, the impact of lower interest rates on a company's cost of equity cannot be simply measured by the change in interest rates—the estimate of the cost of equity must also include the change in the risk premium that occurs when interest rates change. My studies indicate that the required risk premium changes in the opposite

direction of interest rate changes, and that the change is more than half of the magnitude of the change interest rates.

Q. MR. SCHAFER ATTEMPTS TO UPDATE YOUR EX ANTE RISK PREMIUM COST OF EQUITY USING A FORECASTED INTEREST RATE EQUAL TO 5.3 PERCENT. WHAT EX ANTE RISK PREMIUM RESULT DOES HE REPORT?

A. Mr. Schafer reports an ex ante risk premium cost of equity equal to 9.7 percent.

Q. WHAT RISK PREMIUM DID MR. SCHAFER USE TO OBTAIN HIS 9.7 PERCENT RESULT?

A. Mr. Schafer used the 4.4 percent risk premium I report in my direct testimony. However, Mr. Schafer fails to recognize that the 4.4 percent ex ante risk premium depends on the level of the interest rate, which in my direct testimony was 6.4 percent, not 5.3 percent.

Q. HAS MR. SCHAFER CORRECTLY ESTIMATED THE EX ANTE RISK PREMIUM COST OF EQUITY?

A. No. Mr. Schafer fails to recognize that the ex ante risk premium changes in the opposite direction of the change in the bond yield. Using a bond yield equal to 5.3 percent and the ex ante risk premium coefficients in my direct testimony, Mr. Schafer should have obtained a result 70 basis points higher, 10.4 percent (see TABLE 5 below).

TABLE 5
EX ANTE RISK PREMIUM COST OF EQUITY ESTIMATE USING MR. SCHAFER'S 5.3 PERCENT INTEREST RATE

EX ANTE RISK PREMIUM	INTERCEPT COEFFICIENT÷(1-SERIAL CORRELATION COEFFICIENT)		BOND COEFFICIENT		BOND YIELD		RISK PREMIUM		BOND YIELD		MODEL RESULT
Schafer Bond Yield	8.16	-	-0.5864	*	5.30	=	5.05	+	5.30	=	10.4

7. CAPM Analysis

Q. WHAT CONCERNS DOES MR. SCHAFER HAVE REGARDING YOUR CAPM ANALYSIS OF EMPIRE'S COST OF EQUITY?

A. Mr. Schafer cites three concerns. First, he argues that my statement that the CAPM underestimates the cost of equity is unfounded. Second, he argues that my forecasted risk-free rate is inappropriate. Third, he argues that my risk premium estimates are exaggerated. (Schafer at 30)

Q. WHY DOES MR. SCHAFER BELIEVE THAT YOUR STATEMENT THAT THE CAPM UNDERESTIMATES THE COST OF EQUITY IS UNFOUNDED?

A. Mr. Schafer asserts that my statement is unfounded because my supporting evidence relates to CAPM estimates based on unadjusted betas, whereas his and my CAPM studies are based on adjusted betas.

Q. DO YOU AGREE WITH MR. SCHAFER'S ASSERTION THAT YOUR EVIDENCE DOES NOT SUPPORT YOUR CONCLUSION THAT THE CAPM UNDERESTIMATES THE COST OF EQUITY FOR COMPANIES WITH BETAS LESS THAN 1.0?

A. No. Mr. Schafer fails to recognize that my cited studies find that the difference between the forecasted returns of the CAPM and actual stock market returns are far larger than can be explained by the difference between adjusted and unadjusted betas. In short, my cited studies demonstrate that the CAPM underestimates the cost of equity for companies with betas less than 1.0, regardless of whether adjusted or unadjusted betas are used in the CAPM.

Q. DO YOU AGREE WITH MR. SCHAFER'S ARGUMENT THAT YOUR FORECASTED RISK-FREE RATE IS INAPPROPRIATE?

A. No. My forecasted risk-free rate was certainly appropriate at the time of my direct evidence in this proceeding, and the impact of the relatively small change in the forecasted risk-free rate that has occurred since the time of my direct testimony is mitigated by the evidence that the required risk premium moves in the opposite direction of any change in the risk-free rate.

Q. MR. SCHAFER ALSO ARGUES THAT YOUR ESTIMATES OF THE RISK PREMIUM COMPONENT OF THE CAPM ARE "EXAGGERATED." (SCHAFER AT 32) WHY DOES HE BELIEVE YOUR RISK PREMIUM ESTIMATES ARE "EXAGGERATED"?

A. Mr. Schafer believes that my risk premium estimates are "exaggerated" because, in my historical CAPM analysis, I calculate the risk premium by subtracting the income return on long-term Treasury bonds from the historical return on the S&P500; and in my DCF-based CAPM, I calculate the estimated DCF return of only those companies in the S&P500 that pay dividends.

Q. WHY DO YOU CALCULATE YOUR HISTORICAL RISK PREMIUM BY SUBTRACTING THE INCOME RETURN ON LONG-TERM TREASURY BONDS, RATHER THAN THE TOTAL RETURN ON BONDS, FROM THE HISTORICAL RETURN ON THE S&P500?

A. I use this procedure because the CAPM requires an estimate of the risk-free rate, and the income return on long-term Treasury bonds is the only return on Treasury bonds that is risk free. The total return on bonds is highly risky because it reflects capital gains and losses as well as interest.

Q. MR. SCHAFER ARGUES THAT THE "INCOME RETURN IS NOT A VIABLE OPTION FOR INVESTORS" BECAUSE THEY "MUST PURCHASE THE SECURITY IF THEY WANT TO TAKE ADVANTAGE OF THE COUPON PAYMENT." (SCHAFER AT 32) DO YOU AGREE?

A. No. Because long-term government bonds are generally sold at par, investors can earn the income return on the bond by holding the bond to maturity.

Q. DO YOU AGREE WITH MR. SCHAFER'S ARGUMENT THAT YOUR DCF-BASED CAPM RISK PREMIUM IS "EXAGGERATED" BECAUSE YOU ESTIMATE THE DCF RETURN ONLY FOR THOSE COMPANIES IN THE S&P500 THAT PAY DIVIDENDS?

A. No. Mr. Schafer fails to recognize that a DCF return cannot be calculated for a company that does not pay a dividend because, under the DCF assumption of constant growth, companies with zero dividends will always have zero dividends.

Q. DOES YOUR EXCLUSION OF COMPANIES THAT DO NOT PAY DIVIDENDS CAUSE YOUR RISK PREMIUM ESTIMATE TO BE "EXAGGERATED"?

A. No.

Q. DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY?

A. Yes, it does.

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SURREBUTTAL SCHEDULE JVW-1
STAFF 2012 DISCOUNTED CASH FLOW ANALYSIS
WITH CORRECTED DIVIDEND PAYMENTS

LINE	COMPANY	CORRECTED MOST RECENT QUARTERLY DIVIDEND (D_0)	STOCK PRICE P_0	FORECAST OF FUTURE EARNINGS GROWTH	STAFF DCF MODEL RESULT FILED, INCORRECT DIVIDENDS	CORRECTED DCF MODEL RESULT
1	Alliant Energy	0.450	43.208	6.23%	10.7%	10.7%
2	Amer. Elec. Power	0.470	38.380	3.19%	8.4%	8.4%
3	Centerpoint Energy	0.203	19.320	3.94%	8.4%	8.3%
4	CMS Energy Corp.	0.240	21.872	6.06%	10.6%	10.6%
5	Consolidated Edison	0.605	58.328	4.06%	8.5%	8.5%
6	Dominion Resources	0.528	50.820	5.16%	9.5%	9.5%
7	DTE Energy	0.588	54.735	4.50%	9.2%	9.1%
8	Duke Energy	0.250	21.042	4.54%	20.5%	9.7%
9	G't Plains Energy	0.213	20.075	5.48%	10.1%	10.1%
10	Northeast Utilities	0.294	36.212	6.72%	10.3%	10.1%
11	NorthWestern Corp.	0.370	35.062	5.50%	10.1%	10.0%
12	OGE Energy	0.393	52.648	6.23%	7.8%	9.4%
13	PG&E Corp.	0.455	42.457	2.37%	6.9%	6.9%
14	Pinnacle West Capital	0.525	47.345	5.73%	10.6%	10.6%
15	PNM Resources	0.145	18.273	12.42%	15.9%	15.8%
16	Portland General	0.265	25.020	4.96%	9.6%	9.6%
17	SCANA Corp.	0.495	44.910	4.38%	9.1%	9.1%
18	Sempra Energy	0.600	59.987	5.38%	9.3%	9.1%
19	Southern Co.	0.490	44.827	5.36%	10.0%	10.0%
20	TECO Energy	0.220	17.710	5.39%	10.8%	10.7%
21	UIL Holdings	0.432	34.740	4.53%	9.9%	9.9%
22	Westar Energy	0.330	27.873	5.77%	10.9%	10.9%
23	Xcel Energy Inc.	0.260	26.522	5.12%	9.4%	9.4%
24	**Staff 2012 Average**				10.3%	**9.8%**

AFFIDAVIT OF JAMES H. VANDER WEIDE

STATE OF NORTH CAROLINA)
) ss
COUNTY OF DURHAM)

On the 19th day of March, 2015, 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
James H. Vander Weide

Subscribed and sworn to before me this 19th day of March, 2015.

Sandra W. Burpeau
Notary Public

My commission expires: 05-30-2018

SANDRA W. BURPEAU NOTARY PUBLIC DURHAM COUNTY, NC