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Witness:	*Shana Griffin*
Sponsoring Party:	*MoPSC Staff*
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MISSOURI PUBLIC SERVICE COMMISSION

COMMISSION STAFF DIVISION
OPERATIONAL ANALYSIS

FINANCIAL ANALYSIS UNIT

REBUTTAL TESTIMONY

OF

SHANA GRIFFIN

THE EMPIRE DISTRICT ELECTRIC COMPANY

CASE NO. ER-2016-0023

Jefferson City, Missouri
May, 2016

** **Denotes Highly Confidential Information** ** **NP**

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REBUTTAL TESTIMONY

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Q. Please state your name.

A. My name is Shana Griffin.

Q. Are you the same Shana Griffin whose direct testimony in this case appears in Section VII, Rate of Return, of the Staff's Revenue Requirement Cost of Service Report ("COS Report") filed in this proceeding on March 25, 2016?

A. Yes, I am.

Q. What is the purpose of your rebuttal testimony?

A. The purpose of my rebuttal testimony is to respond to the direct testimony of Dr. James H. Vander Weide on rate-of-return ("ROR"). Dr. Vander Weide is testifying in this proceeding on behalf of The Empire District Electric Company ("Empire" or "Company").

EXECUTIVE SUMMARY OF REBUTTAL TESTIMONY

Q. Please summarize your rebuttal testimony.

A. I critique Dr. Vander Weide's comparable groups, his exclusive use of projected earnings per share ("EPS") growth rates for purposes of calculating his constant-growth discounted cash flow ("DCF") analysis, and his use of forecasted yields for his risk premium and Capital Asset Pricing Model ("CAPM") cost of common equity ("COE") estimates. I also provide an update to Staff's CAPM to include 2015 capital market return information that was not available to Staff at the time Staff filed its COS Report.

DR. VANDER WEIDE'S COST OF COMMON EQUITY FOR EMPIRE

Q. What COE did Dr. Vander Weide estimate for Empire in this case?

A. He estimates Empire's COE is in the range of 9.90 percent to 10.6 percent based on his analysis of a proxy group. Empire witness Mr. Bryan S. Owens requests that Empire be allowed a return on common equity ("ROE") of 9.90% for purposes of developing Empire's overall revenue requirement in this case. Mr. Owens explains in his direct testimony that a requested ROE of 9.90 percent is "fair, reasonable and appropriate" [1] in this case because this case is essentially a "true-up" of Empire's last rate case, Case No. ER-2014-0351. Mr. Owens explains that the ROE proposed by the Company is within the range recommended by the parties in the last case and is also consistent with Dr. Vander Weide's supporting testimony in this case. Mr. Owens indicates he believes this makes Empire's requested ROE "fair, reasonable and appropriate."

Q. How did Dr. Vander Weide determine his COE estimate range?

A. Dr. Vander Weide's estimated COE range of 9.90 percent to 10.6 percent is based on the following COE estimation methods: (1) DCF; (2) ex-ante risk premium; and (3) ex-post risk premium. He estimated the COE using his historical CAPM and his DCF-Based CAPM, but did not factor these results into his overall recommendation. Dr. Vander Weide estimated Empire's COE to be 9.90 percent using his DCF method, 10.6 percent using his ex-ante risk premium method, and 10.1 percent using his ex-post risk premium method (mid-point of his range of 9.8 to 10.4 percent).

Q. What are Staff's concerns about certain companies from Dr. Vander Weide's proxy group that he used in his DCF analysis?

[1] Owens Direct, p. 7, l. 8.

A. The objective of selecting a comparable group is to find companies that are as "pure play" as possible. "Pure play" means that the comparable company is confined, as much as possible, to the operation that is the subject of the cost-of-capital study. To meet this objective, Staff only includes in its comparable group companies classified as "Regulated"[2] by the Edison Electric Institute ("EEI"), at least 50% of plant from electric utility operations, at least 25% of electric plant from generation assets and at least 80% of income from regulated utility operations,. Dr. Vander Weide does not use screening criteria similar to Staff's to select his comparable companies. Instead of using pre-screening criteria to eliminate incomparable companies, Dr. Vander Weide eliminates companies from his proxy group after he performs a DCF analysis based on whether the results are consistent with parameters he decides should be used to render a DCF implied COE as unreliable.

Q. Would any of the companies included in Dr. Vander Weide's proxy group be eliminated if he had executed his DCF analysis as of the end of March 2016?

A. Yes. Based on his proxy group criteria of not including any companies that are subject of a merger offer that has not been completed, three of the companies in his proxy group would be eliminated. Empire District Electric Company, TECO Energy, Inc. and ITC Holdings, Corp. are all subjects of announced mergers.

Q. Excluding these companies from his DCF model's result, what would his COE result be?

A. 9.63% as compared to his result of 9.90%.

Q. What growth rate does Dr. Vander Weide use in his DCF analysis?

[2] EEI's "Regulated" classification means 80%+ of the company's total assets are regulated.

A. He relies exclusively on equity analysts' projected five-year EPS compound annual growth rate ("CAGR") forecasts.

Q. Is that problematic?

A. Yes. Exclusive reliance on analysts' projected five-year EPS CAGR currently produces upwardly-biased COE results.

Q. Why?

A. The DCF method requires constant and sustainable growth rates. Equity analysts' long-term EPS CAGR forecasts are based on nearer-term expectations (five years or less). Such CAGR are not likely to be sustainable if not consistent with long-term industry growth rates, which Staff provided in its COS Report. Dr. Vander Weide's average of projected CAGR in EPS growth rates was 5.83%. Dr. Vander Weide's constant-growth DCF analysis assumes that his proxy group's DPS will constantly grow at this rate indefinitely into the future. It is unlikely that rational investors would consider an average projected growth rate of 5.83% to be sustainable in the long term. This 5.83% is not sustainable due to the fact that it is higher than long-term projected economic growth rates provided by the Congressional Budget Office ("CBO"), or any other respected source for that matter, which was 4.1% compounded annually for the period 2016 through 2026.

Q. On page 29 of Dr. Vander Weide's direct testimony regarding his regression study comparing the historical growth rates with the average I/B/E/S analysts' forecasts, he states:

> These results are consistent with those found by Cragg and Malkiel, the early major research in this area (John G. Cragg and Burton G. Malkiel, Expectations and the12 Structure of Share Prices, University of Chicago Press, 1982). These results are also consistent with the hypothesis that investors use analysts'

forecasts, rather than historically-oriented growth calculations, in making stock buy and sell decisions.

Is this a legitimate reason to exclusively use analysts' projections of future EPS growth in estimating a constant growth rate for the single-stage DCF method?

A. No. First, it is important to consider the inherent contradiction caused by using equity analysts' 5-year EPS growth rate forecasts as the constant growth rate of dividends in the single-stage DCF, but ignoring the rest of the analysis performed by the equity analysts. It is naïve to assume that investors would simply take values from the internet without researching the supporting analysis when making investment decisions. While this assumption may allow for expediency in estimating the COE, investors do not make investment decisions with expediency as the priority. Staff has reviewed numerous equity research reports and it has NEVER seen an analyst estimate a fair price for a utility stock by making this naïve assumption. If the equity analysts that provide professional investment advice based on in-depth analysis do not utilize their own growth rates in this manner, then it is completely illogical to make this assumption for purposes of estimating the COE. If authorizing an allowed ROE based on the COE is not considered a fair and reasonable return, then the time and effort devoted to rate-of-return testimony would be better spent on determining an appropriate margin over the COE that would be fair in setting the allowed ROE.

ROR witnesses often cite various academic studies to support their position that investors naïvely assume that dividends can grow in perpetuity at the same rate as equity analysts' estimates of the 5-year CAGR in EPS. Although Staff believes the fact that the very equity analysts that provide these forecasts do not make this same assumption when valuing utility stocks disproves this conclusion, it is important to understand the true conclusion of some of these studies. One of the studies often cited to support the use of equity analysts'

5-year EPS growth rate forecasts in the DCF is the very same article cited by Dr. Vander Weide, "Expectations and the Structure of Share Prices," by Burton G. Malkiel and John G. Cragg. The conclusion of this academic study was that equity analysts' expectations had a greater influence on stock prices compared to simple extrapolations of historical financial data. Staff believes this conclusion is logical considering the vast amounts of resources dedicated to the discipline of securities analysis. However, Staff is not sure how subsequent studies concluded that the results of this study somehow translated into a proof that investors use 5-year EPS CAGR forecasts as a constant growth rate in the single-stage DCF methodology. In fact, Cragg and Malkiel did not even use the DCF valuation model when testing their hypothesis regarding the influence of analysts' projections on stock prices. It is more plausible to conclude that, because investors rely on equity analysts' expectations, they rely on their investment recommendations (e.g. buy, sell or hold). Equity analysts' investment recommendations are based on their assessment of the intrinsic value of a given stock. Analysts' methodologies for estimating a fair price varies, but most at least assess the current price-to-forward earnings ratios both on a consensus basis and on the analysts' own estimates. If the analyst believes the company can grow its earnings faster than the consensus and/or the company deserves a higher price-to-earnings ("p/e") ratio than the consensus, then the analyst will expect a higher return than the consensus. In Staff's experience, this is the primary purpose for providing both absolute EPS forecasts and EPS growth rate forecasts. It allows investors to estimate a potential justified p/e multiple.

Cragg and Malkiel specifically indicated the following in their study:

> We would not argue that these estimates necessarily give an accurate picture of general market expectations. It would, however, seem reasonable to suggest that they are representative of opinions of some

> of the largest professional investment institutions and that they may not be wholly unrepresentative of more general expectations. **Since investors consult professional investment institutions in forming their own expectations, individuals' expectations may be strongly influenced – and so reflect – those of their advisers.** That several of our participating firms find it worthwhile to publish these projections and provide them to their customers provides prima facie evidence that a certain segment of the market places some reliance on such information in forming its own expectations. Also, insofar as other security analysts and investors follow the same sorts of procedures as those used by our sample analysts in forming expectations, general investors' expectations would resemble those of analysts. Consequently, these predictions may well serves as acceptable proxies for general expectations and surely seem worthy of detailed analysis. (emphasis added)

Equity analysts often use the dividend discount model ("DDM") to estimate a fair price to pay for the stock. The DDM is synonymous with the DCF in utility ratemaking settings. The DCF in utility ratemaking is simply solving for the required return/COE variable. In valuation, the goal is to solve for the fair price of the stock. Consequently, if equity analysts are of value to their clients, then the stock prices will reflect their estimates of future dividends and the required return on these dividends. Consequently, if one accepts the conclusion that security analysts' expectations influence investors, which is the conclusion made by Malkiel and Cragg, then this means that stock prices reflect the COE used by these very same analysts. Staff's experience has been that investment analysts use equity discount rates, i.e. the COE, much lower than COE estimates provided by ROR witnesses in utility rate cases. Staff has consistently cited examples in past rate cases that indicate equity analysts use equity discount rates in the 7% to 8% range. Considering the continued current low long-term interest rate environment and high utility p/e ratios, Staff thinks it is probable that utility

equity analysts are using costs of equity at least as low as in the 6% range to value utility stocks. However, this does not mean that these equity analysts expect commissions to allow an ROE equivalent to the market-implied COE. If allowed ROEs were set equal to the COE, this would cause downward pressure on the stock price of a company whose earnings rely primarily on the regulated utility operations. This is the case because utility stock prices currently reflect investors' expectations of regulators continuing to allow returns in the 9% to 10% range.

Considering the fact that the Cragg and Malkiel study is the foundation for other studies that are cited to support the use of 5-year EPS forecasts in the constant-growth DCF, it is important to understand how at least one of the authors has estimated required returns on stocks in his past studies and how he estimates required returns currently. In his May 1979 study, "The Capital Formation Problem in the United States," Malkiel estimated the required returns on the Dow Jones Industrial Average by using Value Line growth rates for the first five years. This growth rate was then reduced over time to that of the expected real growth rate of the economy, which was 3.6% at the time.[3]

In a January 5, 2012, editorial in the *Wall Street Journal*, "Where to Put Your Money in 2012," Burton G. Malkiel provided his opinion on the long-run return expectations for U.S. equities. Malkiel simplified his approach by simply indicating that earnings and dividends in the market have grown at an approximate 5% rate over the long run. He simply added this long-run growth rate to the current approximate 2% dividend yield on the U.S. stock market to arrive at a long-run return estimate of 7% for the U.S. stock market.

[3] The use of a real GDP growth rate for perpetual growth is consistent with Goldman Sachs' valuation approach discussed in Case No. ER-2011-0028.

If one were to add the same growth rate to the current dividend yield on the Standard & Poors' ("S&P") 500 of 2.18% as of March 31, 2016,[4] this results in an expected return of 7.18%. This compares to the 5.37% projected return on the S&P 500 estimated by professional forecasters in the First Quarter 2016 *Survey of Professional Forecasters.* If Malkiel believed investors projected returns based on 5-year EPS forecasts on the U.S. stock market, then a projected return for the S&P 500 as of today would be 13.38% (2.18% dividend yield plus 11.20% 5-year EPS growth forecasts for the S&P 500). He did not. While Malkiel and Cragg's studies certainly concluded that security analysts' estimates have an impact on share prices they did *not* conclude that investors would assume security analysts' 5-year EPS growth rate forecasts are a proxy for perpetual growth.

The focus on earnings growth rates is understandable considering that most security analysts' stock predictions are based on a multiple of p/e ratios, but security analysts provide this information to evaluate potential p/e ratios as they compare to consensus p/e ratios. The ability of the analyst to accurately project future earnings and justified p/e ratios will determine whether that analyst is successful. Consequently, the focus on analysts' EPS projections is understandable in this context.

Q. You indicated that equity analysts are probably using COE rates that are at least as low as in the 6% range. Do you have any evidence to support your testimony?

A. Yes. **_____

_____

_____

_____

[4] http://www.spindices.com/indices/equity/sp-500.

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1 _____
2 _____
3 _____ **

4 Q. Do you have any concerns about Dr. Vander Weide's ex-ante risk premium
5 approach?

6 A. Yes. Dr. Vander Weide's estimated risk premium is based on his application
7 of the DCF to an index of "electric" utility companies. Therefore, his risk premium is only as
8 reliable as his DCF COE estimates are and the comparability of this index to Empire.
9 The index Dr. Vander Weide used includes companies that are not comparable to Empire.
10 Dominion Resources, Inc., Exelon Corporation, First Energy, Corp., and PPL Corporation are
11 not classified by Edison Electric Institute ("EEI") as regulated utilities. According to EEI,
12 this means that these companies do not have regulated assets as compared to total assets of
13 greater than 80%.

14 Q. Dr. Vander Weide used forecasted bond yields in his risk premium and CAPM
15 methods in this case. Is that appropriate?

16 A. No. In this case, using projected yields overstates the current COE. Basing
17 risk premium COE estimates on projected bond yields is similar to basing a DCF estimated
18 COE on projected stock prices. Dr. Vander Weide did not use projected stock prices in his
19 DCF analysis because current stock prices reflect investors' expectations regarding changes in
20 interest rates as well as company-specific risks. Current bond prices, and therefore current
21 bond yields, already reflect investors' expectations concerning future interest rates.
22 Therefore, the current bond yield does not need to be adjusted.

[5] ** _____ **

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Q. What is Dr. Vander Weide's reason for using forecasted yields rather than current yields?

A. Dr. Vander Weide states on page 36 of his direct testimony,

> I use a forecasted yield to maturity on A-rated utility bonds rather than a current yield to maturity 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 extraordinary 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. Is there a consensus long-term interest rates will increase in the near future?

A. No. In fact, according to a recent WSJ article "German Yields Near Zero,"[6] published on April 6, 2016:

> ... Lower bond yields in the U.S., Germany, the U.K. and Japan reflect a situation that has been confounding many investors and policy makers for years: the resistance of tepid global demand for goods, subpar growth and low inflation to increasingly expansive monetary policy.
>
> 'This has been the conundrum for central banks,' said Nick Gartside, international chief investment officer of global fixed income at J.P. Morgan Asset Management, which had $1.7 trillion in assets under management at end of December. **'Just because yields are low doesn't mean they can't go lower.'...**

[6] Min Zeng, "German Yields Near Zero," *Wall Street Journal,* April 6, 2016, p. C1-C2.

> ...Michael Collins senior portfolio manager at Prudential Fixed Income, which manages $575 billion, said **bond bears betting on rising long-term interest rates 'have been wrong for years, if not decades.'** (emphasis added)

Q. Has Dr. Vander Weide's method of projecting bond yields proven to bias his COE estimates?

A. Yes. In Empire's 2012 case, Dr. Vander Weide used Value Line's 5.3% projected AAA corporate bond yield from Value Line's February 24, 2012, Selection & Opinion to impute his estimate of a 2015 projected yield for A-rated utility bonds of 6.5%. He added the 6.5% forecasted yield to his 4.4% risk premium estimate for a final cost of equity estimate of 10.9% using his ex-ante risk premium method. Experience has proven why one should be cautious about using estimated bond yields for purposes of estimating the COE for purposes of setting the allowed ROE. The actual average Moody's AAA corporate bond yield for January, February and March 2015 was 3.57%, which is 1.73% lower than the projections Dr. Vander Weide used to justify his higher COE estimates in 2012.[7] The actual average Moody's A-rated utility bond yields for January, February and March 2015 was approximately 3.66%, which is 2.84% lower than the projections Dr. Vander Weide used to justify his higher COE estimates in 2012.

Q. What would Dr. Vander Weide's risk premium COE estimates have been if he had used the average yield to maturity on A-rated utility bonds for June 2015, the month that Dr. Vander Weide used for his forecasted yields, rather than those forecasted bond yields?

[7] Mergent Bond Record.

A. According to Mergent Bond Record, the average yield to maturity on A-rated utility bonds in June 2015 was 4.39%.[8] If Dr. Vander Weide had used this yield, his estimated risk premium would be 5.56 % for his ex-ante risk premium method. However, this estimate is inflated due to the fact that Dr. Vander Weide's ex-ante risk premium methodology is based on estimating the risk premium using his DCF COE estimates for his proxy group and these estimates are based on the assumption that the constant growth of his utility proxy group can be equivalent to the projected 5-year CAGR in EPS.

In a 2011 Bernstein Research report, Hugh Wynne, a utility equity analyst for Bernstein Research, provided information for the period 1974 to 2010 showing that 68% of the total return for S&P Electric Utilities came from dividends, while only 32% was from capital gains.[9] However, Dr. Vander Weide's DCF estimates assume that regulated electric utility stocks will generate more returns in capital gains (approximately 57.5%)[10] than in dividend yield. Considering that the dividend yield from utility stocks has historically produced 2/3 of the total return on utility stocks,[11] and the fact that dividend yields for electric utilities are currently approximately 3.8%, a 1.9% capital appreciation rate in utility stocks would be consistent with past experience. This translates into an approximate expected return of 5.7% for utility stocks, which is quite logical and rational in the current low-yield environment. Any electric utility COE analysis that assumes that investors expect a constant growth rate of 5.59%, which Dr. Vander Weide does in the DCF analysis used for purposes of

[8] Mergent Bond Record's bonds have maturities as close as possible to 30 years; they are dropped from the list if their remaining life falls below 20 years, if their ratings change.

[9] Bernstein Research: "U.S. Utilities: Our Dividend Growth Model Identifies Utilities Poised to Pay More", May 20, 2011.

[10] Approximately 4.50% average dividend of proxy group divided by 10.60% average expected return on equity estimate of his proxy group equals approximately 42.5% return due to dividend yield.

[11] Hugh Wynne, Francois D. Broquin, Saurabh Singh, "U.S. Utilities: Our Dividend Growth Model Identifies Utilities Poised to Pay More," May 20, 2011, Bernstein Research.

his ex-ante risk premium model, defies the basic characteristics of electric utility stocks and should not be relied upon.

However, for sake of illustration, Staff will quantify the impact of only making an adjustment to reflect the use of the actual bond yields rather than projected bond yields. Adding the 4.39% utility bond yield to the risk premium of 5.56%, results in an ex-ante COE estimate of 9.95%, as compared to the 10.6% estimate using projected yields. If you add the 4.39% to Dr. Vander Weide's ex-post risk premium method's estimated risk premium of 3.9% to 4.5%, the COE estimate for this method would change to 8.29% to 8.89%, with a midpoint of 8.59%, as compared to the midpoint of 10.1% using projected yields.

Q. What would Dr. Vander Weide's CAPM estimates have been if he had used the average yield to maturity on 20-year Treasury bonds for June 2015 to estimate the risk free rate for his CAPM methods using an electric utility Beta of 0.70?

A. According to the St. Louis Federal Reserve's website, the average yield to maturity on 20-year Treasury bonds for June 2015 was 2.85%. Using 2.85% as the risk-free rate in Dr. Vander Weide's Historical CAPM method implies a COE of 7.8%. If Dr. Vander Weide had used 2.85% for the risk-free rate in his DCF-Based CAPM method, the implied COE would have been 9.3%.

Q. What is Dr. Vander Weide's estimated risk premium for his DCF-Based CAPM analysis?

A. It is 7.55%.

Q. Is that risk premium estimate reasonable?

A. No. This equity risk premium estimate is far beyond what investment advisors use for purposes of asset and stock valuation analyses. For instance, Duff & Phelps[12] published a report "Client Alert Duff & Phelps Increases U.S. Equity Risk Premium Recommendation to 5.5%, Effective January 2016" on March 16, 2016. The report states:

> Duff & Phelps Increases U.S. Equity Risk Premium Recommendation to 5.5% Effective January 31, 2016
>
> • Equity Risk Premium: Increased from 5.0% to 5.5%
> • Risk-Free Rate: 4.0% (normalized)
> • Base U.S. Cost of Equity Capital: 9.5% (4.0% + 5.5%)
>
> The Equity Risk Premium (ERP) is a key input used to calculate the cost of capital within the context of the Capital Asset Pricing Model (CAPM) and other models. The ERP is used as a building block when estimating the cost of capital (i.e., "discount rate", "expected return", "required return"), and is an essential ingredient in any business valuation, project evaluation, and the overall pricing of risk. Duff & Phelps regularly reviews fluctuations in global economic and financial conditions that warrant periodic reassessments of the ERP.
>
> Based on current market conditions, Duff & Phelps is increasing its U.S. ERP recommendation from 5.0% to 5.5%, when developing discount rates as of January 31, 2016 and thereafter until such time that evidence indicates equity risk in financial markets has materially changed and new guidance is issued.

Duff & Phelps makes it clear that the 5.5% U.S. ERP recommendation is to be matched with a normalized risk-free rate of 4.0%. They also conclude that a "reasonable long-term estimate of the normal or unconditional ERP for the U.S. is in the range of 3.5% to 6.0%."

Q. Staff stated in its COS Report that it would update its CAPM with 2015 capital market return information when it was available. What are Staff's updated CAPM results?

[12] Duff & Phelps is a leading global financial advisory investment banking firm.

A. They are the same as the results Staff provided in the COS Report. There was not a significant enough change in the spread between earned returns on large cap stocks and long-term government bonds to cause a change in the earned market risk premium.

SUMMARY AND CONCLUSIONS

Q. What points in your rebuttal testimony should the Commission focus on?

A. The Commission should recognize that Dr. Vander Weide's COE estimates are all overstated. His risk premium and CAPM COE estimates are overstated because he uses forecasted interest rates. His single-stage DCF model COE estimate is overstated because he relied exclusively on equity analysts projected five-year earnings per share compound annual growth rate forecasts. Staff provided practical corroborating information that supports Staff's opinion that the COE is much lower than Dr. Vander Weide's estimates based on theory.

Q. Does this conclude your rebuttal testimony?

A. Yes, it does.

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of The Empire District Electric Company's Request for Authority to Implement a General Rate Increase for Electric Service	)))	Case No. ER-2016-0023

AFFIDAVIT OF SHANA GRIFFIN

STATE OF MISSOURI	)	
	)	ss.
COUNTY OF COLE	)	

COMES NOW SHANA GRIFFIN and on her oath declares that she is of sound mind and lawful age; that she contributed to the foregoing REBUTTAL TESTIMONY; and that the same is true and correct according to her best knowledge and belief.

Further the Affiant sayeth not.

Shana Griffin
SHANA GRIFFIN

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 28th day of April, 2016.

D. SUZIE MANKIN
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: December 12, 2016
Commission Number: 12412070

D Suzie Mankin
Notary Public