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FLORIDA PUBLIC SERVICE COMMISSION

In the Matter of:

DOCKET NO. 160186-EI

PETITION FOR RATE INCREASE BY GULF POWER COMPANY.
_______________________________/

DOCKET NO. 160170-EI

PETITION FOR APPROVAL OF 2016 DEPRECIATION AND DISMANTLEMENT STUDIES, APPROVAL OF PROPOSED DEPRECIATION RATES AND ANNUAL DISMANTLEMENT ACCRUALS AND PLANT SMITH UNITS 1 AND 2 REGULATORY ASSET AMORTIZATION, BY GULF POWER COMPANY.
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VOLUME 4
(Pages 760 through 1025)

PROCEEDINGS: HEARING

COMMISSIONERS PARTICIPATING: CHAIRMAN JULIE I. BROWN
COMMISSIONER ART GRAHAM
COMMISSIONER RONALD A. BRISÉ
COMMISSIONER DONALD J. POLMANN

DATE: Monday, March 20, 2017

TIME: Commenced at 1:00 p.m.
Concluded at 2:53 p.m.

PLACE: Betty Easley Conference Center
Room 148
4075 Esplanade Way
Tallahassee, Florida

REPORTED BY: LINDA BOLES, CRR, RPR
Official FPSC Reporter
(850) 413-6734

APPEARANCES: (As heretofore noted.)

I N D E X

WITNESSES

EXHIBITS

NUMBER:	ID.	ADMTD.

No exhibits in this volume

DIRECT TESTIMONY

OF

J. RANDALL WOOLRIDGE

On Behalf of the Office of Public Counsel

Before the

Florida Public Service Commission

Docket No. 160186-EI

I. INTRODUCTION AND SCOPE OF TESTIMONY

Q. PLEASE STATE YOUR FULL NAME, ADDRESS, AND OCCUPATION.

A. My name is J. Randall Woolridge, and my business address is 120 Haymaker Circle, State College, PA 16801. I am a Professor of Finance and the Goldman, Sachs & Co. and Frank P. Smeal Endowed University Fellow in Business Administration at the University Park Campus of the Pennsylvania State University. I am also the Director of the Smeal College Trading Room and President of the Nittany Lion Fund, LLC. A summary of my educational background, research, and related business experience is provided in Appendix A.

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

A. I have been asked by the Florida Office of Public Counsel (“OPC”) to provide an opinion as to the appropriate cost of capital for Gulf Power Company ("Gulf Power" or "Company") and to evaluate Gulf’s rate of return testimony in this proceeding.

Q. HOW IS YOUR TESTIMONY ORGANIZED?

A. First, I review my cost of equity recommendation for Gulf Power, and review the primary areas of contention between Gulf Power's rate of return position and my position. Second, I provide an assessment of capital costs in today's capital markets. Third, I discuss the selection of a proxy group of electric utility companies for estimating the market cost of equity for Gulf Power. Fourth, I discuss the capital structure of the Company. Fifth, I provide an overview of the concept of the cost of equity capital, and then estimate the equity cost rate for Gulf Power. Finally, I critique the Company's rate of return analysis and testimony.

II. SUMMARY OF TESTIMONY

A. Rate of Return Recommendation

Q. PLEASE REVIEW YOUR RECOMMENDATIONS REGARDING THE APPROPRIATE RATE OF RETURN FOR GULF POWER.

A. I have reviewed the Company's proposed capital structure and overall cost of capital. I have adjusted the Company's proposed capital structure to be more reflective of the capitalizations of other comparable electric utility companies. My proposed capital structure, from investor-provided capital, includes 1.67% short-term debt, 42.80% long-term debt, 5.53% Preferred stock, and 50.00% common equity. I have applied the Discounted Cash Flow Model ("DCF") and the Capital Asset Pricing Model ("CAPM") to two proxy groups of publicly-held electric utility companies. My DCF and CAPM analyses indicate that an equity cost rate in the range of 7.90% to 9.00% is appropriate for Gulf Power. The DCF results for the two proxy groups are 8.50% to 9.00%. Because I give primary weight to the DCF results, and given the recent rise in interest rates, I believe that an equity cost rate of 8.875% is appropriate.

Using my capital structure and debt and equity cost rates, I recommend an overall rate of return or cost of capital from investor-provided capital for Gulf Power of 6.71%. This is summarized in Exhibit JRW-1.

Q. PLEASE REVIEW THE COMPANY'S PROPOSED CAPITAL STRUCTURE AND PROPOSED RATE OF RETURN.

A. Gulf witness Susan D. Ritenour provides the Company's proposed capital structure and senior capital cost rates, and Gulf witness Dr. Vander Weide recommends a common equity cost rate for Gulf Power. Gulf Power's recommended capital structure from investors' sources includes 1.56% short-term debt, 40.13% long-term debt, 5.19% preferred stock, and 53.12% common equity. I demonstrate that Gulf's proposed capital structure includes a common equity ratio above the common equity ratios in the capital structures of both my Electric Proxy Group as well as the Vander Weide Proxy Group. Gulf Power uses short-term and long-term debt cost rates of 3.02% and 4.40%, a preferred stock cost rate of 6.15% and an equity cost rate of 11.0%.

Q. WHAT COMPRISES A UTILITY'S "RATE OF RETURN"?

A. A company's overall rate of return consists of three main categories: (1) capital structure (*i.e.*, ratios of short-term debt, long-term debt, preferred stock and common equity); (2) cost rates for short-term debt, long-term debt, and preferred stock; and (3) common equity cost, otherwise known as Return on Equity ("ROE").

Q. WHAT IS A UTILITY'S ROE INTENDED TO REFLECT?

A. An ROE is most simply described as the allowed rate of profit for a regulated company. In a competitive market, a company's profit level is determined by a variety of factors, including the state of the economy, the degree of competition a company faces, the ease of entry into its markets, the existence of substitute or complementary products/services, the company's cost structure, the impact of technological changes, and the supply and demand for its services and/or products. For a regulated monopoly, the regulator determines the level of profit available to the public utility. The United States Supreme Court established the guiding principles for determining an appropriate level of profitability for regulated public utilities in two cases: (1) *Bluefield* and (2) *Hope*.[1] In those cases, the Court recognized that the fair rate of return on equity should be: (1) comparable to returns investors expect to earn on other investments of similar risk; (2) sufficient to assure confidence in the company's financial integrity; and (3) adequate to maintain and support the company's credit and to attract capital.

Thus, the appropriate ROE for a regulated utility requires determining the market-based cost of capital. The market-based cost of capital for a regulated firm represents the return investors could expect from other investments, while assuming no more and no less risk. The purpose of all of the economic models and formulas in cost

[1] *Federal Power Commission v. Hope Natural Gas Co*., 320 U.S. 591 (1944) ("*Hope*") and *Bluefield Water Works and Improvement Co. v. Public Service Commission of West Virginia*, 262 U.S. 679 (1923) ("*Bluefield*").

of capital testimony (including those presented later in my testimony) is to estimate, using market data of similar-risk firms, the rate of return equity investors require for that risk-class of firms in order to set an appropriate ROE for a regulated firm.

B. Gulf Power's Last Rate Case

Q. PLEASE REVIEW THE SETTLEMENT IN GULF POWER'S LAST RATE CASE.

A. On December 19, 2013, the Florida Public Service Commission issued Order No. PSC-13-0670-S-EI in Docket No.130140-EI.[2] The Order Approved a Settlement between Gulf Power, OPC, the Florida Industrial Power Users Group ("FIPUG"), the Federal Executive Agencies ("FEA"), and Wal-Mart Stores East, LP and Sam's East, Inc. ("Wal-Mart"). With respect to ROE, the parties approved the following:[3]

> For purposes of this Agreement, the phrase "authorized ROE" shall mean the midpoint authorized return on common equity ("ROE") and the phrase · "authorized ROE range" shall mean the range that starts 100 basis points below the midpoint and extends to 100 basis points above the midpoint as determined in this Agreement. Subject to the adjustment provision in paragraph 2(b), Gulf Power's authorized ROE shall continue to be 10.25%, which is the same as the midpoint ROE set by the Commission in Order No. PSC-12-0179-FOF-EI issued on April 3, 2012 in Docket No. 110138-EI, which was based on the record in that case. Gulf Power's authorized ROE and authorized ROE range shall be used for all regulatory purposes including, but not limited to, cost recovery clauses, earnings surveillance reporting, the calculation of the Company's Allowance for Funds Used During Construction ("AFUDC") rate and

[2] Docket No.130140-EI, *Petition for Rate Increase by Gulf Power Company*, Order No. PSC-13-0670-S-EI, (December 19, 2013).
[3] Stipulation and Settlement, Docket No.130140-EI, *Petition for Rate Increase by Gulf Power Company*, (November 2, 2013).

associated amounts of AFUDC in accordance with Rule 25-6.0141, F.A.C., and the implementation or operation of the negotiated provisions of this Agreement.

The Parties agree that the average 30-year United States Treasury Bond yield rate of 3.7947% as reported by Bloomberg Finance on November 15, 2013 (the date the Parties reached agreement on the general terms for this Agreement) on their free website, the link to which is www.bloomberg. com/quote/USGG30YR: IND shall serve as the benchmark yield rate used in the adjustment mechanism set forth in this paragraph 2(b). The documentation of the benchmark yield rate set forth above is attached hereto as Exhibit A. If at any time during the term, the average 30-year United States Treasury Bond yield rate for any period of six (6) consecutive months is at least 75 basis points greater than the benchmark yield rate ("the Trigger"), Gulf Power's authorized ROE shall be increased by 25 basis points from the Trigger Effective Date defined below for and through the remainder of the Term , and for any period in which the Company's rates continue in effect after June 30, 2017 until the Commission issues a final order in a future proceeding changing the Company's rates and its authorized ROE. The new authorized ROE resulting from the foregoing adjustment will therefore be 10.50%, and the associated new authorized ROE range will extend from 9.50% to 11.50%. The new authorized ROE and associated ROE range resulting from operation of the foregoing adjustment may be referred to as the "Revised Authorized ROE" and the "Revised Authorized ROE Range" in this Agreement. The Trigger shall be calculated by summing the reported 30-year United States Treasury Bond yield rates for each day over any six• month period, e.g., January 1, 2014 through July 1, 2014, or March 17, 2014 through September 17, 2014, for which rates are reported, and dividing the resulting sum by the number of reporting days in such period. The effective date of the Revised Authorized ROE ("Trigger Effective Date") shall be the first day of the month following the day in which the Trigger is reached. If the Trigger is reached and the Revised Authorized ROE becomes effective, except as otherwise specifically provided in this Agreement, Gulf Power's Revised Authorized ROE and Revised Authorized ROE Range shall be used for the remainder of the Term for all regulatory purposes including, but not limited to, cost recovery clauses, earnings surveillance reporting, AFUDC, and the implementation or operation of the negotiated provisions of this Agreement. The same Bloomberg Finance source referenced above in this paragraph 2(b) shall be used to monitor the yield rate. In the event that this source is no longer available during the Term, the Parties will negotiate in good faith to identify a reasonable alternative

> publication as an appropriate source for the 30-year United States Treasury Bond yield rate data to be used in calculating the Trigger as described in this Agreement.

Therefore, the Settlement provided for a 10.25% ROE and included a Trigger mechanism. The Trigger mechanism would adjust the ROE by 25 basis points if 30-year U.S. Treasury yield was 75 basis points above the reference yield of 3.7947% for six consecutive months. This was the 30-year Treasury yield as reported by Bloomberg Finance on November 15, 2013.

Q. HAVE YIELDS IN THE MARKETS HIT THE TRIGGER RATE SINCE THE COMPANY'S LAST CASE?

A. No. Since the Company's last rate case, 30-year Treasury yield has dropped, despite predictions to the contrary. This is highlighted in Figure 1 below.

The Federal Reserve has made several monetary policy moves in the last three years. The Federal Reserve ended its Quantitative Easing III ("QEIII") bond buying program in 2014, which was aimed at providing liquidity to the long-term bond markets. In December 2015, the Federal Reserve increased its target rate for federal funds from 0 – 0.25 percent to0.25 – 0.50 percent. However, due primarily to slow economic growth and low inflation, the 30-year Treasury yield declined from 3.79% at the time of Gulf's last case to below 2.50% in the summer of 2016. This yield has since increased to the 3.0% range, with the majority of that increase coming in response to the unexpected election of Donald Trump as U.S. President. The increase in rates is generally attributed to the prospects of new fiscal, monetary, and regulatory policies that could increase economic growth and potentially increase inflation. The Federal Reserve subsequently raised the federal funds target rate at its December 13-14 meeting from 0.50 – 0.75 percent.

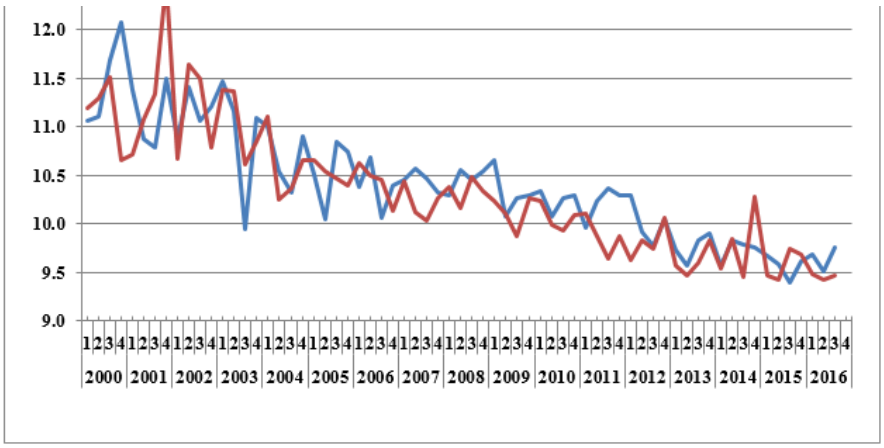
Figure 1
30-Year Treasury Yield
2013-2016
Source: https://www.bloomberg.com/quote/USGG30YR:IND

Q. HAVE THE AUTHORIZED ROES FOR ELECTRIC UTILITIES INCREASED OR DECREASED SINCE THE 2013 RATE CASE?

A. The average authorized ROEs for electric utilities have decreased since the Company's last rate case. As shown in Figure 2, these authorized ROEs for electric utilities have declined from an average of 10.01% in 2012, to 9.8% in 2013, to 9.76% in 2014, to 9.58% in 2015, and are at9.64% in the first half of 2016 according to

Regulatory Research Associates.[4]

Figure 2
Authorized ROEs for Electric Utility and Gas Distribution Companies
2000-2016



Q. HAS GULF POWER'S CREDIT RATING CHANGED SINCE THE LAST RATE CASE?

A. Yes. Moody's upgraded the long-term issuer credit rating for Gulf Power in January 2014 from A3 to A2. This suggests that the investment risk of Gulf Power is lower than at the time of the Company's last rate case.

C. Primary Rate of Return Issues

Q. PLEASE INITIALLY ADDRESS THE DIFFERENCES IN THE ALTERNATIVE ASSUMPTIONS REGARDING CAPITAL MARKET

[4] *Regulatory Focus*, Regulatory Research Associates, July, 2015. The electric utility authorized ROEs exclude the authorized ROEs in Virginia, which include generation adders.

CONDITIONS BETWEEN YOUR EQUITY COST RATE ANALYSES AND DR. VANDER WEIDE'S.

A. Dr. Vander Weide and I have different opinions regarding capital market conditions. Dr. Vander Weide's analyses and ROE results and recommendations reflect the assumption of higher interest rates and capital costs. I review current market conditions and conclude that interest rates and capital costs are at low levels and are likely to remain low for some time. On this issue, I show that the economists' forecasts of higher interest rates and capital costs, which come from sources used by Dr. Vander Weide, have been consistently wrong for a decade.

Q. PLEASE REVIEW THE DIFFERENCES IN THE ESTIMATION OF GULF'S EQUITY COST RATE.

A. Both Dr. Vander Weide and I have applied the DCF and the CAPM approaches to a proxy group of publicly-held companies. Dr. Vander Weide and I both employ relatively large and similar proxy groups of electric utilities. I have applied the DCF and CAPM approaches to his proxy group, as well as my Electric Proxy Group, which include thirty electric utilities. Dr. Vander Weide has also used a Risk Premium ("RP") approach to estimate an equity cost rate for Gulf Power. In terms of the DCF approach, the two primary problems with Dr. Vander Weide's approach are (1) his inappropriate adjustment to reflect the quarterly payment of dividends; and (2) most significantly, Dr. Vander Weide's exclusive reliance on the forecasted earnings per share ("EPS") growth rates of Wall Street analysts. I provide empirical evidence from studies that demonstrate the long-term earnings growth rates of Wall Street analysts are overly optimistic and upwardly-biased. Consequently, in developing a DCF growth rate, I have reviewed both historic and projected growth rate measures and have evaluated growth in dividends, book value, and earnings per share.

The RP and CAPM approaches require an estimate of the base interest rate and the equity risk premium. In both approaches, Dr. Vander Weide's base interest rate is above current market rates. However, the major area of disagreement involves our significantly different views on the alternative approaches to measuring the equity risk premium, as well as the magnitude of equity risk premium. Dr. Vander Weide's equity risk premiums are excessive and do not reflect current market fundamentals. As I highlight in my testimony, there are three methodologies for estimating an equity risk premium – historic returns, surveys, and expected return models. I have used a market risk premium of 5.5%, which: (1) employs three different approaches to estimating a market premium; and (2) uses the results of many studies of the market risk premium. As I note, my market risk premium reflects the market risk premiums: (1) determined in recent academic studies by leading finance scholars; (2) employed by leading investment banks and management consulting firms; and (3) found in surveys of companies, financial forecasters, financial analysts, and corporate CFOs. Dr. Vander Weide uses a historical equity risk premium which is based on historic stock and bond returns. He also calculates an expected risk premium in which he applies the DCF approach to the S&P 500 and public utility stocks. I provide evidence that risk premiums based on historic stock and bond returns are subject to empirical errors, which result in upwardly biased measures of expected equity risk premiums. I also demonstrate that Dr. Vander Weide's projected equity risk premiums, which use analysts' EPS growth rate projections, include unrealistic assumptions regarding future economic and earnings growth and stock returns. Additionally, I show that Dr. Vander Weide's market and equity risk premiums are well above the market and equity risk premiums used in the real world of finance.

Finally, Dr. Vander Weide makes two unwarranted adjustments in developing an equity cost rate. In his DCF, RP, and CAPM approaches, Dr. Vander Weide makes an unnecessary adjustment for flotation costs. This increases his equity cost rate recommendation by 20 basis points. However, he has not identified any flotation costs for Gulf Power. In addition, Dr. Vander Weide also makes an overall financial risk or leverage adjustment to his equity cost rate estimate. This adjustment is based on the leverage difference between the market value capital structures of his proxy group and Gulf Power's book value capital structure, which is used for ratemaking purposes. The adjustment increases his equity cost rate estimate by 60 basis points. In my testimony, I discuss why this adjustment is not appropriate and highlight the fact that it produces illogical results.

Q. PLEASE SUMMARIZE THE PRIMARY DIFFERENCES BETWEEN YOUR POSITION AND THE COMPANY'S POSITION REGARDING THE COMPANY'S COST OF CAPITAL.

A. In the end, the most significant areas of disagreement in measuring the Company's cost of capital are:

(1) The Company's proposed capital structure includes a higher common equity ratio and therefore lower financial risk than other electric utilities.

(2) Dr. Vander Weide's analyses and ROE results and recommendations are based on the assumption of higher interest rates and capital costs. I review current market conditions and conclude that interest rates and capital costs are at low levels and are likely to remain low for some time.

(3) Dr. Vander Weide's DCF equity cost rate estimates, in particular the fact that: (a) he adjusts for the quarterly payment of dividends and flotation costs; and; (b) he has relied exclusively on the overly optimistic and upwardly biased EPS growth rate forecasts of Wall Street analysts and *Value Line.*

(4) The projected interest rates and market or equity risk premiums in Dr. Vander Weide's CAPM and RP approaches are inflated and are not reflective of market realities or expectations.

(5) Dr. Vander Weide has made inappropriate flotation cost and leverage adjustments to his DCF, CAPM, and RP equity cost rates.

III. CAPITAL COSTS IN TODAY'S MARKETS

A. Historic Interest Rates and Capital Costs

Q. PLEASE DISCUSS LONG-TERM INTEREST RATES AND CAPITAL COSTS IN U.S. MARKETS.

A. Long-term capital cost rates for U.S. corporations are a function of the required returns on risk-free securities plus a risk premium. The risk-free rate of interest is the yield on long-term U.S. Treasury bonds. The yields on 10-year U.S. Treasury bonds from 1953 to the present are provided on Panel A of Exhibit JRW-2. These yields peaked in the early 1980s and have generally declined since that time. These yields fell to below 3.0% in 2008 as a result of the financial crisis. In 2012, the yields on 10-year Treasuries declined from 2.5% to 1.5% as the Federal Reserve initiated the third stage of its quantitative easing program ("QEIII") to support a low interest rate environment. These yields increased to 3.0% as of December 2013 on speculation of a tapering of the Federal Reserve's QEIII policy. The Federal Reserve ended the QEIII program in 2015 and increased the federal funds rate in December 2015. Nonetheless, due to slow economic growth and low inflation, the 10-year Treasury yield subsequently declined to 1.5% in 2016. The 10-year Treasury yield has since increased to the 2.5% range, with the majority of that increase coming in response to the November 8, 2016 U.S. presidential election.

Panel B on Exhibit JRW-2 shows the differences in yields between ten-year Treasuries and Moody's Baa-rated bonds since the year 2000. This differential primarily reflects the additional risk premium required by bond investors for the risk associated with investing in corporate bonds as opposed to obligations of the U.S. Treasury. The difference also reflects, to some degree, yield curve changes over time. The Baa rating is the lowest of the investment grade bond ratings for corporate bonds. The yield differential hovered in the 2.0% to 3.5% range until 2005, declined to 1.5% until late 2007, and then increased significantly in response to the financial crisis. This differential peaked at 6.0% at the height of the financial crisis in early 2009 due to tightening in credit markets, which increased corporate bond yields, and the "flight to quality," which decreased Treasury yields. The differential subsequently declined and bottomed out at 2.4%. The differential has since increased to the 3.25% range.

Q. YOU MENTIONED RISK PREMIUM BEING REFLECTED AS THE DIFFERENTIAL BETWEEN THE TEN-YEAR TREASURIES AND MOODY'S BAA-RATED BONDS. PLEASE EXPLAIN WHAT THE RISK PREMIUM IS AND HOW IT AFFECTS YOUR ANALYSIS.

A. The risk premium is the return premium required by investors to purchase riskier securities. The risk premium required by investors to buy corporate bonds is observable based on yield differentials in the markets. The market risk premium is the return premium required to purchase stocks as opposed to bonds. The market or equity risk premium is not readily observable in the markets (like bond risk premiums) because expected stock market returns are not readily observable. As a result, equity risk premiums must be estimated using market data. There are alternative methodologies to estimate the equity risk premium, and these alternative approaches and equity risk premium results are subject to much debate. One way to estimate the equity risk premium is to compare the mean returns on bonds and stocks over long historical periods. Measured in this manner, the equity risk premium has been in the 5% to 7% range.[5] However, studies by leading academics indicate that the forward-looking equity risk premium is actually in the 4.0% to 6.0% range. These lower equity

[5] See Exhibit JRW-11, p. 5-6.

risk premium results are in line with the findings of equity risk premium surveys of CFOs, academics, analysts, companies, and financial forecasters.

Q. PLEASE REVIEW THE INTEREST RATES ON LONG-TERM UTILITY BONDS.

A. Panel A of Exhibit JRW-3 provides the yields on A-rated public utility bonds. These yields peaked in November 2008 at 7.75% and henceforth declined significantly. These yields declined to below 4.0% in mid-2013, and then increased with interest rates in general to the 4.85% range as of late 2013. These rates dropped significantly during 2014 due to economic growth concerns and were bottomed out below 4.0% in the first quarter of 2015. They increased with interest rates in general to 4.4% in the summer of 2015, and then declined to below 4.0% due to continued low economic growth and inflation in 2016. However, they have once again increased to above 4.0% with the increase in interest rates since the presidential election.

Panel B of Exhibit JRW-3 provides the yield spreads between long-term A-rated public utility bonds relative to the yields on 20-year U.S. Treasury bonds. These yield spreads increased dramatically in the third quarter of 2008 during the peak of the financial crisis and have decreased significantly since that time. The yield spreads between 20-year U.S. Treasury bonds and A-rated utility bonds peaked at 3.4% in November 2008, then declined to about 1.5% in the summer of 2012 as investor return requirements declined. The differential has gradually increased in recent years, and is now close to 2.0%.

A. Capital Market Conditions

Q. **WHY ARE CAPITAL MARKET CONDITIONS AND THE OUTLOOK FOR INTEREST RATES AND CAPITAL COSTS IMPORTANT IN THIS CASE?**

A. As discussed above, a company's rate of return is its overall cost of capital. Capital costs, including the cost of debt and equity financing, are established in capital markets and reflect investors' return requirements on alternative investments based on risk and capital market conditions. These capital market conditions are a function of investors' expectations concerning many factors, including economic growth, inflation, government monetary and fiscal policies, and international developments, among others. In the wake of the financial crisis, much of the focus in the capital markets has been on the interaction of economic growth, interest rates, and the actions of the Federal Reserve (the "Fed"). In addition, as illustrated in the United Kingdom's June 24, 2016 decision to leave the European Union ("BREXIT"), capital markets and global and capital costs are impacted by global events.

Q. WHAT IS DR. VANDER WEIDE'S ASSESSMENT OF THE CAPITAL MARKETS ENVIRONMENT?

A. As discussed on pages 37-38 of his testimony, Dr. Vander Weide employs forecasts of interest rates in his CAPM and risk premium approaches. Dr. Vander Weide argues that market data and economists' projections indicate that long-term interest rates are going to increase.

Q. PLEASE EXPLAIN YOUR CONCERNS REGARDING DR. VANDER WEIDE'S CONCLUSION OF HIGHER LONG-TERM INTEREST RATES.

A. Over the last decade, there have been continual forecasts of higher long-term interest rates. However, these forecasts have proven to be wrong. For example, after the announcement of the end of the QE III program in 2014, all the economists in Bloomberg's interest rate survey forecasted interest rates would increase in 2014, and <u>100% of the economists were wrong</u>. According to the *Market Watch* article:[6]

> The survey of economists' yield projections is generally skewed toward rising rates — only a few times since early 2009 have a majority of respondents to the Bloomberg survey thought rates would fall. But the unanimity of the rising rate forecasts in the spring was a stark reminder of how one-sided market views can become. It also teaches us that economists can be universally wrong.

Two other financial publications have produced studies on how economists consistently predict higher interest rates, and yet they have been wrong. The first publication, entitled "How Interest Rates Keep Making People on Wall Street Look Like Fools," evaluated economists' forecasts for the yield on ten-year Treasury bonds at the beginning of the year for the last ten years.[7] The results demonstrated that economists consistently predict that interest rates will go higher, and interest rates have not fulfilled those predictions.

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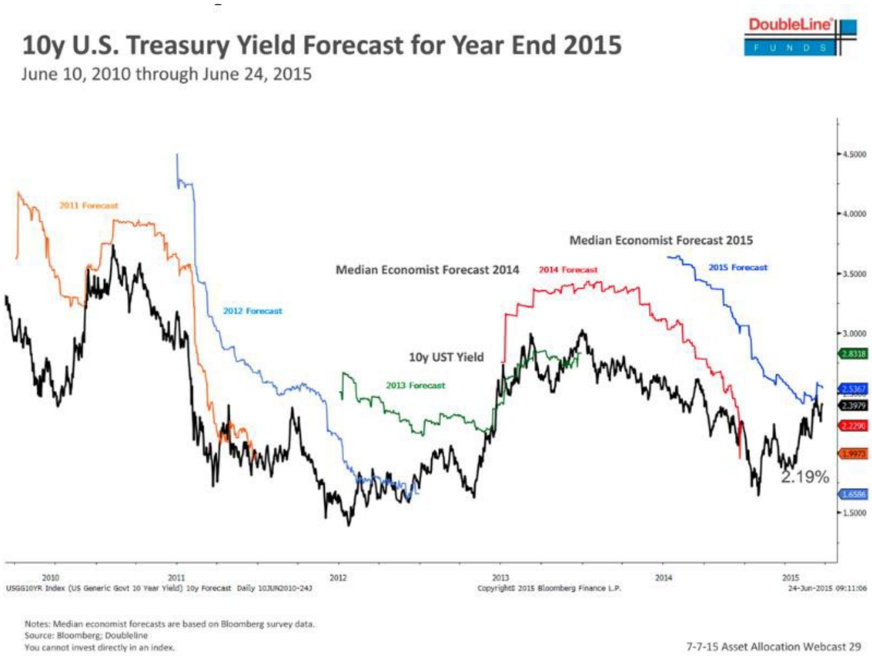
[6] Ben Eisen, "Yes, 100% of economists were dead wrong about yields, *Market Watch*," October 22, 2014. Perhaps reflecting this fact, *Bloomberg* reported that the Federal Reserve Bank of New York has stopped using the interest rate estimates of professional forecasters in the Bank's interest rate model due to the unreliability of those forecasters' interest rate forecasts. See Susanne Walker and Liz Capo McCormick, "Unstoppable $100 Trillion Bond Market Renders Models Useless," *Bloomberg.com* (June 2, 2014). http://www.bloomberg.com/news/2014-06-01/the-unstoppable-100-trillion-bond-market-renders-models-useless.html.

[7] Joe Weisenthal, "How Interest Rates Keep Making People on Wall Street Look Like Fools," Bloomberg.com, March 16, 2015. http://www.bloomberg.com/news/articles/2015-03-16/how-interest-rates-keep-making-people-on-wall-street-look-like-fools.

The second study tracked economists' forecasts for the yield on ten-year Treasury bonds on an ongoing basis from 2010 until 2015.[8] The results of this study, which was entitled "Interest Rate Forecasters are Shockingly Wrong Almost All of the Time," are shown in Figure 3 and demonstrate how economists continually forecast that interest rates are going up, yet they do not. Indeed, as Bloomberg has reported, economists' continued failure in forecasting increasing interest rates has caused the Federal Reserve Bank of New York to stop using the interest rate estimates of professional forecasters in the Bank's interest rate model due to the unreliability of those forecasters' interest rate forecasts.[9]

Figure 3
Economists' Forecasts of the Ten-Year Treasury Yield
2010-2015



Source: Akin Oyedele, "Interest Rate Forecasters are Shockingly Wrong Almost All of the Time," *Business Insider*, July 18, 2015. http://www.businessinsider.com/interest-rate-forecasts-are-wrong-most-of-the-time.

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[8] Akin Oyedele, "Interest Rate Forecasters are Shockingly Wrong Almost All of the Time," *Business Insider*, July 18, 2015. http://www.businessinsider.com/interest-rate-forecasts-are-wrong-most-of-the-time-2015-7.

[9] *Market Watch*," October 22, 2014.

Q. PLEASE REVIEW THE FEDERAL RESERVE'S DECISION TO RAISE THE FEDERAL FUNDS RATE IN DECEMBER 2015.

A. On December 16, 2015, the Fed decided to increase the target rate for Federal Funds to 0.25 – 0.50 percent.[10] This increase came after the rate was kept in the 0.0 to .25 percent range for over five years in order to spur economic growth in the wake of the financial crisis. The move occurred almost two years after the end of QE III program, the Federal Reserve's bond buying program. The Federal Reserve has been cautious in its approach to scaling its monetary intervention, and has paid close attention to a number of economic variables, including GDP growth, retail sales, consumer confidence, unemployment, the housing market, and inflation.

Q. HOW DID LONG-TERM INTEREST RATES REACT TO THE FEDERAL RESERVE'S 2015 DECISION TO INCREASE THE FEDERAL FUND RATE?

A. The Fed's decision to increase the Federal Fund rate range from 0.0%-0.25% to 0.25%-0.50% was highly anticipated in the markets. Yet, the yield on long-term Treasury bonds subsequently decreased from the 3.0% range at the time of the announcement to below 2.50% in mid-2015.

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[10] The federal funds rate is set by the Federal Reserve and is the borrowing rate applicable to the most creditworthy financial institutions when they borrow and lend funds <u>overnight</u> to each other,

Q. PLEASE ADDRESS THE FEDERAL RESERVE'S DECISION TO RAISE THE FEDERAL FUNDS RATE IN DECEMBER 2016, AND THE IMPACT, IF ANY, OF THE U.S. PRESIDENTIAL ELECTION ON THE FEDERAL FUNDS RATE.

A. Long-term interest rates in the U.S. bottomed out in August 2016 and have increased since that time with improvements in the economy. Notable improvements include lower unemployment and improving economic growth and corporate earnings. Then came November 8, 2016, and financial markets moved significantly in the wake of the unexpected results in the U.S. presidential election. The stock market has gained almost 10% and the 30-year Treasury yield has increased about 50 basis points to its current level of 3.0%. These market adjustments reflect the expectation that the new administration will make changes in fiscal, regulatory, and possibly monetary policies which could lead to higher economic growth and inflation. As a result of these developments, the Federal Reserve's decision at its December 13-14, 2016 meeting to raise its federal funds target rate to 0.50 - .075 percent was broadly expected and there was no significant market reaction.

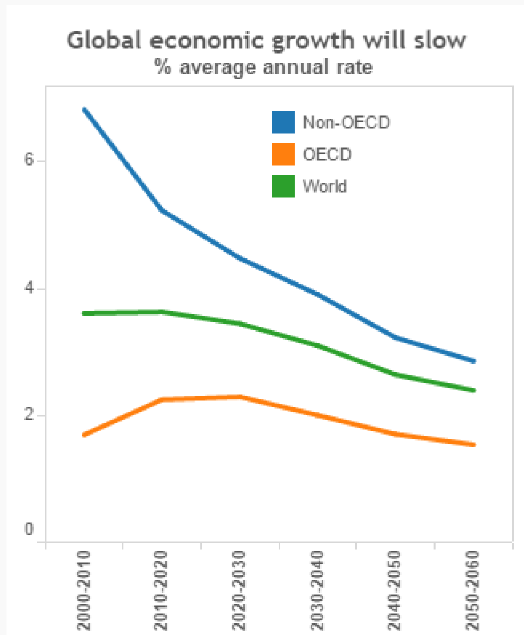
Q. HOW WILL INTEREST RATES AND COST OF CAPITAL BE AFFECTED BY ECONOMIC FACTORS IN THE LONG TERM?

A. In the long term, the key drivers of economic growth measured in nominal dollars are population growth, the advancement and diffusion of science and technology, and currency inflation. Although the U.S. experienced rapid economic growth during the "post-war" period (the 63 years that separated the end of World War II and the 2008 financial crisis), the post-war period is not necessarily reflective of expected future growth. It was marked by a near-trebling of global population, from under 2.5 billion to approximately 6.7 billion. Over the next 54 years, according to United Nations projections, the global population will grow considerably more slowly, reaching approximately 10.3 billion in 2070. With population growth slowing, life expectancies lengthening, and post-war "baby boomers" reaching retirement age, median ages in developed-economy nations have risen and continue to rise. The postwar period was also marked by rapid catch-up growth as Europe, Japan, and China recovered from successive devastations and as regions such as India and China deployed and leapfrogged technologies that had been developed over a much longer period in earlier-industrialized nations. That period of rapid catch-up growth is coming to an end. For example, although China remains one of the world's fastest-growing regions, its growth is now widely expected to slow substantially. This convergence of projected growth in the former "second world" and "third world" towards the slower growth of the nations that have long been considered "first world" is illustrated in this "key findings" chart published by the Organization for Economic Co-operation and Development:[11]

[11] See http://www.oecd.org/eco/outlook/lookingto2060.htm.

Figure 4
Projected Global Growth

Global growth will slow from 3.6% in 2010-2020 to 2.4% in 2050-2060 and will be increasingly driven by innovation and investment in skills.

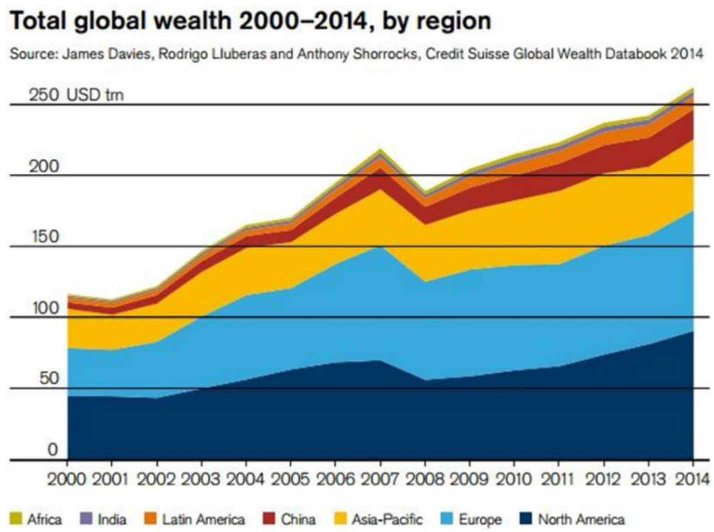


As to dollar inflation, it has declined to far below the level it reached in the 1970s. The Federal Reserve targets a 2% inflation rate; however, actual inflation has been below this figure. Indeed, inflation has been below the Fed's target rate for over three years due to a number of factors, including slow global economic growth, slack in the economy, and declining energy and commodity prices. The slow pace of inflation is also reflected in the decline in forecasts of future inflation. The Energy Information Administration's annual Energy Outlook includes in its nominal GDP growth projection a long-term inflation component, which the EIA projects at only 2.1% per year for its forecast period through 2040.[12]

[12]See EIA Annual Energy Outlook 2016, Table 20 (available at http://www.eia.gov/forecasts/aeo/tables_ref.cfm).

All of this translates into slowed growth in annual economic production and income, even when measured in nominal rather than real dollars. Meanwhile, the stored wealth that is available to fund investments has continued to rise. According to the most recent release of the Credit Suisse global wealth report, global wealth has more than doubled since the turn of this century, notwithstanding the temporary setback following the 2008 financial crisis:

Figure 5
Global Wealth – 2000-2014



These long-term trends mean that overall, and relative to what had been the post-war norm, the world now has more wealth chasing fewer opportunities for investment rewards. Ben Bernanke, the former Chairman of the Federal Reserve, called this phenomenon a "global savings glut."[13] Like any other liquid market, capital markets are subject to the law of supply and demand. With a large supply of capital available for investment and relatively scarce demand for investment capital, it should

[13] Ben S. Bernanke, *The Global Saving Glut and the U.S. Current Account Deficit* (Mar. 10, 2005), available at http://www.federalreserve.gov/boarddocs/speeches/2005/200503102/.

be no surprise to see the cost of investment capital decline and therefore interest rates should remain low.

Q. ON THE ISSUE OF THE FEDERAL RESERVE AND LONG-TERM INTEREST RATES, PLEASE HIGHLIGHT FORMER FEDERAL RESERVE CHAIRMAN BEN BERNANKE'S RECENT TAKE ON THE LOW INTEREST RATES IN THE U.S.

A. Mr. Bernanke addressed the issue of the continuing low interest rates in his weekly Brookings Blog. He indicated that the focus should be on real and not nominal interest rates and noted that, in the long term, these rates are not determined by the Federal Reserve:[14]

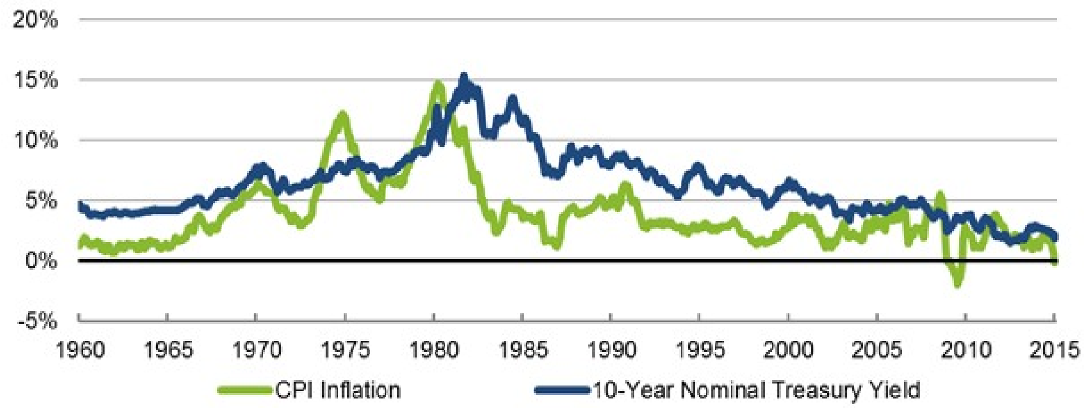
> If you asked the person in the street, "Why are interest rates so low?," he or she would likely answer that the Fed is keeping them low. That's true only in a very narrow sense. The Fed does, of course, set the benchmark nominal short-term interest rate. The Fed's policies are also the primary determinant of inflation and inflation expectations over the longer term, and inflation trends affect interest rates, as the figure above shows. But what matters most for the economy is the real, or inflation-adjusted, interest rate (the market, or nominal, interest rate minus the inflation rate). The real interest rate is most relevant for capital investment decisions, for example. The Fed's ability to affect real rates of return, especially longer-term real rates, is transitory and limited. Except in the short run, real interest rates are determined by a wide range of economic factors, including prospects for economic growth—not by the Fed.

[14] Ben S. Bernanke, "Why are Interest Rates So Low," Weekly Blog, Brookings, March 30, 2015. http://www.brookings.edu/blogs/ben-bernanke/posts/2015/03/30-why-interest-rates-so-low.

Mr. Bernanke also addressed the issue about whether low-interest rates are a short-term aberration or a long-term trend:[15]

> Low interest rates are not a short-term aberration, but part of a long-term trend. As the figure below shows, ten-year government bond yields in the United States were relatively low in the 1960s, rose to a peak above 15 percent in 1981, and have been declining ever since. That pattern is partly explained by the rise and fall of inflation, also shown in the figure. All else equal, investors demand higher yields when inflation is high to compensate them for the declining purchasing power of the dollars with which they expect to be repaid. But yields on inflation-protected bonds are also very low today; the real or inflation-adjusted return on lending to the U.S. government for five years is currently about minus 0.1 percent.

Figure 6
Interest Rates and Inflation
1960-Present



Source: Federal Reserve Board, BLS.

BROOKINGS

[15] Ibid.

Q. CAN YOU PLEASE PROVIDE THE COMMISSION WITH YOUR OPINION REGARDING THE FUTURE OUTLOOK FOR INTEREST RATES AND CAPITAL COSTS?

A. I believe that U.S. Treasuries offer an attractive yield relative to those of other major governments around the world; the yield will attract capital to the U.S. and keep U.S. interest rates down. There are several factors driving this conclusion.

First, the economy has been growing for over seven years, and, as noted above, the Federal Reserve sees continuing strength in the economy. The labor market has improved, with unemployment now below 5.0%.[16]

Second, interest rates remain at low levels and are likely to remain low. There are two factors driving the continued lower interest rates: (1) inflationary expectations in the U.S. remain low; and (2) global economic growth – including Europe, where growth is stagnant, and China, where growth is slowing significantly. As a result, while the yields on long-term U.S. Treasury bonds are low by historical standards, these yields are well above the government bond yields in Germany, Japan, and the United Kingdom. Thus, U.S. Treasuries offer an attractive yield relative to those of other major governments around the world, thereby attracting capital to the U.S. and keeping U.S. interest rates down.

Q. WHAT DO YOU RECOMMEND THE COMMISSION DO REGARDING THE FORECASTS OF HIGHER INTEREST RATES AND CAPITAL COSTS?

A. I suggest that the Commission set an equity cost rate based on current market cost

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[16] *See* Sehttp://data.bls.gov/timeseries/LNS14000000e.

rate indicators and not decline to speculate on the future direction of interest rates. As the above studies indicate, economists are always predicting that interest rates are going up, and yet they are almost always wrong. Obviously, investors are well aware of the consistently wrong forecasts of higher interest rates, and therefore place little weight on such forecasts. Moreover, investors would not be buying long-term Treasury bonds or utility stocks at their current yields if they expected interest rates to suddenly increase, thereby producing higher yields and negative returns. For example, consider a utility that pays a dividend of $2.00 with a stock price of $50.00. The current dividend yield is 4.0%. If, as Dr. Vander Weide suggests, interest rates and required utility yields increase, the price of the utility stock would decline. In the example above, if higher return requirements led the dividend yield to increase from 4.0% to 5.0% in the next year, the stock price would have to decline to $40, which would be a negative 20% return on the stock.[17] Obviously, investors would not buy the utility stock with an expected return of negative 20% due to higher dividend yield requirements.

In sum, it appears to be impossible to accurately forecast prices and rates that are determined in the financial markets, such as interest rates, the stock market, and gold prices. For interest rates, I have never seen a study that suggests one forecasting service is consistently better than others or that interest rate forecasts are consistently better than just assuming that the current interest rate will be the rate in the future. As discussed above, investors would not be buying long-term Treasury bonds or utility stocks at their current yields if they expected interest rates to suddenly increase, thereby producing

[17] In this example, for a stock with a $2.00 dividend, a dividend yield 5.0% dividend yield would require a stock price of $40 ($2.00/$40 = 5.0%).

higher yields and negative returns.

IV. PROXY GROUP SELECTION

Q. PLEASE DESCRIBE YOUR APPROACH TO DEVELOPING A FAIR RATE OF RETURN RECOMMENDATION FOR GULF POWER.

A. To develop a fair rate of return recommendation for the Company, I have evaluated the return requirements of investors on the common stock of a proxy group of publicly-held utility companies.

Q. PLEASE DESCRIBE YOUR PROXY GROUP OF ELECTRIC COMPANIES.

A. The selection criteria for the Electric Proxy Group include the following:

1. At least 50% of revenues from regulated electric operations as reported by *AUS Utilities Report*;
2. Listed as an Electric Utility by *Value Line Investment Survey* and listed as an Electric Utility or Combination Electric & Gas Utility in *AUS Utilities Report*;
3. An investment grade issuer credit rating by Moody's and Standard & Poor's ("S&P");
4. Has paid a cash dividend in the past six months, with no cuts or omissions;
5. Not involved in an acquisition of another utility, the target of an acquisition, or in the sale or spin-off of utility assets, in the past six months; and
6. Analysts' long-term earnings per share growth rate forecasts available from Yahoo, Reuters, and/or Zacks.

My Electric Proxy Group includes thirty companies. Summary financial statistics for the proxy group are listed in Panel A of page 1 of Exhibit JRW-4.[18] The median operating revenues and net plant among members of the Electric Proxy Group are $6,084.5 million and $16,741.0 million, respectively. The group receives 81% of its revenues from regulated electric operations, has BBB+/Baa1 issuer credit ratings from S&P and Moody's respectively, a current common equity ratio of 46.8%, and an earned return on common equity of 9.1%.

Q. PLEASE DESCRIBE DR. VANDER WEIDE'S PROXY GROUP OF ELECTRIC UTILITY COMPANIES.

A. The Vander Weide Proxy Group consists of twenty-three electric utility companies.[19] Summary financial statistics for the proxy group are listed on Panel B of page 1 of Exhibit JRW-4. The median operating revenues and net plant among members of the Vander Weide Proxy Group are $6,979.0 million and $18,295.0 million, respectively. The group receives 77% of revenues from regulated electric operations, has an average BBB+ issuer credit rating from S&P and an average Baa1 long-term rating from Moody's, a current common equity ratio of 46.0%, and an earned return on common equity of 9.8%.

[18] In my testimony, I present financial results using both mean and medians as measures of central tendency. However, due to outliers among means, I have used the median as a measure of central tendency.

[19] I have eliminated Nextera Energy, Great Plains Energy, and Westar Energy due to announced merger and acquisition activity.

Q. HOW DOES THE INVESTMENT RISK OF THE COMPANY COMPARE TO THAT OF THE TWO PROXY GROUPS?

A. Bond ratings provide a good assessment of the investment risk of a company. Exhibit JRW-4 also shows S&P and Moody's issuer credit ratings for the companies in the two groups. Gulf Power's issuer credit rating is A- according to S&P and A2 according to Moody's. These ratings are better than the average S&P and Moody's issuer credit ratings for the Electric Proxy Group and the Vander Weide Proxy Groups, which are BBB+ and Baa1. Specifically, Gulf's S&P rating is one notch (A- vs BBB+) above averages of the groups, and Gulf's Moody's rating is two notches (A2 vs Baa1) above the averages of the groups. Therefore, I believe that Gulf Power's investment risk is below that of the Electric and Vander Weide Proxy Groups.

Q. HOW DOES THE INVESTMENT RISK OF THE TWO GROUPS COMPARE BASED ON THE VARIOUS RISK METRICS PUBLISHED BY *VALUE LINE*?

A. On page 2 of Exhibit JRW-4, I have assessed the riskiness of the two proxy groups using five different risk measures. These measures include Beta, Financial Strength, Safety, Earnings Predictability, and Stock Price Stability. These risk measures suggest that the two proxy groups are similar in risk. The comparisons of the risk measures include Beta (0.70 vs. 0.70), Financial Strength (A vs. A) Safety (2.0 vs. 2.0), Earnings Predictability (78 vs. 81), and Stock Price Stability (96 vs. 97). On balance, these measures suggest that the two proxy groups are similar in risk.

V. CAPITAL STRUCTURE RATIOS AND DEBT COST RATES

Q. PLEASE DESCRIBE GULF POWER'S PROPOSED CAPITAL STRUCTURE AND SENIOR CAPITAL COST RATES.

A. Gulf Power witness Ritenour provides the Company's proposed capital structure and senior capital cost rates. Gulf Power's recommended capital structure from investors' sources includes 1.56% short-term debt, 40.13% long-term debt, 5.19% preferred stock, and 53.12% common equity. Gulf Power uses short-term and long-term debt cost rates of 3.02% and 4.40%, and a preferred stock cost rate of 6.15%.

Q. WHAT ARE THE COMMON EQUITY RATIOS IN THE CAPITALIZATIONS OF THE TWO PROXY GROUPS?

A. As shown in Exhibit JRW-4, the average common equity ratios for the Electric and Vander Weide Proxy Groups are 46.8% and 46.0%. This indicates that the Company's proposed capitalization from investor capital with a common equity ratio of 53.12% has higher equity and therefore lower financial risk than the capital structures of the two proxy groups. It should be noted that these capitalization ratios include total debt, which consists of both short-term and long-term debt. In assessing financial risk, short-term debt is included because, just like long-term debt, short-term debt has a higher claim on the assets and earnings of the company and requires timely payment of interest and repayment of principal.

Q. HOW DOES THE COMPANY'S PROPOSED COMMON EQUITY RATIO COMPARE TO THAT OF ITS PARENT, SOUTHERN COMPANY?

A. As shown in Exhibit JRW-4, Southern Company has a current common equity ratio of 37.1%. Therefore, Gulf has proposed a capitalization that is more than fifteen percentage points higher than the capitalization of its parent company, Southern.

Q. PLEASE DISCUSS THE SIGNIFICANCE OF THE AMOUNT OF EQUITY THAT IS INCLUDED IN AN ELECTRIC UTILITY'S CAPITAL STRUCTURE.

A. An electric utility's decision as to the amount of equity capital it will incorporate into its capital structure involves fundamental trade-offs relating to the amount of financial risk the firm carries, the overall revenue requirements its customers are required to bear through the rates they pay, and the return on equity that investors will require.

Q. PLEASE DISCUSS A UTILITY'S DECISION TO USE DEBT VERSUS EQUITY TO MEET ITS CAPITAL NEEDS.

A. Utilities satisfy their capital needs through a mix of equity and debt. Because equity capital is more expensive than debt, the issuance of debt enables a utility to raise more capital for a given commitment of dollars than it could raise with just equity. Debt is, therefore, a means of "leveraging" capital dollars. However, as the amount of debt in the capital structure increases, its financial risk increases and the risk of the utility, as perceived by equity investors also increases. Significantly for this case, the converse is also true. As the amount of debt in the capital structure decreases, the financial risk decreases. The required return on equity capital is a function of the amount of overall risk that investors perceive, including financial risk in the form of debt.

Q. WHY IS THIS RELATIONSHIP IMPORTANT TO THE UTILITY'S CUSTOMERS?

A. Just as there is a direct correlation between the utility's authorized return on equity and the utility's revenue requirements (the higher the return, the greater the revenue requirement), there is a direct correlation between the amount of equity in the capital structure and the revenue requirements the customers are called on to bear. Again, equity capital is more expensive than debt. Not only does equity command a higher cost rate, it also adds more to the income tax burden that ratepayers are required to pay through rates. As the equity ratio increases, the utility's revenue requirements increase and the rates paid by customers increase. If the proportion of equity is too high, rates will be higher than they need to be. For this reason, the utility's management should pursue a capital acquisition strategy that results in the proper balance in the capital structure.

Q. HOW HAVE ELECTRIC UTILITIES TYPICALLY STRUCK THIS BALANCE?

A. Due to regulation and the essential nature of its output, an electric utility is exposed to less business risk than other companies that are not regulated. This means that an electric utility can reasonably carry relatively more debt in its capital structure than can most unregulated companies. Thus, a utility should take appropriate advantage of its lower business risk to employ cheaper debt capital at a level that will benefit its customers through lower revenue requirements. Typically, one may see equity ratios for electric utilities range from the 40% to 50% range.

Q. HAVE RATING AGENCIES RECOGNIZED THE TREND TOWARD ELECTRIC UTILITY HOLDING COMPANIES USING MORE DEBT THAN THEIR OPERATING SUBSIDIARIES?

A. Yes, they have. The strategy of using low-cost debt at the parent level to finance equity in a regulated subsidiary is known as "double leverage." Moody's recently published an article on the use of low-cost debt financing by public utility holding companies to increase their ROEs. The summary observations included the following: [20]

> US utilities use leverage at the holding-company level to invest in other businesses, make acquisitions and earn higher returns on equity. In some cases, an increase in leverage at the parent can hurt the credit profiles of its regulated subsidiaries.

Moody's defined double leverage in the following way:[21]

> Double leverage is a financial strategy whereby the parent raises debt but downstreams the proceeds to its operating subsidiary, likely in the form of an equity investment. Therefore, the subsidiary's operations are financed by debt raised at the subsidiary level and by debt financed at the holding-company level. In this way, the subsidiary's equity is leveraged twice, once with the subsidiary debt and once with the holding-company debt. In a simple operating-company / holding-company structure, this practice results in a consolidated debt-to-capitalization ratio that is higher at the parent than at the subsidiary because of the additional debt at the parent.

[20] Moody's Investors' Service, "High Leverage at the Parent Often Hurts the Whole Family," May 11, 2015, p.1.
[21] *Ibid.* p. 5.

Moody's goes on to discuss the potential risk to utilities of this strategy, and specifically notes that regulators could take it into consideration in setting authorized ROEs.[22]

> **"Double leverage" drives returns for some utilities but could pose risks down the road.** The use of double leverage, a long-standing practice whereby a holding company takes on debt and downstreams the proceeds to an operating subsidiary as equity, could pose risks down the road if regulators were to ascribe the debt at the parent level to the subsidiaries or adjust the authorized return on capital.

Q. GIVEN THAT GULF HAS PROPOSED AN EQUITY RATIO THAT IS HIGHER THAN THAT OF BOTH PROXY GROUPS AND ITS PARENT, WHAT SHOULD THE COMMISSION DO IN THIS RATEMAKING PROCEEDING?

A. When a regulated electric utility's actual capital structure contains a high equity ratio, the options are: (1) to impute a more reasonable capital structure and to reflect the imputed capital structure in revenue requirements; or (2) to recognize the downward impact that an unusually high equity ratio will have on the financial risk of a utility and authorize a lower common equity cost rate.

Q. PLEASE ELABORATE ON THIS "DOWNWARD IMPACT."

A. As I stated earlier, there is a direct correlation between the amount of debt in a utility's capital structure and the financial risk that an equity investor will associate with that utility. A relatively lower proportion of debt translates into a lower required

[22] *Ibid.* p. 1.

return on equity, all other things being equal. Stated differently, a utility cannot expect to "have it both ways." Specifically, a utility cannot maintain an unusually high equity ratio and not expect to have the resulting lower risk reflected in its authorized return on equity. The fundamental relationship between the lower risk and the appropriate authorized return should not be ignored.

Q. HOW DO YOU PLAN TO ACCOUNT FOR THE DIFFERENCE IN THE CAPITAL STRUCTURE?

A. I am using a capital structure with an imputed common equity ratio of 50.0%. In other words, as shown in Exhibit JRW-5, I lower the common equity ratio from 53.12% to 50.00%, and increase the ratios for short-term debt (1.56% to 1.67%), long-term debt (40.13% to 42.80%), and preferred stock (5.19% to 5.53%).

. **Q. WHAT CAPTIAL STRUCTURES ARE YOU PROPOSING FOR GULF?**

A. My proposed capital structure, from investor-provided capital, includes 1.67% short-term debt, 42.80% long-term debt, 5.53% Preferred stock, and 50.00% common equity. It should be noted that this capital structure includes a common equity ratio (50.0%) that is above the averages of the two proxy groups (46.8% and 46.0%) utilized by me and Gulf Power witness Vander Weide.

Q. WHAT SENIOR CAPITAL COST RATES ARE YOU USING FOR GULF POWER?

A. I am using the Company's proposed cost rates for short-term and long-term debt and preferred stock.

VI. THE COST OF COMMON EQUITY CAPITAL

A. Overview

Q. WHY MUST AN OVERALL COST OF CAPITAL OR FAIR RATE OF RETURN BE ESTABLISHED FOR A PUBLIC UTILITY?

A. In a competitive industry, the return on a firm's common equity capital is determined through the competitive market for its goods and services. Due to the capital requirements needed to provide utility services and the economic benefit to society from avoiding duplication of these services and the construction of utility infrastructure facilities, many public utilities are monopolies. Because of the lack of competition and the essential nature of their services, it is not appropriate to permit monopoly utilities to set their own prices. Thus, regulation seeks to establish prices that are fair to consumers and, at the same time, sufficient to meet the operating and capital costs of the utility, *i.e.*, provide an adequate return on capital to attract investors.

Q. PLEASE PROVIDE AN OVERVIEW OF THE COST OF CAPITAL IN THE CONTEXT OF THE THEORY OF THE FIRM.

A. The total cost of operating a business includes the cost of capital. The cost of common equity capital is the expected return on a firm's common stock that the marginal investor would deem sufficient to compensate for risk and the time value of money. In equilibrium, the expected and required rates of return on a company's common stock are equal.

Normative economic models of a company or firm, developed under very restrictive assumptions, provide insight into the relationship between firm performance or profitability, capital costs, and the value of the firm. Under the economist's ideal model of perfect competition, where entry and exit are costless, products are undifferentiated, and there are increasing marginal costs of production, firms produce up to the point where price equals marginal cost. Over time, a long-run equilibrium is established where price equals average cost, including the firm's capital costs. In equilibrium, total revenues equal total costs, and because capital costs represent investors' required return on the firm's capital, actual returns equal required returns, and the market value must equal the book value of the firm's securities.

In a competitive market, firms can achieve competitive advantage due to product market imperfections. Most notably, companies can gain competitive advantage through product differentiation (adding real or perceived value to products) and by achieving economies of scale (decreasing marginal costs of production). Competitive advantage allows firms to price products above average cost and thereby earn accounting profits greater than those required to cover capital costs. When these profits are in excess of that required by investors, or when a firm earns a return on equity in excess of its cost of equity, investors respond by valuing the firm's equity in excess of its book value.

James M. McTaggart, founder of the international management consulting firm Marakon Associates, described this essential relationship between the return on equity, the cost of equity, and the market-to-book ratio in the following manner:

> Fundamentally, the value of a company is determined by the cash flow it generates over time for its owners, and the minimum acceptable rate of return required by capital investors. This "cost of equity capital" is used to discount the expected equity cash flow, converting it to a present value. The cash flow is, in turn, produced by the interaction of a company's return on equity and the annual rate of equity growth. High return on equity (ROE) companies in low-growth markets, such as Kellogg, are prodigious generators of cash flow, while low ROE companies in high-growth markets, such as Texas Instruments, barely generate enough cash flow to finance growth.
>
> A company's ROE over time, relative to its cost of equity, also determines whether it is worth more or less than its book value. If its ROE is consistently greater than the cost of equity capital (the investor's minimum acceptable return), the business is economically profitable and its market value will exceed book value. If, however, the business earns an ROE consistently less than its cost of equity, it is economically unprofitable and its market value will be less than book value. [23]

As such, the relationship between a firm's return on equity, cost of equity, and market-to-book ratio is relatively straightforward. A firm that earns a return on equity above its cost of equity will see its common stock sell at a price above its book value. Conversely, a firm that earns a return on equity below its cost of equity will see its common stock sell at a price below its book value.

Q. PLEASE PROVIDE ADDITIONAL INSIGHTS INTO THE RELATIONSHIP BETWEEN ROE AND MARKET-TO-BOOK RATIOS.

[23] James M. McTaggart, "The Ultimate Poison Pill: Closing the Value Gap," *Commentary* (Spring 1986), p.3.

A. This relationship is discussed in a classic Harvard Business School case study entitled "Note on Value Drivers." On page 2 of that case study, the author describes the relationship very succinctly:

> For a given industry, more profitable firms – those able to generate higher returns per dollar of equity– should have higher market-to-book ratios. Conversely, firms which are unable to generate returns in excess of their cost of equity should sell for less than book value.

Profitability	*Value*
If ROE > K	*then Market/Book > 1*
If ROE = K	*then Market/Book =1*
If ROE < K	*then Market/Book < 1*[24]

To assess the relationship by industry, as suggested above, I performed a regression study between estimated ROE and market-to-book ratio ratios using natural gas distribution, electric utility, and water utility companies. I used all companies in these three industries that are covered by *Value Line* and have estimated ROE and market-to-book ratio data. The results are presented in Panels A-C of Exhibit JRW-6. The average R-squares for the electric, gas, and water companies are 0.77, 0.56, and 0.75, respectively.[25] This demonstrates the strong positive relationship between ROEs and market-to-book ratios for public utilities.

Q. WHAT ECONOMIC FACTORS HAVE AFFECTED THE COST OF EQUITY CAPITAL FOR PUBLIC UTILITIES?

[24] Benjamin Esty, "Note on Value Drivers," Harvard Business School, Case No. 9-297-082, April 7, 1997.

[25] R-square measures the percent of variation in one variable (e.g., market-to-book ratios) explained by another variable (e.g., expected ROE). R-squares vary between zero and 1.0, with values closer to 1.0 indicating a higher relationship between two variables.

A. Exhibit JRW-7 provides indicators of public utility equity cost rates over the past decade.

Page 1 shows the yields on long-term A-rated public utility bonds. These yields decreased from 2000 until 2003, and then hovered in the 5.50%-6.50% range from mid-2003 until mid-2008. These yields spiked up to the 7.75% range with the onset of the Great Recession financial crisis in 2008, and remained high and volatile until early 2009. These yields declined to below 4.0% in mid-2012, and then increased with interest rates in general to the 4.85% range as of late 2013. They subsequently declined to below 4.0% in the first quarter of 2015, increased with interest rates in general in 2015, and have now dropped back to the 4.0% range.

Page 2 of Exhibit JRW-7 provides the dividend yields for electric utilities over the past decade. The dividend yields for this electric group have declined from the year 2000 to 2007, increased to 5.2% in 2009, and declined to about 3.75% in 2014 and 2015.

Average earned returns on common equity and market-to-book ratios for electric utilities are on page 3 of Exhibit JRW-7. For the electric group, earned returns on common equity have declined gradually since the year 2000 and have been in the 9.0% range in recent years. The average market-to-book ratios for this group peaked at 1.68X in 2007, declined to 1.07X in 2009, and have increased since that time. As of 2015, the average market-to-book for the group was 1.55X. This means that, for at least the last decade, returns on common equity have been greater than the cost of capital, or more than necessary to meet investors' required returns. This also means that customers have been paying more than necessary to support an appropriate profit level for regulated utilities.

Q. WHAT FACTORS DETERMINE INVESTORS' EXPECTED OR REQUIRED RATE OF RETURN ON EQUITY?

A. The expected or required rate of return on common stock is a function of market-wide as well as company-specific factors. The most important market factor is the time value of money as indicated by the level of interest rates in the economy. Common stock investor requirements generally increase and decrease with like changes in interest rates. The perceived risk of a firm is the predominant factor that influences investor return requirements on a company-specific basis. A firm's investment risk is often separated into business and financial risk. Business risk encompasses all factors that affect a firm's operating revenues and expenses. Financial risk results from incurring fixed obligations in the form of debt in financing its assets.

Q. HOW DOES THE INVESTMENT RISK OF UTILITIES COMPARE WITH THAT OF OTHER INDUSTRIES?

A. Due to the essential nature of their service as well as their regulated status, public utilities are exposed to a lesser degree of business risk than other, non-regulated businesses. The relatively low level of business risk allows public utilities to meet much of their capital requirements through borrowing in the financial markets, thereby incurring greater than average financial risk. Nonetheless, the overall investment risk of public utilities is below most other industries.

Exhibit JRW-8 provides an assessment of investment risk for 97 industries as measured by beta, which according to modern capital market theory, is the only relevant measure of investment risk. These betas come from the *Value Line Investment Survey*. The study shows that the investment risk of utilities is very low. The average betas for electric, water, and gas utility companies are 0.72, 0.71, and 0.74, respectively. As such, the cost of equity for utilities is among the lowest of all industries in the U.S.

Q. WHAT IS THE COST OF COMMON EQUITY CAPITAL?

A. The costs of debt and preferred stock are normally based on historical or book values and can be determined with a great degree of accuracy. The cost of common equity capital, however, cannot be determined precisely and must instead be estimated from market data and informed judgment. This return requirement of the stockholder should be commensurate with the return requirement on investments in other enterprises having comparable risks.

According to valuation principles, the present value of an asset equals the discounted value of its expected future cash flows. Investors discount these expected cash flows at their required rate of return that, as noted above, reflects the time value of money and the perceived riskiness of the expected future cash flows. As such, the cost of common equity is the rate at which investors discount expected cash flows associated with common stock ownership.

Q. HOW CAN THE EXPECTED OR REQUIRED RATE OF RETURN ON COMMON EQUITY CAPITAL BE DETERMINED?

A. Models have been developed to ascertain the cost of common equity capital for a firm. Each model, however, has been developed using restrictive economic assumptions. Consequently, judgment is required in selecting appropriate financial valuation models to estimate a firm's cost of common equity capital, in determining the data inputs for these models, and in interpreting the models' results. All of these decisions must take into consideration the firm involved as well as current conditions in the economy and the financial markets.

Q. HOW DO YOU PLAN TO ESTIMATE THE COST OF EQUITY CAPITAL FOR GULF POWER?

A. I rely primarily on the discounted cash flow ("DCF") model to estimate the cost of equity capital. Given the investment valuation process and the relative stability of the utility business, the DCF model provides the best measure of equity cost rates for public utilities. I have also performed a capital asset pricing model ("CAPM") study; however, I give these results less weight because I believe that risk premium studies, of which the CAPM is one form, provide a less reliable indication of equity cost rates for public utilities.

B. DCF Analysis

Q. PLEASE DESCRIBE THE THEORY BEHIND THE TRADITIONAL DCF MODEL.

A. According to the DCF model, the current stock price is equal to the discounted value of all future dividends that investors expect to receive from investment in the firm. As such, stockholders' returns ultimately result from current as well as future dividends. As owners of a corporation, common stockholders are entitled to a *pro rata* share of the firm's earnings. The DCF model presumes that earnings that are not paid out in the form of dividends are reinvested in the firm so as to provide for future growth in earnings and dividends. The rate at which investors discount future dividends, which reflects the timing and riskiness of the expected cash flows, is interpreted as the market's expected or required return on the common stock. Therefore, this discount rate represents the cost of common equity. Algebraically, the DCF model can be expressed as:

$$P = \frac{D_1}{(1+k)^1} + \frac{D_2}{(1+k)^2} + \ldots \frac{D_n}{(1+k)^n}$$

where P is the current stock price, D_n is the dividend in year n, and k is the cost of common equity.

Q. IS THE DCF MODEL CONSISTENT WITH VALUATION TECHNIQUES EMPLOYED BY INVESTMENT FIRMS?

A. Yes. Virtually all investment firms use some form of the DCF model as a valuation technique. One common application for investment firms is called the three-stage DCF or dividend discount model ("DDM"). The stages in a three-stage DCF model are presented in Exhibit JRW-9, Page 1 of 2. This model presumes that a company's dividend payout progresses initially through a growth stage, then proceeds through a transition stage, and finally assumes a maturity (or steady-state) stage. The dividend-payment stage of a firm depends on the profitability of its internal investments which, in turn, is largely a function of the life cycle of the product or service.

1. Growth stage: Characterized by rapidly expanding sales, high profit margins, and an abnormally high growth in earnings per share. Because of highly profitable expected investment opportunities, the payout ratio is low. Competitors are attracted by the unusually high earnings, leading to a decline in the growth rate.

2. Transition stage: In later years, increased competition reduces profit margins and earnings growth slows. With fewer new investment opportunities, the company begins to pay out a larger percentage of earnings.

3. Maturity (steady-state) stage: Eventually, the company reaches a position where its new investment opportunities offer, on average, only slightly more attractive ROEs. At that time, its earnings growth rate, payout ratio, and ROE stabilize for the remainder of its life. The constant-growth DCF model is appropriate when a firm is in the maturity stage of the life cycle.

In using this model to estimate a firm's cost of equity capital, dividends are projected into the future using the different growth rates in the alternative stages, and then the equity cost rate is the discount rate that equates the present value of the future dividends to the current stock price.

Q. HOW DO YOU ESTIMATE STOCKHOLDERS' EXPECTED OR REQUIRED RATE OF RETURN USING THE DCF MODEL?

A. Under certain assumptions, including a constant and infinite expected growth rate, and constant dividend/earnings and price/earnings ratios, the DCF model can be simplified to the following:

$$P = \frac{D_1}{k - g}$$

where D_1 represents the expected dividend over the coming year and g is the expected growth rate of dividends. This is known as the constant-growth version of the DCF model. To use the constant-growth DCF model to estimate a firm's cost of equity, one solves for k in the above expression to obtain the following:

$$k = \frac{D_1}{P} + g$$

Q. IN YOUR OPINION, IS THE CONSTANT-GROWTH DCF MODEL APPROPRIATE FOR PUBLIC UTILITIES?

A. Yes. The economics of the public utility business indicate that the industry is in the steady-state or constant-growth stage of a three-stage DCF. The economics include the relative stability of the utility business, the maturity of the demand for public utility services, and the regulated status of public utilities (especially the fact that their returns on investment are effectively set through the ratemaking process). The DCF valuation procedure for companies in this stage is the constant-growth DCF. In the constant-growth version of the DCF model, the current dividend payment and stock price are directly observable. However, the primary problem and controversy in applying the DCF model to estimate equity cost rates entails estimating investors' expected dividend growth rate.

Q. WHAT FACTORS SHOULD ONE CONSIDER WHEN APPLYING THE DCF METHODOLOGY?

A. One should be sensitive to several factors when using the DCF model to estimate a firm's cost of equity capital. In general, one must recognize the assumptions under which the DCF model was developed in estimating its components (the dividend yield and the expected growth rate). The dividend yield can be measured precisely at any point in time; however, it tends to vary somewhat over time. Estimation of expected growth is considerably more difficult. One must consider recent firm performance, in conjunction with current economic developments and other information available to investors, to accurately estimate investors' expectations.

Q. WHAT DIVIDEND YIELDS HAVE YOU REVIEWED?

A. I have calculated the dividend yields for the companies in the proxy group using the current annual dividend and the 30-day, 90-day, and 180-day average stock prices. These dividend yields are provided in Panel A of page 2 of Exhibit JRW-10. For the Electric Proxy Group, the median dividend yields using the 30-day, 90-day, and 180-

day average stock prices range from 3.40% to 3.43%. I am using the average of the medians - 3.40% - as the dividend yield for the Electric Proxy Group. The dividend yields for the Vander Weide Proxy Group are shown in Panel B of page 2 of Exhibit JRW-10. The median dividend yields range from 3.41% to 3.43% using the 30-day, 90-day, and 180-day average stock prices. I am using the average of the medians – 3.40% - as the dividend yield for the Vander Weide Proxy Group.

Q. PLEASE DISCUSS THE APPROPRIATE ADJUSTMENT TO THE SPOT DIVIDEND YIELD.

A. According to the traditional DCF model, the dividend yield term relates to the dividend yield over the coming period. As indicated by Professor Myron Gordon, who is commonly associated with the development of the DCF model for popular use, this is obtained by: (1) multiplying the expected dividend over the coming quarter by 4, and (2) dividing this dividend by the current stock price to determine the appropriate dividend yield for a firm that pays dividends on a quarterly basis.[26]

In applying the DCF model, some analysts adjust the current dividend for growth over the coming year as opposed to the coming quarter. This can be complicated because firms tend to announce changes in dividends at different times during the year. As such, the dividend yield computed based on presumed growth over the coming quarter as opposed to the coming year can be quite different. Consequently,

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[26] *Petition for Modification of Prescribed Rate of Return*, Federal Communications Commission, Docket No. 79-05, Direct Testimony of Myron J. Gordon and Lawrence I. Gould at 62 (April 1980).

it is common for analysts to adjust the dividend yield by some fraction of the long-term expected growth rate.

Q. GIVEN THIS DISCUSSION, WHAT ADJUSTMENT FACTOR DO YOU USE FOR YOUR DIVIDEND YIELD?

A. I adjust the dividend yield by one-half (1/2) of the expected growth so as to reflect growth over the coming year. The DCF equity cost rate ("K") is computed as:

$$K = [(D/P) * (1 + 0.5g)] + g$$

Q. PLEASE DISCUSS THE GROWTH RATE COMPONENT OF THE DCF MODEL.

A. There is debate as to the proper methodology to employ in estimating the growth component of the DCF model. By definition, this component is investors' expectation of the long-term dividend growth rate. Presumably, investors use some combination of historical and/or projected growth rates for earnings and dividends per share and for internal or book-value growth to assess long-term potential.

Q. WHAT GROWTH DATA HAVE YOU REVIEWED FOR THE PROXY GROUPS?

A. I have analyzed a number of measures of growth for companies in the proxy groups. I reviewed *Value Line's* historical and projected growth rate estimates for earnings per share ("EPS"), dividends per share ("DPS"), and book value per share ("BVPS"). In addition, I utilized the average EPS growth rate forecasts of Wall Street analysts as provided by Yahoo, Reuters and Zacks. These services solicit five-year earnings growth rate projections from securities analysts and compile and publish the means and medians of these forecasts. Finally, I also assessed prospective growth as measured by prospective earnings retention rates and earned returns on common equity.

Q. PLEASE DISCUSS HISTORICAL GROWTH IN EARNINGS AND DIVIDENDS AS WELL AS INTERNAL GROWTH.

A. Historical growth rates for EPS, DPS, and BVPS are readily available to investors and are presumably an important ingredient in forming expectations concerning future growth. However, one must use historical growth numbers as measures of investors' expectations with caution. In some cases, past growth may not reflect future growth potential. Also, employing a single growth rate number (for example, for five or ten years) is unlikely to accurately measure investors' expectations, due to the sensitivity of a single growth rate figure to fluctuations in individual firm performance as well as overall economic fluctuations (*i.e.*, business cycles). However, one must appraise the context in which the growth rate is being employed. According to the conventional DCF model, the expected return on a security is equal to the sum of the dividend yield and the expected long-term growth in dividends. Therefore, to best estimate the cost of common equity capital using the conventional DCF model, one must look to long-term growth rate expectations.

Internally generated growth is a function of the percentage of earnings retained within the firm (the earnings retention rate) and the rate of return earned on those earnings (the return on equity). The internal growth rate is computed as the retention rate times the return on equity. Internal growth is significant in determining long-run earnings and, therefore, dividends. Investors recognize the importance of internally generated growth and pay premiums for stocks of companies that retain earnings and earn high returns on internal investments.

Q. PLEASE DISCUSS THE SERVICES THAT PROVIDE ANALYSTS' EPS FORECASTS.

A. Analysts' EPS forecasts for companies are collected and published by a number of different investment information services, including Institutional Brokers Estimate System ("I/B/E/S"), Bloomberg, FactSet, Zacks, First Call and Reuters, among others. Thompson Reuters publishes analysts' EPS forecasts under different product names, including I/B/E/S, First Call, and Reuters. Bloomberg, FactSet, and Zacks each publish their own set of analysts' EPS forecasts for companies. These services do not reveal (1) the analysts who are solicited for forecasts or (2) the identity of the analysts who actually provide the EPS forecasts that are used in the compilations published by the services. I/B/E/S, Bloomberg, FactSet, and First Call are fee-based services. These services usually provide detailed reports and other data in addition to analysts' EPS forecasts. In contrast, Thompson Reuters and Zacks do provide limited EPS forecast data free-of-charge on the Internet. Yahoo finance (http://finance.yahoo.com) lists Thompson Reuters as the source of its summary EPS forecasts. The Reuters website (www.reuters.com) also publishes EPS forecasts from Thompson Reuters, but with more detail. Zacks (www.zacks.com) publishes its summary forecasts on its website. Zacks estimates are also available on other websites, such as msn.money (http://money.msn.com).

Q. PLEASE PROVIDE AN EXAMPLE OF THESE EPS FORECASTS.

A. The following example provides the EPS forecasts compiled by Reuters for Alliant Energy Corp. (stock symbol "LNT"). The figures are provided on page 2 of Exhibit JRW-9. Line one shows that one analyst has provided EPS estimates for the quarter ending December 31, 2016. The mean, high and low estimates are $0.28, $0.31, and $0.24, respectively. The second line shows the quarterly EPS estimates for the quarter ending March 31, 2017 of $0.44 (mean), $0.45 (high), and $0.42 (low). Line three shows the annual EPS estimates for the fiscal year ending December 2016 ($1.88 (mean), $1.90 (high), and $1.84 (low). Line four shows the annual EPS estimates for the fiscal year ending December 2017 ($1.99 (mean), $2.01 (high), and $1.95 (low). The quarterly and annual EPS forecasts in lines 1-4 are expressed in dollars and cents. As in the LNT case shown here, it is common for more analysts to provide estimates of annual EPS as opposed to quarterly EPS. The bottom line shows the projected long-term EPS growth rate, which is expressed as a percentage. For LNT, one analyst has provided a long-term EPS growth rate forecast, with mean, high, and low growth rates of 6.0%, 6.0%, and 6.00%.

Q. WHICH OF THESE EPS FORECASTS IS USED IN DEVELOPING A DCF GROWTH RATE?

A. The DCF growth rate is the long-term projected growth rate in EPS, DPS, and BVPS. Therefore, in developing an equity cost rate using the DCF model, the projected long-term growth rate is the projection used in the DCF model.

Q. WHY DO YOU NOT RELY EXCLUSIVELY ON THE EPS FORECASTS OF WALL STREET ANALYSTS IN ARRIVING AT A DCF GROWTH RATE FOR THE PROXY GROUP?

A. There are several issues with using the EPS growth rate forecasts of Wall Street analysts as DCF growth rates. First, the appropriate growth rate in the DCF model is the dividend growth rate, not the earnings growth rate. Nonetheless, over the very long term, dividend and earnings will have to grow at a similar growth rate. Therefore, consideration must be given to other indicators of growth, including prospective dividend growth, internal growth, as well as projected earnings growth. Second, a recent study by Lacina, Lee, and Xu (2011) has shown that analysts' long-term earnings growth rate forecasts are not more accurate at forecasting future earnings than naïve random walk forecasts of future earnings.[27] Employing data over a twenty-year period, these authors demonstrate that using the most recent year's EPS figure to forecast EPS in the next 3-5 years proved to be just as accurate as using the EPS estimates from analysts' long-term earnings growth rate forecasts. In the authors' opinion, these results indicate that analysts' long-term earnings growth rate forecasts should be used with caution as inputs for valuation and cost of capital purposes. Finally, and most significantly, it is well known that the long-term EPS growth rate forecasts of Wall Street securities analysts are overly optimistic and upwardly biased. This has been demonstrated in a number of academic studies over the years.[28] Hence, using these

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[27] M. Lacina, B. Lee & Z. Xu, *Advances in Business and Management Forecasting (Vol. 8),* Kenneth D. Lawrence, Ronald K. Klimberg (ed.), Emerald Group Publishing Limited, pp.77-101.

[28] The studies that demonstrate analysts' long-term EPS forecasts are overly-optimistic and upwardly biased include: R.D. Harris, "The Accuracy, Bias, and Efficiency of Analysts' Long Run Earnings Growth Forecasts,"

growth rates as a DCF growth rate will provide an overstated equity cost rate. On this issue, a study by Easton and Sommers (2007) found that optimism in analysts' growth rate forecasts leads to an upward bias in estimates of the cost of equity capital of almost 3.0 percentage points.[29]

Q. IS IT YOUR OPINION THAT STOCK PRICES REFLECT THE UPWARD BIAS IN THE EPS GROWTH RATE FORECASTS?

A. Yes, I do believe that investors are well aware of the bias in analysts' EPS growth rate forecasts, and therefore stock prices reflect the upward bias.

Q. HOW DOES THAT AFFECT THE USE OF THESE FORECASTS IN A DCF EQUITY COST RATE STUDY?

A. According to the DCF model, the equity cost rate is a function of the dividend yield and expected growth rate. Because stock prices reflect the bias, it would affect the dividend yield. In addition, the DCF growth rate needs to be adjusted downward from the projected EPS growth rate to reflect the upward bias.

Journal of Business Finance & Accounting, pp. 725-55 (June/July 1999); P. DeChow, A. Hutton, and R. Sloan, "The Relation Between Analysts' Forecasts of Long-Term Earnings Growth and Stock Price Performance Following Equity Offerings," *Contemporary Accounting Research (2000);* K. Chan, L., Karceski, J., & Lakonishok, J., "The Level and Persistence of Growth Rates," *Journal of Finance* pp. 643−684, (2003); M. Lacina, B. Lee and Z. Xu, *Advances in Business and Management Forecasting (Vol. 8),* Kenneth D. Lawrence, Ronald K. Klimberg (ed.), Emerald Group Publishing Limited, pp.77-101; and Marc H. Goedhart, Rishi Raj, and Abhishek Saxena, "Equity Analysts, Still Too Bullish," *McKinsey on Finance*, pp. 14-17, (Spring 2010).

[29] Peter D. Easton & Gregory A. Sommers, *Effect of Analysts' Optimism on Estimates of the Expected Rate of Return Implied by Earnings Forecasts*, 45 J. ACCT. RES. 983–1015 (2007).

Q. PLEASE DISCUSS THE HISTORICAL GROWTH OF THE COMPANIES IN THE PROXY GROUPS, AS PROVIDED BY *VALUE LINE*.

A. Page 3 of Exhibit JRW-10 provides the 5- and 10- year historical growth rates for EPS, DPS, and BVPS for the companies in the two proxy groups, as published in the *Value Line Investment Survey*. The median historical growth measures for EPS, DPS, and BVPS for the Electric Proxy Group, as provided in Panel A, range from 3.5% to 5.5%, with an average of the medians of 4.2%. For the Vander Weide Proxy Group, as shown in Panel B of page 3 of Exhibit JRW-10, the historical growth measures in EPS, DPS, and BVPS, as measured by the medians, range from 4.0% to 5.0%, with an average of the medians of 4.2%.

Q. PLEASE SUMMARIZE *VALUE LINE'S* PROJECTED GROWTH RATES FOR THE COMPANIES IN THE PROXY GROUPS.

A. *Value Line's* projections of EPS, DPS, and BVPS growth for the companies in the proxy groups are shown on page 4 of Exhibit JRW-10. As stated above, due to the presence of outliers, the medians are used in the analysis. For the Electric Proxy Group, as shown in Panel A of page 4 of Exhibit JRW-10, the medians range from 4.0% to 5.5%, with an average of the medians of 4.9%. The range of the medians for the Vander Weide Proxy Group, shown in Panel B of page 4 of Exhibit JRW-10, is from 4.0 % to 6.0%, with an average of the medians of 5.2%.

Also provided on page 4 of Exhibit JRW-10 are the prospective sustainable growth rates for the companies in the two proxy groups as measured by *Value Line*'s average projected retention rate and return on shareholders' equity. As noted above, sustainable growth is a significant and a primary driver of long-run earnings growth. For the Electric and Vander Weide Proxy Groups, the median prospective sustainable growth rates are 3.7% and 4.2%, respectively.

Q. PLEASE ASSESS GROWTH FOR THE PROXY GROUPS AS MEASURED BY ANALYSTS' FORECASTS OF EXPECTED 5-YEAR EPS GROWTH.

A. Yahoo, Zacks, and Reuters collect, summarize, and publish Wall Street analysts' long-term EPS growth rate forecasts for the companies in the proxy groups. These forecasts are provided for the companies in the proxy groups on page 5 of Exhibit JRW-10. I have reported both the mean and median growth rates for the groups. Since there is considerable overlap in analyst coverage between the three services, and not all of the companies have forecasts from the different services, I have averaged the expected five-year EPS growth rates from the three services for each company to arrive at an expected EPS growth rate for each company. The mean/median of analysts' projected EPS growth rates for the Electric and Vander Weide Proxy Groups are 4.4%/5.4% and 5.4%/5.7%, respectively.[30]

Q. PLEASE SUMMARIZE YOUR ANALYSIS OF THE HISTORICAL AND PROSPECTIVE GROWTH OF THE PROXY GROUPS.

A. Page 6 of Exhibit JRW-10 shows the summary DCF growth rate indicators for the proxy groups.

[30] Given variation in the measures of central tendency of analysts' projected EPS growth rates proxy groups, I have considered both the means and medians figures in the growth rate analysis.

The historical growth rate indicators for my Electric Proxy Group imply a baseline growth rate of 4.2%. The average of the projected EPS, DPS, and BVPS growth rates from *Value Line* is 4.9%, and *Value Line*'s projected sustainable growth rate is 3.7%. The projected EPS growth rates of Wall Street analysts for the Electric Proxy Group are 4.4% and 5.4% as measured by the mean and median growth rates. The overall range for the projected growth rate indicators (ignoring historical growth) is 3.7% to 5.4%. Giving primary weight to the projected EPS growth rate of Wall Street analysts, I believe that the appropriate projected growth rate is 5.0%. This growth rate figure is clearly in the upper end of the range of historic and projected growth rates for the Electric Proxy Group.

For the Vander Weide Proxy Group, the historical growth rate indicators indicate a growth rate of 4.2%. The average of the projected EPS, DPS, and BVPS growth rates from *Value Line* is 5.2%, and *Value Line*'s projected sustainable growth rate is 4.2%. The projected EPS growth rates of Wall Street analysts are 5.4% and 5.7% as measured by the mean and median growth rates. The overall range for the projected growth rate indicators is 4.2% to 5.6%. Giving primary weight to the projected EPS growth rate of Wall Street analysts, I believe that the appropriate projected growth rate range is 5.50%. This growth rate figure is clearly in the upper end of the range of historic and projected growth rates for the Vander Weide Proxy Group.

Q. BASED ON THE ABOVE ANALYSIS, WHAT ARE YOUR INDICATED COMMON EQUITY COST RATES FROM THE DCF MODEL FOR THE PROXY GROUPS?

A. My DCF-derived equity cost rates for the groups are summarized on page 1 of Exhibit JRW-10 and in Table 1 below.

Table 1
DCF-derived Equity Cost Rate/ROE

	Dividend Yield	1 + ½ Growth Adjustment	DCF Growth Rate	Equity Cost Rate
Electric Proxy Group	**3.40%**	**1.02500**	**5.00%**	**8.50%**
Vander Weide Proxy Group	**3.40%**	**1.02750**	**5.50%**	**9.00%**

The result for the Electric Proxy Group is the 3.40% dividend yield, times the one and one-half growth adjustment of 1.025, plus the DCF growth rate of 5.0%, which results in an equity cost rate of 8.50%. The result for the Vander Weide Proxy Group is 9.00%, which includes a dividend yield of 3.40%, an adjustment factor of 1.02750, and a DCF growth rate of 5.50%.

C. Capital Asset Pricing Model

Q. PLEASE DISCUSS THE CAPITAL ASSET PRICING MODEL ("CAPM").

A. The CAPM is a risk premium approach to gauging a firm's cost of equity capital. According to the risk premium approach, the cost of equity is the sum of the interest rate on a risk-free bond (R_f) and a risk premium (RP), as in the following:

$$k = R_f + RP$$

The yield on long-term U.S. Treasury securities is normally used as R_f. Risk premiums are measured in different ways. The CAPM is a theory of the risk and expected returns of common stocks. In the CAPM, two types of risk are associated with a stock: firm-specific risk or unsystematic risk, and market or systematic risk, which is measured by a firm's beta. The only risk that investors receive a return for bearing is systematic risk.

According to the CAPM, the expected return on a company's stock, which is also the equity cost rate (K), is equal to:

$$K = (R_f) + ß * [E(R_m) - (R_f)]$$

Where:

- *K* represents the estimated rate of return on the stock;
- $E(R_m)$ represents the expected return on the overall stock market. Frequently, the 'market' refers to the S&P 500;
- (R_f) represents the risk-free rate of interest;
- $[E(R_m) - (R_f)]$ represents the expected equity or market risk premium—the excess return that an investor expects to receive above the risk-free rate for investing in risky stocks; and
- *Beta*—(ß) is a measure of the systematic risk of an asset.

To estimate the required return or cost of equity using the CAPM requires three inputs: the risk-free rate of interest (R_f), the beta (ß), and the expected equity or market risk premium $[E(R_m) - (R_f)]$. R_f is the easiest of the inputs to measure – it is represented by the yield on long-term U.S. Treasury bonds. ß, the measure of systematic risk, is a little more difficult to measure because there are different opinions about what adjustments, if any, should be made to historical betas due to their tendency to regress to 1.0 over time. And finally, an even more difficult input to measure is the expected equity or market risk premium $(E(R_m) - (R_f))$. I will discuss each of these inputs below.

Q. PLEASE DISCUSS EXHIBIT JRW-11.

A. Exhibit JRW-11 provides the summary results for my CAPM study. Page 1 shows the results, and the following pages contain the supporting data.

Q. PLEASE DISCUSS THE RISK-FREE INTEREST RATE.

A. The yield on long-term U.S. Treasury bonds has usually been viewed as the risk-free rate of interest in the CAPM. The yield on long-term U.S. Treasury bonds, in turn, has been considered to be the yield on U.S. Treasury bonds with 30-year maturities.

Q. WHAT RISK-FREE INTEREST RATE ARE YOU USING IN YOUR CAPM?

A. As shown on page 2 of Exhibit JRW-11, the yield on 30-year U.S. Treasury bonds has been in the 2.5% to 4.0% range over the 2013–2016 time period. The 30-year Treasury yield is in the middle of this range. Given the recent range of yields and the possibility of higher interest rates, I use higher end 4.0% as the risk-free rate, or R_f, in my CAPM.

Q. DOES YOUR 4.0% RISK-FREE INTEREST RATE TAKE INTO CONSIDERATION FORECASTS OF HIGHER INTEREST RATES?

A. No, it does not. As I stated before, forecasts of higher interest rates have been notoriously wrong for a decade. My 4.0% risk-free interest rate takes into account the range of interest rates in the past and effectively synchronizes the risk-free rate with the market risk premium ("MRP"). The risk-free rate and the MRP are interrelated in that the MRP is developed in relation to the risk-free rate. As discussed below, my MRP is based on the results of many studies and surveys that have been published over time. Therefore, my risk-free interest rate of 4.0% is effectively a normalized risk-free rate of interest.

Q. WHAT BETAS ARE YOU EMPLOYING IN YOUR CAPM?

A. Beta (ß) is a measure of the systematic risk of a stock. The market, usually taken to be the S&P 500, has a beta of 1.0. The beta of a stock with the same price movement as the market also has a beta of 1.0. A stock whose price movement is greater than that of the market, such as a technology stock, is riskier than the market and has a beta greater than 1.0. A stock with below average price movement, such as that of a regulated public utility, is less risky than the market and has a beta less than 1.0. Estimating a stock's beta involves running a linear regression of a stock's return on the market return.

As shown on page 3 of Exhibit JRW-11, the slope of the regression line is the stock's ß. A steeper line indicates that the stock is more sensitive to the return on the overall market. This means that the stock has a higher ß and greater-than-average market risk. A less steep line indicates a lower ß and less market risk.

Several online investment information services, such as Yahoo and Reuters, provide estimates of stock betas. Usually these services report different betas for the same stock. The differences are usually due to: (1) the time period over which ß is measured; and (2) any adjustments that are made to reflect the fact that betas tend to regress to 1.0 over time. In estimating an equity cost rate for the proxy groups, I am using the betas for the companies as provided in the *Value Line Investment Survey*. As shown on page 3 of Exhibit JRW-11, the median betas for the companies in the Electric and Vander Weide Proxy Groups are 0.70 and 0.70, respectively.

Q. PLEASE DISCUSS THE MARKET RISK PREMIUM.

A. The MRP is equal to the expected return on the stock market (e.g., the expected return on the S&P 500, $E(R_m)$ minus the risk-free rate of interest (R_f)). The MRP is the difference in the expected total return between investing in equities and investing in "safe" fixed-income assets, such as long-term government bonds. However, while the MRP is easy to define conceptually, it is difficult to measure because it requires an estimate of the expected return on the market - $E(R_m)$. As is discussed below, there are different ways to measure $E(R_m)$, and studies have come up with significantly different magnitudes for $E(R_m)$. As Merton Miller, the 1990 Nobel Prize winner in economics indicated, $E(R_m)$ is very difficult to measure and is one of the great mysteries in finance.[31]

Q. PLEASE DISCUSS THE ALTERNATIVE APPROACHES TO ESTIMATING THE MRP.

A. Page 4 of Exhibit JRW-11 highlights the primary approaches to, and issues in, estimating the expected MRP. The traditional way to measure the MRP was to use the difference between historical average stock and bond returns. In this case, historical

[31] Merton Miller, "The History of Finance: An Eyewitness Account," *Journal of Applied Corporate Finance*, 2000, P. 3.

stock and bond returns, also called *ex post* returns, were used as the measures of the market's expected return (known as the *ex-ante* or forward-looking expected return). This type of historical evaluation of stock and bond returns is often called the "Ibbotson approach" after Professor Roger Ibbotson, who popularized this method of using historical financial market returns as measures of expected returns. Most historical assessments of the equity risk premium suggest an equity risk premium range of 5% to 7% above the rate on long-term U.S. Treasury bonds. However, this can be a problem because: (1) *ex post* returns are not the same as *ex ante* expectations; (2) market risk premiums can change over time, increasing when investors become more risk-averse and decreasing when investors become less risk-averse; and (3) market conditions can change such that *ex post* historical returns are poor estimates of *ex ante* expectations.

The use of historical returns as market expectations has been criticized in numerous academic studies as discussed later in my testimony. The general theme of these studies is that the large equity risk premium discovered in historical stock and bond returns cannot be justified by the fundamental data. These studies, which fall under the category "*Ex Ante* Models and Market Data," compute *ex ante* expected returns using market data to arrive at an expected equity risk premium. These studies have also been called "Puzzle Research" after the famous study by Mehra and Prescott in which the authors first questioned the magnitude of historical equity risk premiums relative to fundamentals.[32]

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[32] Rajnish Mehra & Edward C. Prescott, "The Equity Premium: A Puzzle," *Journal of Monetary Economics,* 145 (1985).

In addition, there are a number of surveys of financial professionals regarding the MRP. There have also been several published surveys of academics on the equity risk premium. *CFO Magazine* conducts a quarterly survey of CFOs, which includes questions regarding their views on the current expected returns on stocks and bonds. Usually, over 500 CFOs participate in the survey.[33] Questions regarding expected stock and bond returns are also included in the Federal Reserve Bank of Philadelphia's annual survey of financial forecasters, which is published as the *Survey of Professional Forecasters*.[34] This survey of professional economists has been published for almost fifty years. In addition, Pablo Fernandez conducts annual surveys of financial analysts and companies regarding the equity risk premiums they use in their investment and financial decision-making.[35]

Q. PLEASE PROVIDE A SUMMARY OF THE MRP STUDIES.

A. Derrig and Orr (2003), Fernandez (2007), and Song (2007) have completed the most comprehensive reviews to date of the research on the MRP.[36] Derrig and Orr's study evaluated the various approaches to estimating MRPs, as well as the issues with the alternative approaches and summarized the findings of the published research on

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[33] *See* DUKE/CFO Magazine Global Business Outlook Survey, www.cfosurvey.org, December, 2016.

[34] Federal Reserve Bank of Philadelphia, *Survey of Professional Forecasters (Feb, 2016).* The Survey of Professional Forecasters was formerly conducted by the American Statistical Association ("ASA") and the National Bureau of Economic Research ("NBER") and was known as the ASA/NBER survey. The survey, which began in 1968, is conducted each quarter. The Federal Reserve Bank of Philadelphia, in cooperation with the NBER, assumed responsibility for the survey in June 1990.

[35] Pablo Fernandez, Alberto Ortiz and Isabel Fernandez Acín, "Market Risk Premium used in 71 countries in 2016: a survey with 6,932 answers: survey," May 9, 2016.

[36] *See* Richard Derrig & Elisha Orr, "Equity Risk Premium: Expectations Great and Small," Working Paper (version 3.0), Automobile Insurers Bureau of Massachusetts, (August 28, 2003); Pablo Fernandez, "Equity Premium: Historical, Expected, Required, and Implied," IESE Business School Working Paper, (2007); Zhiyi Song, "The Equity Risk Premium: An Annotated Bibliography," CFA Institute, (2007).

the MRP. Fernandez examined four alternative measures of the MRP – historical, expected, required, and implied. He also reviewed the major studies of the MRP and presented the summary MRP results. Song provides an annotated bibliography and highlights the alternative approaches to estimating the MRP.

Page 5 of Exhibit JRW-11 provides a summary of the results of the primary risk premium studies reviewed by Derrig and Orr, Fernandez, and Song, as well as other more recent studies of the MRP. In developing page 5 of Exhibit JRW-11, I have categorized the studies as discussed on page 4 of Exhibit JRW-11. I have also included the results of studies of the "Building Blocks" approach to estimating the equity risk premium. The Building Blocks approach is a hybrid approach employing elements of both historical and *ex ante* models.

Q. PLEASE DISCUSS PAGE 5 OF EXHIBIT JRW-11.

A. Page 5 of Exhibit JRW-11 provides a summary of the results of the MRP studies that I have reviewed. These include the results of: (1) the various studies of the historical risk premium, (2) *ex ante* MRP studies, (3) MRP surveys of CFOs, financial forecasters, analysts, companies and academics, and (4) the Building Blocks approach to the MRP. There are results reported for over forty studies, and the median MRP is 4.63%.

Q. PLEASE HIGHLIGHT THE RESULTS OF THE MORE RECENT RISK PREMIUM STUDIES AND SURVEYS.

A. The studies cited on page 5 of Exhibit JRW-11 include every MRP study and survey I could identify that was published over the past decade and that provided an MRP estimate. Most of these studies were published prior to the financial crisis that began in 2008. In addition, some of these studies were published in the early 2000s at the market peak. It should be noted that many of these studies (as indicated) used data over long periods of time (as long as fifty years of data) and so were not estimating an MRP as of a specific point in time (e.g., the year 2001). To assess the effect of the earlier studies on the MRP, I have reconstructed page 5 of Exhibit JRW-11 on page 6 of Exhibit JRW-11; however, I have eliminated all studies dated before January 2, 2010. The median for this subset of studies is 4.95%.

Q. GIVEN THESE RESULTS, WHAT MRP ARE YOU USING IN YOUR CAPM?

A. Much of the data indicates that the market risk premium is in the 4.0% to 6.0% range. Several recent studies (such as Damodaran, American Appraisers, Duarte and Rosa, Duff & Phelps, and the CFO Survey have suggested an increase in the market risk premium. Therefore, I will use 5.5%, which is in the upper end of the range, as the market risk premium or MRP.

Q. IS YOUR *EX ANTE* MRP CONSISTENT WITH THE MRPs USED BY CFOs?

A. Yes. In the December 2016 CFO survey conducted by *CFO Magazine* and Duke University, which included approximately 300 responses, the expected 10-year MRP was 3.47%.[37]

[37] *Id*. p. 36.

Q. IS YOUR *EX ANTE* MRP CONSISTENT WITH THE MRPs OF PROFESSIONAL FORECASTERS?

A. The financial forecasters in the previously referenced Federal Reserve Bank of Philadelphia survey projected both stock and bond returns. In the February 2016 survey, the median long-term expected stock and bond returns were 5.34% and 3.44%, respectively. This provides an expected MRP of 1.90% (5.34%-3.44%).

Q. IS YOUR *EX ANTE* MRP CONSISTENT WITH THE MRPs OF FINANCIAL ANALYSTS AND COMPANIES?

A. Yes. Pablo Fernandez published the results of his 2016 survey of academics, financial analysts, and companies.[38] This survey included over 4,000 responses. The median MRP employed by U.S. analysts and companies was 5.3%.

Q. IS YOUR *EX ANTE* MRP CONSISTENT WITH THE MRPs OF FINANCIAL ADVISORS?

A. Yes. Duff & Phelps is a well-known valuation and corporate finance advisor that publishes extensively on the cost of capital. As of 2016, Duff & Phelps recommended using a 5.5% MRP for the U.S.[39]

Q. WHAT EQUITY COST RATE IS INDICATED BY YOUR CAPM ANALYSIS?

[38] *Ibid.* p. 3.
[39] *See* http://www.duffandphelps.com/insights/publications/cost-of-capital/index.

A. The results of my CAPM study for the proxy groups are summarized on page 1 of Exhibit JRW-11 and in Table 2 below.

Table 2
CAPM-derived Equity Cost Rate/ROE
$K = (R_f) + ß * [E(R_m) - (R_f)]$

	Risk-Free Rate	Beta	Equity Risk Premium	Equity Cost Rate
Electric Proxy Group	4.0%	0.70	5.5%	7.9%
Vander Weide Proxy Group	4.0%	0.70	5.5%	7.9%

For the Electric Proxy Group, the risk-free rate of 4.0% plus the product of the beta of 0.70 times the equity risk premium of 5.5% results in a 7.9% equity cost rate. For the Vander Weide Proxy Group, the risk-free rate of 4.0% plus the product of the beta of 0.70 times the equity risk premium of 5.5% results in a 7.9% equity cost rate.

D. Equity Cost Rate Summary

Q. PLEASE SUMMARIZE THE RESULTS OF YOUR EQUITY COST RATE STUDIES.

A. My DCF analyses for the Electric and Vander Weide Proxy Groups indicate equity cost rates of 8.50% and 9.00%, respectively. The CAPM equity cost rates for the Electric and Vander Weide Proxy Groups are 7.9% and 7.9%.

Table 3
ROEs Derived from DCF and CAPM Models

	DCF	CAPM
Electric Proxy Group	8.50%	7.90%
Vander Weide Proxy Group	9.00%	7.90%

Q. GIVEN THESE RESULTS, WHAT IS YOUR ESTIMATED EQUITY COST RATE FOR THE GROUPS?

A. Given these results, I conclude that the appropriate equity cost rate for companies in the Electric and Vander Weide Proxy Groups is in the 7.90% to 9.00% range. Because I give primary weight to the DCF results, I believe that the appropriate equity cost rate range is 8.75% to 9.00%. Given the recent increase in interest rates, I will use the midpoint of this range, 8.875%, as the equity cost rate of for Gulf Power.

Q. PLEASE INDICATE WHY AN EQUITY COST RATE OF 8.875% IS APPROPRIATE FOR THE ELECTRIC OPERATIONS OF GULF POWER.

A. There are a number of reasons why an equity cost rate of 8.875% is appropriate and fair for the Company in this case:

1. I have employed a capital structure that has a higher common equity ratio and therefore slightly lower financial risk than the capital structures of the two proxy groups.

2. As shown in Exhibits JRW-2 and JRW-3, capital costs for utilities, as indicated by long-term bond yields, are still at low levels. In addition, given low inflationary expectations and slow global economic growth, interest rates are likely to remain at low levels for some time.

3. As shown in Exhibit JRW-8, the electric utility industry is among the lowest risk industries in the U.S. as measured by beta. As such, the cost of equity capital for this industry is among the lowest in the U.S., according to the CAPM.

4. The investment risk of Gulf Power, as indicated by the Company's S&P and Moody's issuer credit ratings of A- and A2, is below the investment risk of the two proxy groups, with average S&P and Moody's ratings of BBB+ and Baa1.

5. These authorized ROEs for electric utilities have declined from 10.01% in 2012, to 9.8% in 2013, to 9.76% in 2014, 9.58% in 2015, and 9.64% in the first three quarters of 2016, according to Regulatory Research Associates.[40] In my opinion, these authorized ROEs have lagged behind capital market cost rates, or in other words, authorized ROEs have been slow to reflect low capital market cost rates. This has been especially true in recent years as some state commissions have been reluctant to authorize ROEs below 10%. However, the trend has been towards lower ROEs, and the norm now is below ten percent. Hence, I believe that my recommended ROE reflects the low capital cost rates in today's markets, and these low capital cost rates are finally being recognized by state utility commissions.

Q. PLEASE DISCUSS YOUR RECOMMENDATION IN LIGHT OF A RECENT MOODY'S PUBLICATION.

A. Moody's published an article on utility ROEs and credit quality. In the article, Moody's recognizes that authorized ROEs for electric and gas companies are declining due to lower interest rates. The article explains:

> The credit profiles of US regulated utilities will remain intact over the next few years despite our expectation that regulators will continue to trim the sector's profitability by lowering its authorized returns on equity (ROE). Persistently low interest rates and a comprehensive suite of cost recovery mechanisms ensure a low

[40] *Regulatory Focus*, Regulatory Research Associates, January, 2016. The electric utility authorized ROEs exclude the authorized ROEs in Virginia, which include generation adders.

> business risk profile for utilities, prompting regulators to scrutinize their profitability, which is defined as the ratio of net income to book equity. We view cash flow measures as a more important rating driver than authorized ROEs, and we note that regulators can lower authorized ROEs without hurting cash flow, for instance by targeting depreciation, or through special rate structures.[41]

Moody's indicates that with the lower authorized ROEs, electric and gas companies are earning ROEs of 9.0% to 10.0%, yet this is not impairing their credit profiles and is not deterring them from raising record amounts of capital. With respect to authorized ROEs, Moody's recognizes that utilities and regulatory commissions are having trouble justifying higher ROEs in the face of lower interest rates and cost recovery mechanisms.

> Robust cost recovery mechanisms will help ensure that US regulated utilities' credit quality remains intact over the next few years. As a result, falling authorized ROEs are not a material credit driver at this time, but rather reflect regulators' struggle to justify the cost of capital gap between the industry's authorized ROEs and persistently low interest rates. We also see utilities struggling to defend this gap, while at the same time recovering the vast majority of their costs and investments through a variety of rate mechanisms.[42]

Overall, this article further supports the prevailing/emerging belief that lower authorized ROEs are unlikely to hurt the financial integrity of utilities or their ability to attract capital.

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[41] Moody's Investors Service, "Lower Authorized Equity Returns Will Not Hurt Near-Term Credit Profiles," March 10, 2015.

[42] Moody's Investors Service, "Lower Authorized Equity Returns Will Not Hurt Near-Term Credit Profiles," March 10, 2015.

Q. DO YOU BELIEVE THAT YOUR 8.875% ROE RECOMMENDATION MEETS THE *HOPE* AND *BLUEFIELD* STANDARDS?

A. Yes, I do. As previously noted, according to the *Hope* and *Bluefield* decisions, returns on capital should be: (1) comparable to returns investors expect to earn on other investments of similar risk; (2) sufficient to assure confidence in the company's financial integrity; and (3) adequate to maintain and support the company's credit and to attract capital. Gulf Power's S&P and Moody's issuer credit ratings of A- and A2 are above the average of the Electric and Vander Weide Proxy Groups of BBB+ and Baa1. This indicates that Gulf Power's investment risk is below that of the two proxy groups. And while my recommendation is below the average authorized ROEs for electric utility companies, it reflects the downward trend in authorized and earned ROEs of electric utility companies. As is highlighted in the Moody's publication cited above that states, despite authorized and earned ROEs below 10%, the credit quality of electric and gas companies has not been impaired but, in fact, has improved and utilities are raising about $50 billion per year in capital. Major positive factors in the improved credit quality of utilities are regulatory ratemaking mechanisms. Therefore, I do believe that my ROE recommendation meets the criteria established in the *Hope* and *Bluefield* decisions.

VII. CRITIQUE OF GULF POWER'S RATE OF RETURN TESTIMONY

Q. PLEASE SUMMARIZE THE COMPANY'S RATE OF RETURN RECOMMENDATION.

A. The Company's rate of return recommendation from investor-provided capital is summarized on page 1 of Exhibit JRW-12.

Q. PLEASE REVIEW DR. VANDER WEIDE'S EQUITY COST RATE APPROACHES AND RESULTS.

A. Dr. Vander Weide has developed a proxy group of electric utility companies and employs DCF, CAPM, and RP equity cost rate approaches. Dr. Vander Weide's equity cost rate estimates for the Company are summarized on page 1 of Exhibit JRW-13. The average of his equity cost rate approaches is 10.4%. He then adds another 0.60% as a leverage adjustment to arrive at a ROE recommendation for Gulf Power of 11.0%. As I discuss below, there are a number of issues with the inputs, applications, and results of his equity cost rate models.

Q. WHAT ISSUES DO YOU HAVE WITH THE COMPANY'S COST OF CAPITAL POSITION?

A. The most significant areas of disagreement in measuring the Company's cost of capital are:

(1) The Company's proposed capital structure, which includes a higher common equity ratio and therefore lower financial risk than other electric utilities. This issue was previously addressed.

(2) Dr. Vander Weide's analyses and ROE results and recommendations are based on the assumption of higher interest rates and capital costs. I review current market

conditions and conclude that interest rates and capital costs are at low levels and are likely to remain low for some time.

(3) Dr. Vander Weide's DCF equity cost rate estimates, and in particular, (a) his adjustments for the quarterly payment of dividends and flotation costs; and; (b) his exclusive reliance on the overly optimistic and upwardly biased EPS growth rate forecasts of Wall Street analysts and *Value Line.*

(4) The projected interest rates and market or equity risk premiums in Dr. Vander Weide's CAPM and RP approaches are inflated and are not reflective of market realities or expectations.

(5) Dr. Vander Weide has made inappropriate flotation cost and leverage adjustments to his DCF, CAPM, and RP equity cost rates.

A. The Company's DCF Approach

Q. PLEASE SUMMARIZE DR. VANDER WEIDE'S DCF ESTIMATES.

A. On pages 23-33 of his testimony and in Schedules 1 and 2 of Exhibit No. (JVW-1), Dr. Vander Weide develops an equity cost rate by applying a DCF model to his groups of electric utility companies. In the traditional DCF approach, the equity cost rate is the sum of the dividend yield and expected growth. Dr. Vander Weide adjusts the spot dividend yield to reflect the quarterly payment of dividends. Dr. Vander Weide uses one measure of DCF expected growth - the projected EPS growth rate. He uses the EPS growth rate forecasts from Wall Street analysts as provided by I/B/E/S. He also includes a flotation cost adjustment of five percent. Dr. Vander Weide's DCF results are provided in Panel B of Exhibit JRW-13. Based on these figures, Dr. Vander Weide claims that the DCF equity cost rate for groups is 9.7%, respectively.

Q. WHAT ARE THE ERRORS IN DR. VANDER WEIDE'S DCF ANALYSES?

A. There are three errors: (1) the quarterly dividend yield adjustment is excessive; (2) the projected DCF growth rate is based entirely on overly optimistic and upwardly-biased EPS growth rate estimates of Wall Street analysts; and (3) the flotation cost adjustment is inappropriate. These issues are discussed below.

1. DCF Dividend Yield Adjustment

Q. PLEASE DISCUSS THE ADJUSTMENT TO THE DIVIDEND YIELD TO REFLECT THE QUARTERLY PAYMENT OF DIVIDENDS.

A. Dr. Vander Weide uses DCF dividend yields of 3.64% for his electric utility group. In Appendix 2 of his testimony, Dr. Vander Weide discusses the adjustments he makes to his spot dividend yields to account for the quarterly payment of dividends. This includes an adjustment to reflect the time value of money. However, the quarterly timing adjustment is in error and results in an overstated equity cost rate. First, as discussed above, the appropriate dividend yield adjustment for growth in the DCF model is the expected dividend for the next quarter multiplied by four. Thus, Dr. Vander Weide's quarterly adjustment procedure is inconsistent with this approach.

Second, Dr. Vander Weide's approach presumes that investors require additional compensation during the coming year because their dividends are paid out quarterly instead of being paid all in a lump sum. Therefore, he compounds each dividend to the end of the year using the long-term growth rate as the compounding factor. The error in this logic and approach is that the investor receives the money from each quarterly dividend and has the option to reinvest it as he or she chooses. This reinvestment generates its own compounding; however, it is outside of the dividend payments of the issuing company. Dr. Vander Weide's approach serves to duplicate this compounding process, thereby inflating the return to the investor. Finally, the notion that an adjustment is required to reflect the quarterly timing issue is refuted in a study by Richard Bower of Dartmouth College. Bower acknowledges the timing issue and downward bias addressed by Dr. Vander Weide. However, he demonstrates that this does not result in a biased required rate of return. He provides the following assessment:[43]

> ... authors are correct when they say that the conventional cost of equity calculation is a downward-biased estimate of the market discount rate. They are not correct, however, in concluding that it has a bias as a measure of required return. As a measure of required return, the conventional cost of equity calculation (K*), ignoring quarterly compounding and even without adjustment for fractional periods, serves very well.

Bower also makes the following observation on the issue:

> Too many rate cases have come and gone, and too many utilities have survived and sustained market prices above book, to make downward bias in the conventional calculation of required return a likely reality.

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[43] See Richard Bower, The N-Stage Discount Model and Required Return: A Comment," *Financial Review* (February 1992), pp. 141-9.

2. DCF Growth Rate

Q. PLEASE REVIEW DR. VANDER WEIDE'S DCF GROWTH RATE.

A. Dr. Vander Weide's DCF growth rate is the projected EPS growth rate forecasts of Wall Street analysts as compiled by I/B/E/S. Dr. Vander Weide employs an average DCF growth rate of 5.69% his group.

Q. WHY IS IT ERRONEOUS TO RELY EXCLUSIVELY ON THE EPS FORECASTS OF WALL STREET ANALYSTS IN ARRIVING AT A DCF GROWTH RATE?

A. There are several issues with using the EPS growth rate forecasts of Wall Street analysts and *Value Line* as DCF growth rates. First, the appropriate growth rate in the DCF model is the dividend growth rate, not the earnings growth rate. Therefore, in my opinion, consideration must be given to other indicators of growth, including prospective dividend growth, internal growth, as well as projected earnings growth. Second, and most significantly, it is well-known and recognized that the long-term EPS growth rate forecasts of Wall Street securities analysts are overly optimistic and upwardly biased. This has been demonstrated in a number of academic studies over the years as I discussed earlier in this testimony. Hence, using these growth rates as a DCF growth rate will provide an overstated equity cost rate.

Q. PLEASE DISCUSS DR. VANDER WEIDE'S RELIANCE ON THE PROJECTED GROWTH RATES OF WALL STREET ANALYSTS AND *VALUE LINE*.

A. It seems highly unlikely that investors today would rely excessively on the EPS growth rate forecasts of Wall Street analysts and ignore other growth rate measure in arriving at expected growth. As I previously indicated, the appropriate growth rate in the DCF model is the dividend growth rate, not the earnings growth rate. Hence, consideration must be given to other indicators of growth, including historic growth prospective dividend growth, internal growth, as well as projected earnings growth. In addition, a recent study by Lacina, Lee, and Xu (2011) has shown that analysts' long-term earnings growth rate forecasts are not more accurate at forecasting future earnings than naïve random walk forecasts of future earnings.[44] As such, the weight given to analysts' projected EPS growth rate should be limited. Finally, and most significantly, it is well-known that the long-term EPS growth rate forecasts of Wall Street securities analysts are overly optimistic and upwardly biased. Therefore, using these growth rates as a DCF growth rate produces an overstated equity cost rate. A recent study by Easton and Sommers (2007) found that optimism in analysts' growth rate forecasts leads to an upward bias in estimates of the cost of equity capital of almost 3.0 percentage points.[45] These issues were previously discussed herein.

[44] M. Lacina, B. Lee and Z. Xu, *Advances in Business and Management Forecasting (Vol. 8),* Kenneth D. Lawrence, Ronald K. Klimberg (ed.), Emerald Group Publishing Limited, pp.77-101.
[45] Easton, P., & Sommers, G. (2007). Effect of analysts' optimism on estimates of the expected rate of return implied by earnings forecasts. *Journal of Accounting Research*, 45(5), 983–1015.

Q. DR. VANDER WEIDE HAS DEFENDED THE USE OF ANALYSTS' EPS FORECASTS IN HIS DCF MODEL BY CITING A STUDY HE PUBLISHED WITH DR. WILLARD CARLETON. PLEASE DISCUSS DR. VANDER WEIDE'S STUDY.

A. Dr. Vander Weide cites the study on pages 29-30 of his testimony. In the study, Dr. Vander Weide performs a linear regression of a company's stock price to earnings ratio (P/E) on the dividend yield payout ratio (D/E), alternative measures of growth (g), and four measures of risk (beta, covariance, r-squared, and the standard deviation of analysts' growth rate projections). He performed the study for three one-year periods – 1981, 1982, and 1983 – and used a sample of approximately sixty-five companies. His results indicated that regressions measuring growth as analysts' forecasted EPS growth were more statistically significant that those using various historic measures of growth. Consequently, he concluded that analysts' growth rates are superior measures of expected growth.

Q. PLEASE CRITIQUE DR. VANDER WEIDE'S STUDY.[46]

A. Before highlighting the errors in the study, it is important to note that the study was published more than twenty-five years ago, used a sample of only sixty-five companies, and evaluated a three-year time period (1981-83) that was over thirty years ago. Since that time, many more exhaustive studies have been performed using significantly larger data bases and, from these studies, much has been learned about

[46] On page 30 of his testimony, Dr. Vander Weide cites a 2003 updated version of the study. However, this study is not published in a refereed journal and the data and results cannot be verified. Nonetheless, the updated study contains the same methodological errors addressed here as the original study.

Wall Street analysts and their stock recommendations and earnings forecasts. Nonetheless, there are several errors that invalidate the results of Dr. Vander Weide's study.

Q. PLEASE DESCRIBE THE ERRORS IN DR. VANDER WEIDE'S STUDY.

A. The primary error in the study is that his regression model is misspecified. As a result, he cannot conclude whether one growth rate measure is better than the other. The misspecification results from the fact that Dr. Vander Weide did not actually employ a modified version of the DCF model. Instead, he used a "linear approximation." He used the approximation so that he did not have to measure k, the investors' required return, directly; instead, he used some proxy variables for risk. The error in this approach is there can be an interaction between growth (g) and investors' required return (k) which could lead him to conclude that one growth rate measure is superior to others. Furthermore, due to this problem, analysts' EPS forecasts could be upwardly biased and still appear to provide better measures of expected growth.

There are other errors in the study as well that further invalidate the results. Dr. Vander Weide does not use both historic and analysts' projections for growth rate measures in the same regression to assess if both historic data and forecasts should be used together to measure expected growth. In addition, he did not perform any tests to determine if the difference between historic and projected growth measures is statistically significant. Without such tests, he cannot make any valid conclusions about the superiority of one measure versus the other.

3. Flotation Cost Adjustment

Q. PLEASE DISCUSS DR. VANDER WEIDE'S ADJUSTMENT FOR FLOTATION COSTS.

A. Dr. Vander Weide claims that an upward adjustment to the equity cost rate is necessary for flotation costs. This adjustment factor is erroneous for several reasons. First, the Company has not identified any actual test-year flotation costs for the Company. Therefore, the Company is requesting annual revenues in the form of a higher return on equity for flotation costs that have not been identified. Second, it is commonly argued that a flotation cost adjustment (such as that used by the Company) is necessary to prevent the dilution of the existing shareholders. In this case, the argument goes, a flotation cost adjustment would be justified by reference to bonds and the manner in which issuance costs are recovered by including the amortization of bond flotation costs in annual financing costs. However, this is incorrect for several reasons:

(1) If an equity flotation cost adjustment is similar to a debt flotation cost adjustment, the fact that the market-to-book ratios for electric utility companies are over 1.0X actually suggests that there should be a flotation cost reduction (and not an increase) to the equity cost rate. This is because when (a) a bond is issued at a price in excess of face or book value, and (b) the difference between market price and the book value is greater than the flotation or issuance costs, then the result is the cost of that debt is lower than the coupon rate of the debt. The amount by which market values of electric utility companies are in excess of book values is much greater than flotation costs. Thus, if common stock flotation costs were exactly like bond flotation costs, and

one was making an explicit flotation cost adjustment to the cost of common equity, the adjustment would be downward;

(2) If a flotation cost adjustment is needed to prevent dilution of existing stockholders' investment, then the reduction of the book value of stockholder investment associated with flotation costs can occur only when a company's stock is selling at a market price at/or below its book value. As noted above, electric utility companies are selling at market prices well in excess of book value. Hence, when new shares are sold, existing shareholders realize an increase in the book value per share of their investment, not a decrease;

(3) Flotation costs consist primarily of the underwriting spread or fee and not out-of-pocket expenses. On a per share basis, the underwriting spread is the difference between the price the investment banker receives from investors and the price the investment banker pays to the company. Hence, these are not expenses that must be recovered through the regulatory process. Furthermore, the underwriting spread is known to the investors who are buying the new issue of stock; so they are well aware of the difference between the price they are paying to buy the stock and the price that the Company is receiving. The offering price which they pay is what matters when investors decide to buy a stock based on its expected return and risk prospects. Therefore, the company is not entitled to an adjustment to the allowed return to account for those costs; and

(4) Flotation costs, in the form of the underwriting spread, are a form of a transaction cost in the market. They represent the difference between the price paid by investors and the amount received by the issuing company. Whereas the Company

believes that it should be compensated for these transactions costs, they have not accounted for other market transaction costs in determining a cost of equity for the Company. Most notably, brokerage fees that investors pay when they buy shares in the open market are another market transaction cost. Brokerage fees increase the effective stock price paid by investors to buy shares. If the Company had included these brokerage fees or transaction costs in their DCF analysis, the higher effective stock prices paid for stocks would lead to lower dividend yields and equity cost rates. This would result in a downward adjustment to their DCF equity cost rate.

A. Risk Premium ("RP") Approach

Q. PLEASE REVIEW DR. VANDER WEIDE'S RP ANALYSES.

A. In Schedules 3, 4, and 5 of Exhibit No. (JVW-1), Dr. Vander Weide develops an equity cost rate using expected (*ex ante*) and historical RP models. Dr. Vander Weide's RP results are provided in Panels C and D of Exhibit JRW-13**.** He reports RP equity cost rates of 10.90% using the expected return approach and 10.60% using the historical RP approach.

In his expected RP approach, Dr. Vander Weide computes an expected stock return by applying the DCF model to the S&P utilities and the S&P 500 and uses the EPS growth rate forecasts of Wall Street analysts as his growth rate. He then subtracts the yield on 'A' rated utility bonds. In his historic RP model, Dr. Vander Weide computes a historical risk premium as the difference in the arithmetic mean stock and bond returns.

The stock returns are computed for different time periods for different indexes, including S&P and Moody's electric utility indexes as well as the S&P 500.

Q. WHAT ARE THE ERRORS IN DR. VANDER WEIDE'S RP ANALYSES?

A. The errors in Dr. Vander Weide's RP equity cost rate approaches include: (1) an inflated base interest rate; (2) an excessive risk premium which is based on the historical relationship between stock and bond returns; and (3) the inclusion of a flotation cost adjustment of 0.20%. The errors in the flotation cost issue have already been addressed. The other two issues are discussed below.

1. Inflated Base Yield

Q. PLEASE DISCUSS THE BASE YIELD OF DR. VANDER WEIDE'S RISK PREMIUM ANALYSIS.

A. The base yield in Dr. Vander Weide's RP analysis is the projected yield on 'A' rated utility bonds. There are two issues with his projected 6.20% 'A' rated utility bond yield. First, the yield is well above current market rates. As shown on Page 1 of Exhibit JRW-3, the current yield on long-term, 'A' rated public utility bonds is about 4.0%. As such, his base interest rate is vastly overstated and he provides no sound basis for using this overstated rate. Second, Vander Weide's base yield is erroneous and inflates the required return on equity in two ways. First, long-term bonds are subject to interest rate risk, a risk which does not affect common stockholders since dividend payments (unlike bond interest payments) are not fixed but tend to increase over time. Second, the base yield in Dr. Vander Weide's risk premium study is subject to credit risk since it is not default risk-free like an obligation of the U.S. Treasury. As a result, its yield-to-maturity includes a premium for default risk and therefore is above its expected return. Hence, using such a bond's yield-to-maturity as a base yield results in an overstatement of investors' return expectations.

2. Excessive Risk Premium

Q. DR. VANDER WEIDE EMPLOYS A DCF-BASED *EX ANTE* RISK PREMIUM APPROACH. PLEASE DISCUSS THE ERRORS IN THIS APPROACH.

A. Dr. Vander Weide computes a DCF-based equity risk premium. He estimates an expected return using the DCF model, and subtracts a concurrent measure of interest rates. He computes the expected return in this RP approach by applying the DCF model to a group of electric utility companies on a monthly basis over the 1998-2015 time periods. He employs the EPS growth rate forecasts of Wall Street analysts as the DCF growth rate. To compute the RP, he then subtracts the yield on 'A' rated utility bonds.

The primary error in this approach is that he uses the EPS growth rate forecasts of Wall Street analysts as the one and only measure of growth in the DCF model. The errors in this issue were addressed above. As I have discussed, analysts' EPS growth rate forecasts are highly inaccurate estimates of future earnings (a naïv**e** random walk model performs just as well), and are overly optimistic and upwardly-biased measures of actual future EPS growth for companies in general as well as for utilities. As a result, Dr. Vander Weide's ex-ante risk premium is overstated because his expected return measure is inflated.

Q. PLEASE REVIEW DR. VANDER WEIDE'S *EX POST* OR HISTORIC RP STUDY.

A. Dr. Vander Weide performs an ex-post or historical RP study that appears in Schedules 4 and 5 of Exhibit (JVW-1). This study involves an assessment of the historical differences between the S&P Public Utility Index and the S&P 500 stock returns and public utility bond returns over various time periods between the years 1937-2015. From the results of his study, he concludes that an appropriate risk premium is 3.9% using S&P public utility stock returns and 4.5% using S&P 500 stock returns.

Q. FIRST, HAS DR. VANDER WEIDE PROVIDED ANY EMPIRICAL EVIDENCE WHATSOEVER THAT THE S&P 500 COMPANIES ARE APPROPRIATE RISK PROXIES FOR ELECTRIC UTILITY COMPANIES?

A. No, he has not. Dr. Vander Weide has provided no such evidence, and as I have previously indicated, electric utilities are among the least risky companies in the U.S. As a result, because Dr. Vander Weide has provided no evidence that the S&P 500 is an appropriate proxy for electric utility companies, the results of this study should be ignored.

Q. PLEASE ADDRESS THE ISSUES INVOLVED IN USING HISTORICAL STOCK AND BOND RETURNS TO COMPUTE A FORWARD-LOOKING OR *EX ANTE* RISK PREMIUM.

A. As previously discussed, one way to measure a market risk premium is to compute the difference between historic stock and bond returns. However, this approach can produce differing results depending on several factors, including the measure of central tendency used, the time period evaluated, and the stock and bond market index employed. In addition, there are a myriad of empirical problems in this approach, which result in historical market returns producing inflated estimates of expected risk premiums. Among the errors are the U.S. stock market survivorship bias (the "Peso Problem"), the company survivorship bias (only successful companies survive – poor companies do not survive), the measurement of central tendency (the arithmetic versus geometric mean), the historical time horizon used, the change in risk and required return over time, the downward bias in historical bond returns, and unattainable return bias (the Ibbotson procedure presumes monthly portfolio rebalancing).[47] The bottom line is that there are a number of empirical problems in using historical stock and bond returns to measure an expected equity risk premium.

C. CAPM Approach

Q. PLEASE DISCUSS DR. VANDER WEIDE'S CAPM.

A. In Schedules 6, 7, 8, and 9 of Exhibit No. (JVW-1), Dr. Vander Weide develops an equity cost rate using the CAPM. In Schedules 6 and 7 he employs a historical market

[47]These issues are addressed in a number of studies, including: Aswath. Damodaran, "Equity Risk Premiums (ERP): Determinants, Estimation and Implications – The 2015 Edition" NYU Working Paper, 2015, pp. 32-5; See Richard Roll, "On Computing Mean Returns and the Small Firm Premium," *Journal of Financial Economics*, pp. 371-86, (1983); Jay Ritter, "The Biggest Mistakes We Teach," *Journal of Financial Research* (Summer 2002); Bradford Cornell, *The Equity Risk Premium* (New York, John Wiley & Sons),1999, pp. 36-78; and J. P. Morgan, "The Most Important Number in Finance," p. 6.

risk premium and in Schedule 9 he uses an expected market risk premium. Dr. Vander Weide's CAPM results are provided in Panels E and F of Exhibit JRW-13**.** He reports CAPM equity cost rates of 10.10% using the historical CAPM and 10.80% using the expected CAPM. He includes a flotation cost adjustment of 0.20% in each.

Dr. Vander Weide uses a risk-free interest rate of 4.20% in each CAPM and betas from *Value Line*. Dr. Vander Weide employs two different measure of beta: (1) the average beta of 0.75 for his group as provided by *Value Line;* and (2) an historical beta of 0.90, which he computes as the ratio of the risk premium on the utility portfolio to the risk premium on the S&P 500.

Dr. Vander Weide's historical CAPM uses the Ibbotson return data and the market risk premium of 6.90% is calculated as the difference between the arithmetic mean stock return and the bond income return over the 1926-2015 period. Dr. Vander Weide develops his expected market risk premium for his CAPM of 7.70% in Schedule 9 of Exhibit JVW-1) by applying the DCF model to the companies in the S&P 500. Dr. Vander Weide estimates an expected market return of 11.90% using an adjusted dividend yield of 2.9% and an expected DCF growth rate of 9.0%.

Q. WHAT ARE THE ERRORS IN DR. VANDER WEIDE'S CAPM ANALYSIS?

A. There are several flaws with Dr. Vander Weide's CAPM: (1) his risk-free rate of 4.20%; (2) the "historical beta" of 0.90; (3) the historic and expected market risk premiums; and (4) the flotation cost adjustment.

1. Risk-Free Interest Rate

Q. PLEASE DISCUSS DR. VANDER WEIDE'S RISK-FREE RATE OF INTEREST IN HIS CAPM.

A. Dr. Vander Weide uses a risk-free rate of interest of 4.2% in his CAPM. This figure represents the average projected rate on twenty-year Treasury bonds by *Value Line* and EIA. The current rate on twenty-year Treasury bonds, as of January, 2017, is below 3.0%. As such, Dr. Vander Weide's risk-free interest rate is overstated.

2. "Historical Beta"

Q. PLEASE REVIEW DR. VANDER WEIDE'S "HISTORICAL BETA."

A. Dr. Vander Weide has created a new measure of beta – a "historical beta." As presented on page 3 of Exhibit JRW-11, beta is normally computed based on a regression of a company's stock return on the return of the market (i.e., the S&P 500). *Value L*ine then adjusts the beta from the regression for the tendency of betas to move toward the market average beta of 1.0 over time. As noted above, the average *Value L*ine beta for the companies in Dr. Vander Weide's proxy group is 0.75. Betas for utilities have been in this range over the past decade. Yet, Dr. Vander Weide's "historical beta" is a totally new measure of beta that is his own creation. He uses the ratio of the historical risk premium on the utility portfolio to the historical risk premium on the S&P 500 (5.34 ÷ 5.92 = 0.90).

Q. WHAT IS THE ERROR WITH THIS APPROACH?

A. Dr. Vander Weide's "historical beta" has no theoretical or empirical support in the CAPM literature, nor has it been endorsed or accepted by any leading scholars. Beta is a measure of systematic risk or undiversifiable risk. Dr. Vander Weide's historical beta is based on total risk and is not calculated based on traditional betas according to the CAPM.

3. Historical and Expected Market Risk Premiums

Q. PLEASE ADDRESS THE PROBLEMS WITH DR. VANDER WEIDE'S HISTORICAL CAPM.

A. Dr. Vander Weide historical CAPM uses a market risk premium of 6.9% which is based on the difference between the arithmetic mean stock and bond income returns over the 1926-2015 period. The errors associated with computing an expected equity risk premium using historical stock and bond returns were addressed earlier in this testimony. In short, there are a myriad of empirical problems, which result in historical market returns producing inflated estimates of expected risk premiums. These were discussed above and include U.S. stock market survivorship bias, the company survivorship bias, and unattainable return bias. In addition, in this case, Dr. Vander Weide has compounded the error by using the bond income return rather than the actual bond return. By omitting the price change component of the bond return, he has magnified the historical risk premium by not matching the returns on stock with the actual returns on bonds.

Q. PLEASE REVIEW THE ERRORS IN DR. VANDER WEIDE'S MARKET RISK PREMIUM IN HIS EXPECTED CAPM APPROACH.

A. Dr. Vander Weide develops an expected market risk premium for his CAPM of 7.70% in Schedule 9 of Exhibit JVW-1, by applying the DCF model to the S&P 500. Dr. Vander Weide estimates an expected market return of 11.9% using a dividend yield of 2.90% and an expected DCF growth rate of 9.0%. The expected DCF growth rate for the S&P 500 is the average of the expected EPS growth rates from I/B/E/S. This is the primary error in this approach. As previously discussed, the expected EPS growth rates of Wall Street analysts are overly optimistic and upwardly biased. In addition, as explained below, Dr. Vander Weide's projected EPS growth rate of 9.0% is inconsistent with economic and earnings growth in the U.S.

Q. BEYOND YOUR PREVIOUS DISCUSSION OF THE UPWARD BIAS IN WALL STREET ANALYSTS' AND *VALUE LINE*'S EPS GROWTH RATE FORECASTS, WHAT OTHER EVIDENCE CAN YOU PROVIDE THAT DR. VANDER WEIDE'S S&P 500 GROWTH RATE IS EXCESSIVE?

A. A long-term EPS growth rate of 9.0% is not consistent with historic as well as projected economic and earnings growth in the U.S for several reasons: (1) long-term EPS and economic growth, as measured by Gross Domestic Product ("GDP"), is about two-thirds of Dr. Vander Weide's projected EPS growth rate of 9.0%; (2) more recent trends in GDP growth, as well as projections of GDP growth, suggest slower economic and earnings growth in the future; and (3) over time, EPS growth tends to lag behind GDP growth.

The long-term economic, earnings, and dividend growth rate in the U.S. has only been in the 5% to 7% range. I performed a study of the growth in nominal GDP, S&P 500 stock price appreciation, and S&P 500 EPS and DPS growth since 1960. The results are provided on page 1 of Exhibit JRW-14, and a summary is given in the table below.

Table 4
GDP, S&P 500 Stock Price, EPS, and DPS Growth
1960-Present

Nominal GDP	**6.58%**
S&P 500 Stock Price	**6.69%**
S&P 500 EPS	**6.64%**
S&P 500 DPS	**5.76%**
Average	**6.42%**

The results are presented graphically on page 3 of Exhibit JRW-14. In sum, the historical long-run growth rates for GDP, S&P EPS, and S&P DPS are in the 5% to 7% range. By comparison, Dr. Vander Weide's long-run growth rate projection of 9.0% is vastly overstated. His estimates suggest that companies in the U.S. would be expected to: (1) increase their growth rate of EPS by over 50% in the future and (2) maintain that growth indefinitely in an economy that is expected to grow at about one-half of his projected growth rates. Neither of these outcomes is logical.

Q. DOES MORE RECENT DATA SUGGEST THAT THE U.S. ECONOMY GROWTH IS FASTER OR SLOWER THAN THE LONG-TERM DATA?

A. The more recent trends suggest lower future economic growth than the long-term historic GDP growth. The historic GDP growth rates for 10-, 20-, 30-, 40- and 50- years are presented in Panel A of page 2 of Exhibit JRW-14. These figures clearly suggest that nominal GDP growth in recent decades has slowed and that a figure in the range of 4.0% to 5.0% is more appropriate today for the U.S. economy. These figures demonstrate that Dr. Vander Weide's long-term EPS growth rate of 9.0% is even more inflated.

Table 5
Historic GDP Growth Rates

10-Year Average - 2006-2015	**3.28%**
20-Year Average - 1996-2015	**4.36%**
30-Year Average - 1986-2015	**4.87%**
40-Year Average - 1976-2015	**6.19%**
50-Year Average - 1966-2015	**6.65%**

Q. ARE THE LOWER GDP GROWTH RATES OF RECENT DECADES CONSISTENT WITH THE FORECASTS OF GDP GROWTH?

A. Yes, they are. A lower range is also consistent with long-term GDP forecasts. There are several forecasts of annual GDP growth that are available from economists and government agencies. These are listed on page 2 of Exhibit JRW-13. Economists, in the February 2016 *Survey of Professional Forecasters,* forecasted the mean 10-year nominal GDP growth rate to be 4.5%.[48] The U.S. Energy Information Administration, in its projections used in preparing *Annual Energy Outlook,* forecasted long-term GDP growth of 4.3% for the period 2013-2040.[49] The Congressional Budget Office, in its forecasts for the period 2015 to 2040, projected a nominal GDP growth rate of 4.1%.[50] Finally, the Social Security Administration, in its Annual OASDI Report, projected a

[48]Federal Reserve Bank of Philadelphia, *Survey of Professional Forecasters* (Feb. 2016), https://www.philadelphiafed.org/research-and-data/real-time-center/survey-of-professional-forecasters/.
[49]U.S. Energy Information Administration, *Table 20 of the Annual Energy Outlook 2016* (Sept. 15, 2016), http://www.eia.gov/forecasts/aeo/tables_ref.cfm.
[50]Congressional Budget Office, *The 2016 Long-term Budget Outlook* (July 2016), www.cbo.gov/publication/51129.

nominal GDP growth rate of 4.4% for the period 2013-2090.[51] These four forecasts and projections of GDP growth from economists and government agencies range from 4.1% to 4.5%.

Q. WHY IS PROJECTED GDP GROWTH RELEVANT TO DR. VANDER WEIDE'S LONG-TERM PROJECTED EPS GROWTH RATE OF 9.0%?

A. Brad Cornell of the California Institute of Technology published a study on GDP growth, earnings growth, and equity returns. He finds that long-term EPS growth in the U.S. is directly related to GDP growth, with GDP growth providing an upward limit on EPS growth. In addition, he finds that long-term stock returns are determined by long-term earnings growth. He concludes with the following observations:[52]

> The long-run performance of equity investments is fundamentally linked to growth in earnings. Earnings growth, in turn, depends on growth in real GDP. This article demonstrates that both theoretical research and empirical research in development economics suggest relatively strict limits on future growth. In particular, real GDP growth in excess of 3 percent in the long run is highly unlikely in the developed world. In light of ongoing dilution in earnings per share, this finding implies that investors should anticipate real returns on U.S. common stocks to average no more than about 4–5 percent in real terms.

Given current inflation in the 2% range, the results imply nominal expected stock market returns in the 7% to 8% range. As such, Dr. Vander Weide's projected earnings growth rate and implied expected stock market return and equity risk premium

[51] Social Security Administration, *2016 Annual Report of the Board of Trustees of the Old-Age, Survivors, and Disability Insurance (OASDI) Program* (June 22, 2016), http://www.ssa.gov/oact/tr/2016/X1_trLOT.html
[52] Bradford Cornell, "Economic Growth and Equity Investing," *Financial Analysts Journal* (January- February, 2010), p. 63.

are not indicative of the realities of the U.S. economy and stock market. As such, his expected CAPM equity cost rate is significantly overstated.

Q. PLEASE PROVIDE A SUMMARY ASSESSMENT OF DR. VANDER WEIDE'S MARKET RISK PREMIUMS.

A. Dr. Vander Weide's historical and expected market risk premiums are inflated due to errors and bias in his studies. Investment banks, consulting firms, and CFOs use the equity risk premium concept every day in making financing, investment, and valuation decisions. I have provided the results of recent surveys of CFOs, financial forecasters, analysts, and companies, which show their equity risk premium estimates are in the 4% to 5% range, not in the 6% to 8% range. On this issue, the opinions of these market participants are especially relevant. They deal with capital markets on an ongoing basis since they must continually assess and evaluate capital costs for their companies. They are well aware of the historical equity risk premium results as published by Ibbotson Associates as well as Wall Street analysts' EPS growth rate projections. Nonetheless, the December 2016 *CFO Magazine's* Duke University Survey of about 500 CFOs shows an expected market risk premium of 5.70% over the next ten years. In addition, surveys conducted in 2016 by Fernandez indicates that financial analysts and companies are using equity risk premiums of 5.3%. Moreover, Duff & Phelps, an investment advisor, uses a 5.50% market risk premium. As such, using these real world equity risk premiums, the appropriate equity cost rate for a public utility should be in the 8.0% to 9.0% range and not in the 10.75% range.

D. Leverage Adjustment

Q. PLEASE REVIEW DR. VANDER WEIDE'S LEVERAGE ADJUSTMENT.

A. Dr. Vander Weide has added a leverage adjustment of 70 basis points to the estimated equity cost rates that he estimated using the DCF, RP, and CAPM approaches. Dr. Vander Weide claims that this is needed since (1) market values are greater than book values for utilities and (2) the overall rate of return is applied to a book value capitalization in the ratemaking process. This adjustment is unwarranted for the following reasons:

(1) The market value of a firm's equity exceeds the book value of equity when the firm is expected to earn more on the book value of investment than investors require. This relationship is described very succinctly in the Harvard Business School case study, which I quote earlier in my testimony.[53] As such, the reason that market values exceed book values is that the company is earning a return on equity in excess of its cost of equity;

(2) Despite Dr. Vander Weide's contention that this represents a leverage adjustment, there is no change in leverage. There is no need for a leverage adjustment because there is no change in leverage. The Company's financial statements and fixed financial obligations remain the same;

(3) Financial publications and investment firms report capitalizations on a book value and not a market value basis;

(4) Dr. Vander Weide has presented his leverage adjustment in many rate cases over many years before various regulatory commissions. In OPC Interrogatory No. 69, Dr. Vander Weide was asked to list cases in which he employed this leverage adjustment. In

[53] See page 44 and footnote no. 24.

response to this interrogatory he failed or refused to provide orders in which a regulatory commission has adopted his leverage adjustment. As such, the record in this case is devoid of any evidence that any commission has ever accepted Dr. Vander Weide's leverage adjustment. In the last Gulf Power case, he indicated that he had been recommending the leverage adjustment to his cost of equity since the early 1990s. However, he has not identified any proceeding in which he has testified over the past 20 plus years where the regulatory commission adopted his leverage adjustment;

(5) As I previously noted, Gulf's common equity ratio and financial leverage is in line with the common equity ratios and financial leverage of other electric utilities; and

(6) Gulf's bond ratings suggest that the company's investment risk is below that of other electric utilities.

Q. PLEASE EXPLAIN WHY YOU BELIEVE THAT REGULATORY COMMISSIONS HAVE REJECTED DR. VANDER WEIDE'S LEVERAGE ADJUSTMENT?

A. I believe that Dr. Vander Weide's leverage adjustment has been rejected by regulatory commissions because it increases the ROEs for utilities that have high returns on common equity, and decreases the ROEs for utilities that have low returns on common equity.

In the graphs presented in Exhibit JRW-6, I have demonstrated that there is a strong positive relationship between expected returns on common equity and market-to-book ratios for public utilities. Hence, in the context of Dr. Vander Weide's leverage adjustment, this means that: (1) for a utility with a relatively high market-to-book ratio (e.g., 2.5) and ROE (e.g., 12.0%), the leverage adjustment will increase the estimated equity cost rate, while (2) for a utility with a relatively low market-to-book ratio (e.g., 0.5) and ROE (e.g., 5.0%), the leverage adjustment will decrease the estimated equity cost rate. Therefore, the adjustment will result in even higher market-to-book ratios for utilities with relatively high ROEs and even lower market-to-book ratios for utilities with relatively low ROEs.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

BEFORE THE

FLORIDA PUBLIC SERVICE COMMISSION

IN RE: PETITION FOR RATE INCREASE BY GULF POWER COMPANY	**DOCKET NO. 160186-EI**
IN RE: PETITION FOR APPROVAL OF 2016 DEPRECIATION AND DISMANTLEMENT STUDIES, APPROVAL OF PROPOSED DEPRECIATION RATES AND ANNUAL DISMANTLEMENT ACCRUALS AND PLANT SMITH UNITS 1 AND 2 REGULATORY ASSET AMORTIZATION, BY GULF POWER COMPANY	**DOCKET NO. 160170-EI**

Direct Testimony of Michael P. Gorman

I. INTRODUCTION AND SUMMARY

Q PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A Michael P. Gorman. My business address is 16690 Swingley Ridge Road, Suite 140, Chesterfield, MO 63017.

Q WHAT IS YOUR OCCUPATION?

A I am a consultant in the field of public utility regulation and a Managing Principal of Brubaker & Associates, Inc., energy, economic and regulatory consultants.

Q PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND EXPERIENCE.

A This information is included in Appendix A to this testimony.

Q ON WHOSE BEHALF ARE YOU APPEARING IN THIS PROCEEDING?

A I am appearing in this proceeding on behalf of the Federal Executive Agencies ("FEA").

Q WHAT IS THE SUBJECT MATTER OF YOUR TESTIMONY?

A My testimony will address the current market cost of equity, and resulting overall rate of return, for Gulf Power Company ("Gulf Power" or the "Company"). In my analyses, I consider the results of several market models, the current economic environment and outlook for the electric utility industry, as well as the financial integrity of Gulf Power given my recommended return on equity. I will also respond to Gulf Power witness Dr. James Vander Weide's recommended return on equity range for the proxy group of 9.70% to 10.90% with a midpoint of 10.40%, and his proposed 60 basis point adder above the proxy group point estimate of 10.40%, to produce a requested return on equity for Gulf Power of 11.00% and overall rate of return of 6.04%.

My silence in regard to any issue should not be construed as an endorsement of Gulf Power's position.

Q PLEASE SUMMARIZE YOUR RECOMMENDATIONS AND CONCLUSIONS ON RATE OF RETURN.

A I recommend the Florida Public Service Commission (the "Commission") award a return on common equity of 9.20%, which is at the approximate midpoint of my recommended range of 8.80% to 9.50%. My recommended return on equity will fairly compensate Gulf Power for its current market cost of common equity, will support its financial integrity and access to capital, and it will mitigate the claimed revenue deficiency in this proceeding by fairly balancing the interests of investors and ratepayers.

Gulf Power's proposed ratemaking capital structure contains an unreasonably high balance of common equity to total capital than necessary to balance its financial risk with a capital structure that results in just and reasonable rates. By using a ratemaking capital structure with an inflated amount of common equity as Gulf Power is proposing, its cost of service is inflated above the amount that is necessary to maintain its financial integrity, credit rating, and access to capital under reasonable terms and conditions. For this reason, Gulf Power's proposed capital structure produces unjustified rate burdens on its customers, and the rates produced using its proposed capital structure will not be just and reasonable.

Based on my recommended return on equity and capital structure, and the Company's embedded cost of debt, I recommend an overall rate of return of 5.20% as developed on my Exhibit MPG-1.

Finally, I will show that the 11.0% recommended return on equity, that has been recommended by Gulf Power witness Dr. James Vander Weide is excessive and unreasonable. Dr. Vander Weide's recommended return on equity is far above a reasonable estimate of Gulf Power's market cost of equity and should be rejected.

II. RATE OF RETURN

Q PLEASE DESCRIBE THIS SECTION OF YOUR TESTIMONY.

A In this section of my testimony, I will explain the analysis I performed to determine the reasonable rate of return in this proceeding and present the results of my analysis. I begin my estimate of a fair return on equity by reviewing the authorized returns approved by the regulatory commissions in various jurisdictions, the market assessment of the regulated utility industry investment risk, credit standing, and stock price performance. I used this information to get a sense of the market's perception of the investment risk characteristics of the regulated utility industry in general, which is then used to produce a refined estimate of the market's return requirement for assuming investment risk similar to Gulf Power's regulated utility operations.

As described below, I find the credit rating outlook of the industry to be stable, supportive of the industry's financial integrity, and has supported access to an abundance of low cost capital. Further, regulated utilities' stocks have exhibited strong and stable price valuations over the last several years, which is evidence of utility access to capital, and stable investment characteristics.

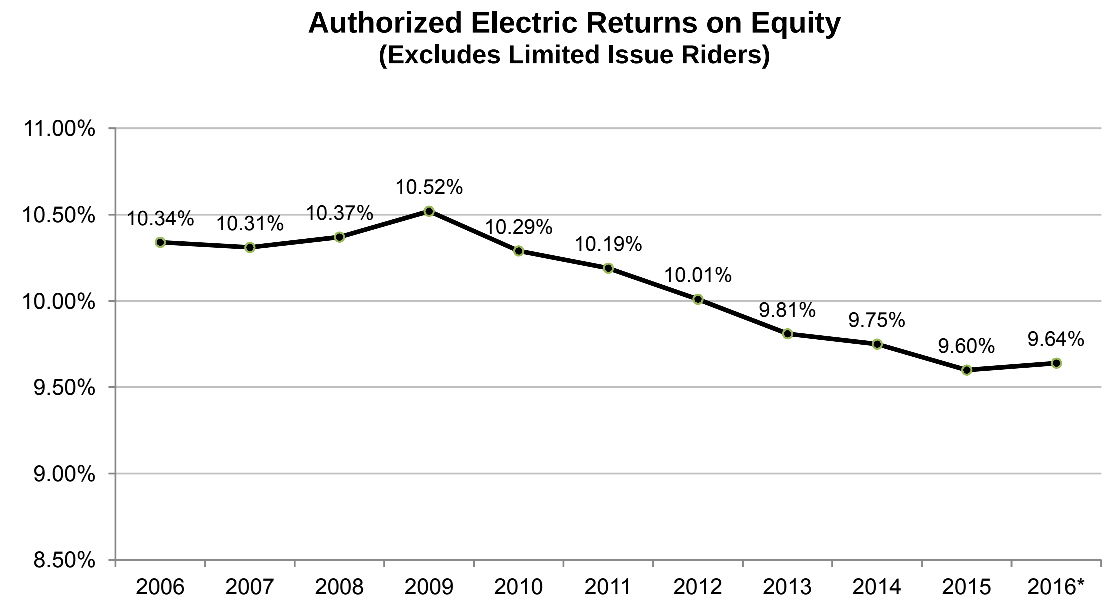
Based on this review of credit outlooks and stock price performance, I conclude that the market continues to embrace the regulated utility industry as a safe-haven investment option and views utility equity and debt investments as a low-risk investment alternative.

II.A. Electric Industry Authorized Returns on Equity, Access to Capital, and Credit Strength

Q PLEASE DESCRIBE THE OBSERVABLE EVIDENCE ON TRENDS IN AUTHORIZED RETURNS ON EQUITY FOR ELECTRIC UTILITIES, ELECTRIC UTILITIES' CREDIT STANDING, AND ELECTRIC UTILITIES' ACCESS TO CAPITAL TO FUND INFRASTRUCTURE INVESTMENT.

A Authorized returns on equity for electric utilities have been steadily declining over the last 10 years as illustrated in the graph below. More recent authorized returns on equity for electric utilities have declined down to about 9.6%, excluding limited issue rider decisions.

Figure 1



Source and Note:
Regulatory Research Associates, Inc., Regulatory Focus, Major Rate Case Decisions -- January - September 2016, October 14, 2016 at page 6.

* The data includes the period Jan - Sep 2016.

Importantly, while the graph above suggests that authorized returns on equity for electric utilities have averaged around 9.6%, the average has been skewed by jurisdictions which award significantly above industry average authorized returns on equity. The majority of returns on equity for integrated electric utility companies, as shown in Table 1 below, have averaged about 9.6%, but predominantly fall in the area of approximately 9.5%.

TABLE 1

2015 and 2016 Vertically Integrated Electric Utility Rate Case Authorized Returns on Equity Litigated Decisions

Line	Company (1)	State (2)	Return on Equity (3)	Date (4)	S&P Credit Rating (5)
1	Kansas City Power & Light Company	KS	9.30%	09/10/15	BBB+
2	El Paso Electric Company	NM	9.48%	06/08/16	BBB
3	PacifiCorp	WY	9.50%	01/23/15	A
4	PacifiCorp	WA	9.50%	03/25/15	A
5	Kansas City Power & Light Company	MO	9.50%	09/02/15	BBB+
6	PacifiCorp	WY	9.50%	12/30/15	A
7	UNS Electric, Inc.	AZ	9.50%	08/18/16	
8	PacifiCorp	WA	9.50%	09/01/16	A
9	Union Electric Company	MO	9.53%	04/29/15	BBB+
10	Public Service Company of New Mexico	NM	9.58%	09/28/16	BBB+
11	Southwestern Public Service Company	TX	9.70%	12/17/15	A-
12	Northern States Power Company - MN	MN	9.72%	03/26/15	A-
13	Appalachian Power Company	WV	9.75%	05/26/15	BBB
14	Indianapolis Power & Light Company	IN	9.85%	03/16/16	BBB-
15	Wisconsin Public Service Corporation	WI	10.00%	11/19/15	A-
16	Northern States Power Company - WI	WI	10.00%	12/03/15	A-
17	Upper Peninsula Power Company	MI	10.00%	09/08/16	
18	Consumers Energy Company	MI	10.30%	11/19/15	BBB+
19	DTE Electric Company	MI	10.30%	12/11/15	BBB+

Source: SNL Financial, downloaded November 3, 2016.

Notes:
[1]Data through the third quarter of 2016.
[2]Rate cases for limited issue riders are excluded.
[3]Rate cases decided by settlement are excluded.
[4]Rate cases without return on equity authorization are excluded.

As shown in the graph and table above, a majority of the authorized returns on equity have been at 9.58% or less in 2015 and 2016. Further, authorized returns on equity have been declining.

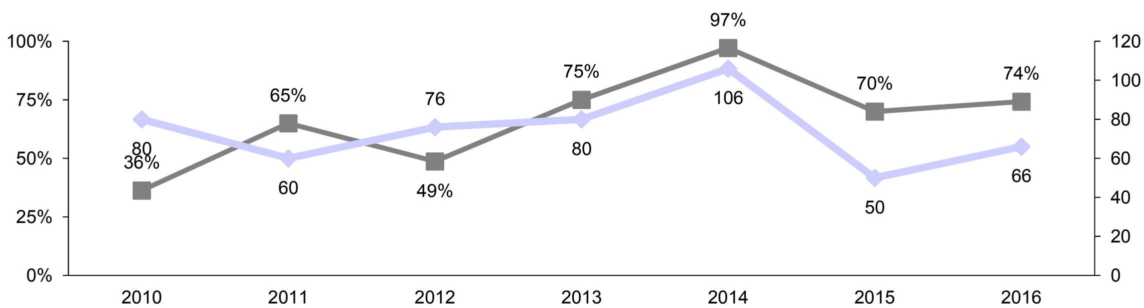
Q PLEASE DESCRIBE THE TREND IN CREDIT RATING CHANGES IN THE ELECTRIC UTILITY INDUSTRY OVER THE LAST FIVE YEARS.

A As shown below in Table 2, over the period 2010 through September 2016, the electric utility industry has experienced a significant number of upgrades in credit ratings by all of the major credit rating agencies (Fitch Ratings, Moody's, and Standard & Poor's).

Table 2

Credit Rating Changes
(U.S. Shareholder-Owned Electric Utility Industry)

	2010	**2011**	**2012**	**2013**	**2014**	**2015**	**YTD 2016**
Upgrades	29	39	37	60	103	35	49
Downgrades	51	21	39	20	3	15	17
% Upgrades	36%	65%	49%	75%	97%	70%	74%
Total Rating Activity	**80**	**60**	**76**	**80**	**106**	**50**	**66**



Source: EEI Q3 2016 Credit Ratings, Tab IV Direction of Rating Action.

As noted above in Table 2, the upgrades in utility credit ratings started outpacing downgrades in 2011, and more recently, the number of upgrades has substantially exceeded the number of downgrades. For example, in 2014, there were 103 upgrades and only three downgrades. In 2015, the number of upgrades was more than twice the number of downgrades (35 upgrades and 15 downgrades).

Q HOW DID THIS CREDIT RATING ACTIVITY IMPACT THE CREDIT RATING OF THE ELECTRIC UTILITY INDUSTRY?

A The credit rating changes for the electric utility industry reflect a significant strengthening of the electric utility industry credit rating. As shown in Table 3 below, in 2008, approximately 69% of the electric utility industry was rated from BBB- to BBB+, 18% had a bond rating better than BBB+, and around 13% of the industry was below investment grade. This industry rating improved steadily over the subsequent six years. By the third quarter of 2016, only 3% of the industry was below investment grade, around 65% continued to be in the range of BBB- to BBB+, and over 32% of the industry had a bond rating above BBB+. Overall, the improvement to the credit rating of the electric utility industry has been very significant.

TABLE 3

S&P Ratings by Category
(Year End)

Description	2008	2012	2013	2014	2015	2016 Q3
Regulated						
A or higher	8%	6%	3%	3%	3%	5%
A-	10%	17%	20%	21%	22%	27%
BBB+	23%	14%	17%	32%	33%	35%
BBB	23%	36%	49%	37%	33%	22%
BBB-	23%	17%	6%	3%	3%	8%
Below BBB-	13%	11%	6%	5%	6%	3%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Sources: EEI Q3 2016 Credit Ratings, Tab V – S&P Rating by Comp. Category.

Q HAVE CREDIT RATING AGENCIES COMMENTED ON DECLINING AUTHORIZED RETURNS ON EQUITY?

A Yes. Credit rating agencies recognize the declining trend in authorized returns and the expectation that regulators will continue lowering the returns for U.S. utilities while maintaining a stable credit profile. Specifically, Moody's states:

> **Lower Authorized Equity Returns Will Not Hurt Near-Term Credit Profiles**
>
> The credit profiles of US regulated utilities will remain intact over the next few years despite our expectation that regulators will continue to trim the sector's profitability by lowering its authorized returns on equity (ROE).[1]

Further, in a recent report, S&P states:

> **2. Earned returns will remain in line with authorized returns**
>
> Authorized returns on equity granted by U.S. utility regulators in rate cases this year have been steady at about 9.5%. Utilities have been adept at earning at or very near those authorized returns in today's economic and fiscal environment. A slowly recovering economy, natural gas and electric prices coming down and then stabilizing at fairly low levels, and the same experience with interest rates have led to a perfect "non-storm" for utility ratepayers and regulators, with utilities benefitting alongside those important constituencies. Utilities have largely used this protracted period of favorable circumstances to consolidate and institutionalize the regulatory practices that support earnings and cash flow stability. We have observed and we project continued use of credit-supportive policies such as short lags between rate filings and final decisions, up-to-date test years, flexible and dynamic tariff clauses for major expense items, and alternative ratemaking approaches that allow faster rate recognition for some new investments.[2]

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[1]*Moody's Investors Service*, "US Regulated Utilities: Lower Authorized Equity Returns Will Not Hurt Near-Term Credit Profiles," March 10, 2015.

[2]*Standard & Poor's Ratings Services*: "Corporate Industry Credit Research: Industry Top Trends 2016, Utilities," December 9, 2015, at 23, emphasis added.

Q HAVE UTILITIES BEEN ABLE TO ACCESS EXTERNAL CAPITAL TO SUPPORT INFRASTRUCTURE CAPITAL PROGRAMS?

A Yes. While cost of capital and authorized returns on equity were declining, the utility industry has been able to fund substantial increases in capital investments needed for infrastructure modernization and expansion. The Edison Electric Institute ("EEI") reported in a 2015 financial review of the electric industry financial performance that in 2011 electric "industry-wide capex has more than doubled since 2005."[3]

EEI also observed that, despite this nearly tripling of capital expenditures during the period 2005-2015, a majority of the funding for utilities' capital expenditures has been provided by internal funds. EEI reports approximately 25% of funding needed to meet these increasing capital expenditures has been derived from external sources and 75% of these capital expenditures have been funded by internal cash. Further, despite nearly tripling capital expenditures, the electric utility industry debt interest expense has declined by approximately 1.9% despite increases in the amount of outstanding debt (and reductions to the cost of debt).[4] This is clear proof that utilities have enjoyed access to large amounts of capital, and that the costs of capital have declined.

Q IS THERE EVIDENCE OF ROBUST VALUATIONS OF ELECTRIC UTILITY SECURITIES?

A Yes. These robust valuations are an indication that utilities can sell securities at high prices, which is a strong indication that they can access capital under reasonable terms and conditions, and at relatively low cost. As shown on my Exhibit MPG-2, the historical valuation of the electric utilities based on a price-to-earnings ratio, price-to-

[3] Edison Electric Institute, *2015 Financial Review, Annual Report of the U.S. Investor-Owned Electric Utility Industry*, page 17.
[4] *Id.*, pages 8 and 11.

cash flow ratio and market price-to-book value ratio, indicates utility security valuations today are very strong and robust relative to the last 10 to 15 years. These strong valuations of utility stocks indicate that utilities have access to equity capital under reasonable terms and costs.

Q HOW SHOULD THE COMMISSION USE THIS MARKET INFORMATION IN ASSESSING A FAIR RETURN FOR GULF POWER?

A Market evidence is quite clear that capital market costs are near historically low levels. Authorized returns on equity have fallen to the low to mid 9.0% area; utilities continue to have access to large amounts of external capital to fund large capital programs; and utilities' investment grade credit standings are stable and have improved due, in part, to supportive regulatory treatment. The Commission should carefully weigh all this important observable market evidence in assessing a fair return on equity for Gulf Power.

II.B. Regulated Utility Industry Market Outlook

Q PLEASE DESCRIBE THE CREDIT RATING OUTLOOK FOR REGULATED UTILITIES.

A Regulated utilities' credit ratings have improved over the last few years and the outlook has been labeled "Stable" by credit rating agencies. Credit analysts have also observed that utilities have strong access to capital at attractive pricing (i.e., low capital costs), which has supported very large capital programs.

Standard & Poor's ("S&P") recently published a report titled "Corporate Industry Credit Research: Industry Top Trends 2016, Utilities." In that report, S&P noted the following:

> **Ratings Outlook.** Stable with a slight bias toward the negative. Utilities in the U.S. continue to enjoy a confluence of financial, economic, and regulatory environments that are tailor-made for supporting credit quality. Low interest rates, modest economic growth, and relatively stable commodity costs make for little pressure on rates and therefore on the sunny disposition of regulators.
>
> **Credit Metrics.** We see credit metrics remaining within historic norms for the industry as a whole and do not project overall financial performance that would affect the industry's creditworthiness.
>
> **Industry Trends.** Taking advantage of the favorable market conditions, utilities have been maintaining aggressive capital spending programs to bolster system safety and reliability, as well as technological advances to make the systems "smarter." The elevated spending has not led to large rate increases, but if macro conditions reverse and lead to rising costs that command higher rates, we would expect utilities to throttle back on spending to manage regulatory risk.[5]

Similarly, Fitch states:

> **Stable Financial Performance:** The stable financial performance of Utilities, Power & Gas (UPG) issuers continues to support a sound credit profile for the sector, with 93% of the UPG portfolio carrying investment-grade ratings as of June 30, 2015, including 65% in the 'BBB' rating category. Second-quarter 2015 LTM [Long-Term Maturity] leverage metrics remained relatively unchanged year over year (YOY) while interest coverage metrics modestly improved. Fitch Ratings expects this trend to broadly sustain for the remainder of 2015, driven by positive recurring factors.
>
> **Low Debt-Funded Costs:** The sustained low interest rate environment has allowed UPG companies to refinance high-coupon legacy debt with lower coupon new debt. Gross interest expense on an absolute value represented approximately 4.6% of total adjusted debt as of June 30, 2015, a decline of about 150 bps from the 6.1% recorded in the midst of the recession. Fitch believes a rise in interest rates would largely be neutral to credit quality, as issuers have generally built enough headroom in coverage metrics to withstand higher financing costs.

[5] *Standard & Poor's Ratings Services*: "Corporate Industry Credit Research: Industry Top Trends 2016, Utilities," December 9, 2015, at 22, emphasis added.

> **Capex Moderately Declining:** Fitch expects the capex/depreciation ratio to be at the lower end of its five-year historical range of 2.0x–2.5x in the near term, reflecting a moderate decline in projected capex from the 2011–2014 highs. The capex depreciation ratio was relatively flat YOY at about 2.4x. Capex targets investments toward base infrastructure upgrades, utility-scale renewables and transmission investments.
>
> * * *
>
> Key credit metrics for IUCs [investor-owned utility companies] remained relatively stable YOY and continue to support the sound credit profiles and <u>Stable Outlooks</u> characteristic of the sector. EBITDAR [Earnings Before Interest, Taxes, Depreciation, Amortization and Rent] and FFO [Funds From Operations] coverage ratios were 5.6x and 5.9x, respectively, for the LTM ended second-quarter 2015, while adjusted debt/EDITDAR and FFO-adjusted leverage were 3.5x and 3.4x, respectively.[6]

Moody's recent comments on the U.S. Utility Sector state as follows:

> Our outlook for the US regulated utilities industry <u>is stable</u>. This outlook reflects our expectations for fundamental business conditions in the industry over the next 12 to 18 months.
>
> » **The credit-supportive regulatory environment is the main reason for our stable outlook.** We expect that the relationship between regulators and utilities in 2016 will remain credit-supportive, enabling utilities to recover costs in a timely manner and maintain stable cash flows.
>
> » **We estimate that the ratio of cash flow from operations (CFO) to debt will hold steady at about 21%, on average for the industry, over the next 12 to 18 months.** The use of timely cost-recovery mechanisms and continued expense management will help utilities offset a lack of growth in electricity demand and lower allowed returns on equity, enabling financial metrics to remain stable. Tax benefits tied to the expected extension of bonus depreciation will also support CFO-to-debt ratios.
>
> * * *
>
> » **Utilities are increasingly using holding company leverage to drive returns, a credit negative.** Although not a driver of our outlook, utilities are using leverage at the holding company level to invest in other businesses, make acquisitions and earn higher

---

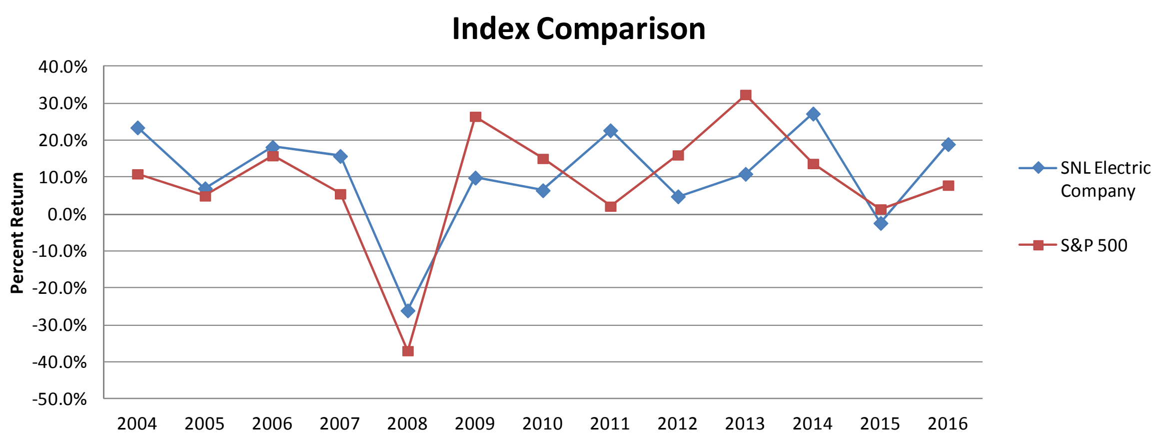
[6] *Fitch Ratings*: "U.S. Utilities, Power & Gas Data Comparator," September 21, 2015, at 1 and 7, emphasis added.

returns on equity, which could have negative implications across the whole family.[7]

Q PLEASE DESCRIBE UTILITY STOCK PRICE PERFORMANCE OVER THE LAST SEVERAL YEARS.

A As shown in the graph below, SNL Financial has recorded utility stock price performance compared to the market. The industry's stock performance data from 2004 through September 2016 shows that the SNL Electric Company Index has outperformed the market in downturns and trailed the market during recovery. This relatively stable price performance for utilities supports my conclusion that utility stock investments are regarded by market participants as a moderate- to low-risk investment.

FIGURE 2



Source: SNL Financial, data through September 30, 2016.

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[7] *Moody's Investors Service*: "2016 Outlook – US Regulated Utilities: Credit-Supportive Regulatory Environment Drives Stable Outlook," November 6, 2015, at 1, emphasis added.

Q HAVE ELECTRIC UTILITY INDUSTRY TRADE ORGANIZATIONS COMMENTED ON ELECTRIC UTILITY STOCK PRICE PERFORMANCE?

A Yes. In its 4th Quarter 2015 Financial Update, the EEI stated the following concerning the EEI Electric Utility Stock Index ("EEI Index"):

> EEI Index returns during 2015 embodied the larger pattern seen in Table I since the 2008/2009 financial crisis, as industry business models have migrated to an increasingly regulated emphasis. The industry has generated consistent positive returns but has lagged the broader markets when markets post strong gains, which in turn have been sparked both by slow but steady U.S. economic growth and corporate profit gains and by the willingness of the Federal Reserve to bolster markets with historically unprecedented monetary support in the form of three rounds of quantitative easing and near-zero short-term interest rates. <u>While the Fed did raise short-term rates in December 2015 for the first time since 2006</u> (from zero to a range of 0.25% to 0.50%), <u>this hardly effects [sic] longer-term yields, which remain at historically low levels and are influenced more by the level of inflation and economic strength than by the Fed's short-term rate policy.</u>
>
> * * *
>
> **Regulated Fundamentals Remain Stable**
>
> The rate stability offered by state regulation and the ability to recover rising capital spending in rate base shield regulated utilities from the volatility in the competitive power arena and turn the growth of renewable generation (and the resulting need for new and upgraded transmission lines) into a rate base growth opportunity for many industry players.
>
> * * *
>
> In the shorter-term, analysts continue to see opportunity for 4-6% earnings growth for regulated utilities in general along with prospects for slightly rising dividends (with a dividend yield now at about 4% for the industry overall). That formula has served utility investors quite well in recent years, delivering long-term returns equivalent to those of the broad markets but with much lower volatility. Provided state regulation remains fair and constructive in an effort to address the interests of ratepayers and investors, it would appear that the industry can continue to

> deliver success for all stakeholders, even in an environment of flat demand and considerable technological change.[8]

Q HAVE YOU CONSIDERED CONSENSUS MARKET OUTLOOKS FOR CHANGES IN INTEREST RATES IN FORMING YOUR RECOMMENDED RETURN ON EQUITY IN THIS CASE?

A Yes. The outlook for changes in interest rates has been highly impacted by expected actions by the Federal Reserve Bank Open Market Committee changes in short-term interest rates, and outlooks for inflation and GDP growth after the recent Presidential election. The most recent consensus outlook on these factors is stated in the December 2016 *Blue Chip Financial Forecasts* as follows:

> At present, our panelists seem much more skeptical than fixed income market participants that economic growth, <u>inflation, or both will shoot higher over the next year and a half</u>. There was very little change over the past month in consensus forecasts of economic growth and inflation over the forecast horizon. While annual real GDP growth in 2017 is expected to exceed that in 2016, it still is forecast to closely adhere to the slightly more than 2.0% average that has prevailed since the end of the Great Recession. Consensus forecasts of inflation also underwent little change this month. The GDP price index still is expected to register annualized rates of increase of slightly more than 2.0% through Q1 2018, while the Consumer Price Index is forecast to post annualized rates of increase about 0.2 of a percentage point greater than that.
>
> * * *
>
> All of our panelists also expect the FOMC to hike rates by a quarter-point in December, according to a special question asked of our panelists this month. We also saw some upward adjustment to consensus forecasts of interest rates and yields over the forecast horizon. However, it seemed to largely reflect a simple mark-to-marking of forecasts given the post-election run-up in interest rates. Yes, the consensus still looks for rates and yields to rise over the forecasts horizon, but not at the breakneck pace seen in the immediate post-election period. As for FOMC rate hikes in 2017, 28.9% of our panelists currently foresee only one 25 basis points increase next year, 40.0% see two 25-basis-point increases, 17.8%

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[8] *EEI Q4 2015 Financial Update*: "Stock Performance" at 4 and 6, emphasis added.

> expect three quarter-point moves, and 13.3% said they anticipate the FOMC to hike rates by 25 basis points four or more times.[9]

Based on these current outlooks, the consensus 30-year Treasury bond yield projections forecast an increase from current yields of 2.5% or less, up to 3.4% out over the next two years. Further, long-term outlooks are for the Federal Reserve Funds to increase up to as much as 2.6% to 3% over the five- to 10-year forecast, with 30-year Treasury bond yields increasing to 4.2% to 4.5% over that same time period. These outlooks for short-term and long-term interest rate changes are reflected in my market-based models and inputs used to estimate a fair return on equity for Gulf Power in this proceeding.

I also note that the current outlook for interest rate increases over the short-term and intermediate-term forecasts is for increases, but these expectations of increased interest rates have consistently been reflected in analysts' past interest rate projections but those projections have consistently turned out to be wrong. That is, interest rates were projected to increase, but instead have stayed flat or declined. As such, while I am considering the expectation of increased capital market costs in the future, I must note that the certainty of increases in capital market costs and timing of changes to capital market costs are at very best uncertain.

Q WHAT ARE THE IMPORTANT TAKEAWAY POINTS FROM THIS ASSESSMENT OF UTILITY INDUSTRY CREDIT AND INVESTMENT RISK OUTLOOKS?

A Credit rating agencies consider the regulated utility industry to be "Stable" and believe investors will continue to provide an abundance of low-cost capital to support utilities' large capital programs at attractive costs and terms. All of this reinforces my belief that utility investments are generally regarded as safe-haven or low-risk

[9] *Blue Chip Financial Forecasts*, December 1, 2016 at 1, emphasis added.

investments and the market continues to demand low-risk investments such as utility securities. The ongoing demand for low-risk investments can reasonably be expected to continue to provide attractive low-cost capital for regulated utilities.

II.C. Gulf Power Investment Risk

Q PLEASE DESCRIBE THE MARKET'S ASSESSMENT OF THE INVESTMENT RISK OF GULF POWER.

A The market's assessment of Gulf Power's investment risk is described by credit rating analysts' reports. Gulf Power's current corporate bond ratings from S&P and Moody's are A- and A2, respectively.[10] Gulf Power's outlook from both credit rating agencies is "Stable." Specifically, S&P states:

> **Business Risk: Excellent**
>
> We assess Gulf Power's business risk profile as "excellent," incorporating the benefits of operations under a generally constructive regulatory environment that enables the company to earn at or close to the allowed return, a midsized customer base that should experience moderate customer growth as the economy recovers, and a consistently good operating record for its owned generation fleet. Residential and commercial customers account for the majority of sales and revenues, providing a measure of stability to cash flows, and the company has no meaningful industrial exposure.
>
> The regulatory environment for Gulf Power is generally constructive and supportive of credit quality, enabling the company to recover invested capital in a timely manner while earning adequate returns, and to recover capacity, fuel, and environmental compliance costs through riders. Recovery of transmission investments for the next few years will not begin until 2017, and in the meantime the company will accrue carrying costs.
>
> **Financial Risk: Significant**
>
> We view Gulf Power's financial risk profile as being in the "significant" category using the medial volatility financial ratio benchmarks, reflecting our base-case scenario that the company will maintain credit protection measures that remain in the upper end of the category. We

[10] Liu Direct at 27.

> expect the core ratios to weaken somewhat over the next few years as capital spending rises (leading to modestly higher debt levels) and as deferred tax benefits decline.[11]

III. GULF POWER'S PROPOSED CAPITAL STRUCTURE

Q WHAT IS GULF POWER'S PROPOSED CAPITAL STRUCTURE?

A Gulf Power's proposed capital structure is shown below in Table 4. This pro forma capital structure ending on December 31, 2017 is sponsored by Gulf Power witness Ms. Susan Ritenour.

TABLE 4

Gulf Power's Proposed Capital Structure
(December 31, 2017)

Description	Ratemaking (1)	Long-Term Investor Capital (2)	Total Investor Capital (3)
Long-Term Debt	30.27%	40.77%	40.13%
Preference Stock	3.91%	5.27%	5.19%
Common Equity	40.07%	53.96%	53.12%
Short-Term Debt	1.18%		1.56%
Customer Deposits	1.01%		
Net Deferred Taxes	23.52%		
Investment Credit	0.03%		
Total	100.00%	100.00%	100.00%

Source: Exhibit SDR-1, Schedule 14, page 1.

Q IS GULF POWER'S PROPOSED CAPITAL STRUCTURE REASONABLE?

A No. Gulf Power's common equity ratio of long-term investor capital was approximately 50.7% as of September 30, 2016, and has not exceeded 51.0% in at

[11]Standard & Poor's RatingsDirect: "Gulf Power Co." June 16, 2015.

least the last five quarters.[12] Gulf Power has not explained or justified the increase in this long-term investor capital common equity ratio as it proposes in this proceeding.

Q DO YOU BELIEVE THAT GULF POWER'S PROPOSED INCREASE IN ITS LONG-TERM INVESTOR CAPITAL EQUITY RATIO IS REASONABLE?

A No. Indeed, Gulf Power's proposed capital structure contains an unreasonably large ratio of common equity to total capital. A capital structure with too much common equity unjustifiably inflates the Company's cost of service, and impose an unjustified burden on customers. Therefore, I recommend a reasonable capital structure which contains a balanced amount of debt and equity be used to set rates. Additionally,

Q WHY DO YOU BELIEVE THAT GULF POWER'S PROPOSED CAPITAL STRUCTURE CONTAINS AN UNREASONABLE AMOUNT OF COMMON EQUITY RELATIVE TO TOTAL LONG-TERM INVESTOR CAPITAL?

A I reached this conclusion based on an assessment of Gulf Power's capital structure reviewed by credit rating agencies in assessing its credit strength, a comparison of Gulf Power's capital structure to the capital structures approved by regulatory commissions for other utility companies, and the capital structure used to set Gulf Power's return on equity in this proceeding.

[12]Exhibit MPG-3, page 1 of 3.

Q PLEASE DESCRIBE WHY YOU BELIEVE GULF POWER'S CAPITAL STRUCTURE CONTAINS MORE COMMON EQUITY THAN NECESSARY TO SUPPORT ITS CURRENT INVESTMENT GRADE BOND RATING.

A This conclusion is based on a comparison of the equity and debt components of Gulf Power's total financial risk considered by credit analysts in utility bond rating evaluation by Standard & Poor's ("S&P"). In its assessment of the total financial risk of Gulf Power and other utilities, S&P considers both on balance sheet debt obligations and off balance sheet debt obligations. Off balance sheet debt obligations include the debt-like characteristics of purchased power obligations, operating leases, and other financial obligations that are not capitalized on a utility's balance sheet. In assessing the financial risk of a utility, S&P considers an "adjusted" debt ratio which considers both on balance sheet debt obligations and off balance sheet debt obligations.

Based on Gulf Power's proposed capital structure, its adjusted debt ratio would be approximately 44.0% as shown on page 1 of Exhibit MPG-3, page 2.

Gulf Power's adjusted debt ratio is significantly lower than that of industry medians for comparable bond ratings, thus illustrating that its debt ratio is too low, and its common equity ratio is too high. For example, as shown in Table 5 below, this adjusted debt ratio for Gulf Power would be considerably lower than utility industry medians adjusted debt ratios based on Standard & Poor's credit rating reporting, for utility companies with BBB and A- bond ratings, and adjusted debt ratios of around 50.8% up to 53.6%. For the industry average, which has a corresponding BBB+ bond rating, the industry average adjusted debt ratio is around 52%. The equity component of these companies then would be the reciprocal of this debt ratio, which would imply generally common equity components of total capitalization including off-balance sheet debt of around 48%.

TABLE 5

Operating Utility Subsidiaries
(Industry Medians)

S&P Rating[1]	Adj. Debt Ratio (1)	Distribution (50% - 55%) (2)
AA-	42.6%	–
A	51.5%	78%
A-	51.7%	35%
BBB+	54.3%	36%
BBB	52.9%	38%
Gulf Power	47.1%	

[1]Exhibit MPG-19, page 2.

As shown in Table 5 above, Gulf Power currently has a bond rating of A- from S&P, but its adjusted debt ratio is in line with a credit rating considerably stronger than A-. As illustrated in Table 5 above, Gulf Power's capital structure simply contains too much common equity and much less debt than would support its investment grade bond rating.

Q HOW DOES GULF POWER'S PROPOSED CAPITAL STRUCTURE COMMON EQUITY RATIO COMPARE TO THAT APPROVED FOR ELECTRIC UTILITIES FOR RATEMAKING PURPOSES?

A A comparison of Gulf Power's proposed capital structure common equity to that of the electric utility industry approved capital structure is shown below in Table 6.

Since most utilities do not include non-investor capital in the ratemaking capital structure, I have compared Gulf Power's proposed 53.96% common equity ratio of long-term investor capital to the industry average common equity ratio approved by regulatory commissions. As shown in Table 6 below, Gulf Power's proposed 53.96% common equity ratio is considerably higher than the electric utility industry average and median common equity ratios of approximately 50% over the period 2010-2016. Indeed, the industry average common equity ratio has been relatively stable over this time period. Support for this finding is shown below in Table 6.

TABLE 6

Trends in
State Authorized Common Equity Ratios

		Electric Utility Industry	
Line	**Year**	**Average**	**Median**
	(1)	**(2)**	**(3)**
1	2010	49.5%	49.8%
2	2011	49.1%	49.1%
3	2012	51.5%	52.0%
4	2013	50.1%	51.0%
5	2014	50.3%	50.0%
6	2015	50.2%	50.5%
7	2016*	49.5%	50.0%
8	**Average**	**50.0%**	**50.3%**
9	Min	49.1%	49.1%
10	Max	51.5%	52.0%
11	**Midpoint**	**50.3%**	**50.6%**
12	**Gulf Power Proposed**		**53.98%**

Source:

SNL Financial, downloaded on Dec 15, 2016.
*Includes through Sep. 30, 2016

As shown in Table 6 above, Gulf Power's proposed capital structure contains far more common equity than that of other electric utilities for ratemaking purposes. Importantly, as I discuss above, the electric utility industry generally is able to access large amounts of capital to support its capital program, and its bond rating has improved. Therefore, this comparison of Gulf Power's proposed capital structure to that of the electric utility industry strongly supports my conclusion that Gulf Power's capital structure contains an unreasonably high amount of common equity.

Q WHY DO YOU BELIEVE THAT GULF POWER'S COMMON EQUITY RATIO IS MUCH HIGHER THAN THE COMMON EQUITY RATIOS OF COMPARABLE RISK PROXY COMPANIES TO WHICH YOU WILL MEASURE GULF POWER'S RETURN ON EQUITY?

A As discussed later in my testimony, the proxy group used to estimate Gulf Power's current market cost of equity has a long-term common equity ratio of total capital of approximately 47.1%. Only three of the proxy companies have common equity ratios of 52% or higher out of a total of 22. For this reason, Gulf Power's proposed ratemaking capital structure including a 53.96% common equity ratio is simply unreasonable and should be rejected.

Q WHY WOULD A CAPITAL STRUCTURE TOO HEAVILY WEIGHTED WITH COMMON EQUITY UNNECESSARILY INCREASE GULF POWER'S COST OF SERVICE IN THIS PROCEEDING?

A A capital structure too heavily weighted with common equity unnecessarily increases Gulf Power's claimed revenue deficiency because common equity is the most expensive form of capital and is subject to income tax expense. For example, if Gulf

Power's authorized return on equity is set at 9.0%, the revenue requirement cost to customers would be approximately 14.4%, which includes the 9.0% after-tax return and the related income expense of 5.4%, which is based on the tax conversion factor of approximately 1.6x. (9.0% times 1.6x less 9.0%). In contrast, the cost of debt capital is not subject to an income tax expense. Gulf Power's proposed embedded cost of debt is around 4.40%. Common equity is more than three times as expensive on a revenue requirement basis than debt capital.

A reasonable mix of debt and equity, as already approved by the Commission in the prior rate cases, is necessary in order to balance Gulf Power's financial risk, support an investment grade credit rating, and permit Gulf Power access to capital under reasonable terms and prices. However, a capital structure too heavily weighted with common equity will unnecessarily increase its cost of capital and revenue requirement for ratepayers.

Q WHAT CAPITAL STRUCTURE DO YOU RECOMMEND THE COMMISSION USE TO SET GULF POWER'S OVERALL RATE OF RETURN IN THIS PROCEEDING?

A For the reasons outlined above, I believe a ratemaking capital structure composed of 50.7% equity is sufficient to maintain Gulf Power's current investment grade bond ratings, while considering its off-balance sheet debt equivalents, but minimize its cost to retail customers to preserve this strong investment grade credit standing. My proposed common equity ratio is based on Gulf Power's actual common equity ratio at September 30, 2016.

Hence, my proposed capital structure will support Gulf Power's financial integrity but at a lower cost than that proposed by Gulf Power in its proposed capital structure. My recommended capital structure for setting rates in this proceeding is outlined in Table 7 below.

TABLE 7

FEA Proposed Capital Structure
(December 31, 2017)

Description	Ratemaking (1)	Long-Term Investor Capital (2)	Total Investor Capital (3)
Long-Term Debt	32.71%	44.06%	43.37%
Preference Stock	3.91%	5.27%	5.19%
Common Equity	37.63%	50.68%	49.88%
Short-Term Debt	1.18%		1.56%
Customer Deposits	1.01%		
Net Deferred Taxes	23.52%		
Investment Credit	0.03%		
Total	100.00%	100.00%	100.00%

Source: Exhibit MPG-1.

Q **PLEASE DESCRIBE WHY YOU BELIEVE THAT YOUR PROPOSED CAPITAL STRUCTURE FOR GULF POWER IS REASONABLE.**

A My proposed capital structure is more reasonable than the Company's for several reasons. First, the reduced common equity ratio produces an adjusted debt ratio based on Standard & Poor's methodology of 47.1%. This is developed on my Exhibit MPG-3, page 2. This debt ratio is more reasonably consistent with other electric utilities with bond ratings similar to that of Gulf Power. Second, my capital structure is more reasonably consistent with the electric utility industry average common equity ratio of around 50%. As noted above, my proposed capital structure contains a common equity ratio of 50.68% of long-term capital and 49.88% on total investor capital. This capital structure is more consistent with the electric utility industry averages, and again, the industry has proven to meet investor expectations and maintain strong access to capital under reasonable terms and prices, and to support strong credit. Finally, my proposed capital structure contains a common equity ratio that is more in line with the proxy group companies used to estimate a fair return on equity for Gulf Power in this proceeding. For all these reasons, I believe my proposed capital structure is more reasonable than that of Gulf Power.

III.A. Embedded Cost of Debt

Q WHAT IS THE COMPANY'S EMBEDDED COST OF DEBT?

A Ms. Ritenour is proposing an embedded cost of debt of 4.40% as developed on her Schedule 14, page 3.

IV. RETURN ON EQUITY

Q PLEASE DESCRIBE WHAT IS MEANT BY A "UTILITY'S COST OF COMMON EQUITY."

A A utility's cost of common equity is the expected return that investors require on an investment in the utility. Investors expect to earn their required return from receiving dividends and through stock price appreciation.

Q PLEASE DESCRIBE THE FRAMEWORK FOR DETERMINING A REGULATED UTILITY'S COST OF COMMON EQUITY.

A In general, determining a fair cost of common equity for a regulated utility has been framed by two hallmark decisions of the U.S. Supreme Court: Bluefield Water Works & Improvement Co. v. Pub. Serv. Comm'n of W. Va., 262 U.S. 679 (1923) and Fed. Power Comm'n v. Hope Natural Gas Co., 320 U.S. 591 (1944).

These decisions identify the general financial and economic standards to be considered in establishing the cost of common equity for a public utility. Those general standards provide that the authorized return should: (1) be sufficient to maintain financial integrity; (2) attract capital under reasonable terms; and (3) be commensurate with returns investors could earn by investing in other enterprises of comparable risk.

Q PLEASE DESCRIBE THE METHODS YOU HAVE USED TO ESTIMATE GULF POWER'S COST OF COMMON EQUITY.

A I have used several models based on financial theory to estimate Gulf Power's cost of common equity. These models are: (1) a constant growth Discounted Cash Flow ("DCF") model using consensus analysts' growth rate projections; (2) a constant growth DCF using sustainable growth rate estimates; (3) a multi-stage growth DCF model; (4) a Risk Premium model; and (5) a Capital Asset Pricing Model ("CAPM"). I have applied these models to a group of publicly traded utilities with investment risk similar to Gulf Power.

IV.A. Risk Proxy Group

Q PLEASE DESCRIBE HOW YOU IDENTIFIED A PROXY UTILITY GROUP THAT COULD BE USED TO REASONABLY REFLECT THE INVESTMENT RISK OF GULF POWER AND USED TO ESTIMATE ITS CURRENT MARKET COST OF EQUITY.

A I relied on the same proxy group developed by Gulf Power witness Dr. Vander Weide with a few exceptions. I excluded Westar Energy and Great Plains Energy because they are in the process of merging, as announced on May 31, 2016. Similarly, I excluded Dominion Resources because in September 2016, it finalized its acquisition of Questar Corp. Finally, I excluded NextEra because it announced a proposal to acquire Oncor Electric Delivery Company on July 29, 2016.

Q WHY IS IT APPROPRIATE TO EXCLUDE COMPANIES WHICH ARE INVOLVED IN MERGER AND ACQUISITION ("M&A") ACTIVITY FROM THE PROXY GROUP?

A M&A activity can distort the market factors used in DCF and risk premium studies. M&A activity can have impacts on stock prices, growth outlooks, and relative volatility in historical stock prices if the market was anticipating or expecting the M&A activity prior to it actually being announced. This distortion in the market data thus impacts the reliability of the DCF and risk premium estimates for a company involved in M&A.

Moreover, companies generally enter into M&A in order to produce greater shareholder value by combining companies. The enhanced shareholder value normally could not be realized had the two companies not combined.

When companies announce an M&A, the public assesses the proposed merger and develops outlooks on the value of the two companies after the combination based on expected synergies or other value adds created by the M&A.

As a result, the stock value before the merger is completed may not reflect the forward-looking earnings and dividend payments for the company absent the merger or on a stand-alone basis. Therefore, an accurate DCF return estimate on companies involved in M&A activities cannot be produced because their stock prices do not reflect the stand-alone investment characteristics of the companies. Rather, the stock price more likely reflects the shareholder enhancement produced by the proposed transaction. For these reasons, it is appropriate to remove companies involved in M&A activity from a proxy group used to estimate a fair return on equity for a utility.

Q PLEASE DESCRIBE WHY YOU BELIEVE YOUR PROXY GROUP IS REASONABLY COMPARABLE IN INVESTMENT RISK TO GULF POWER.

A The proxy group is shown in Exhibit MPG-4. The proxy group has an average corporate credit rating from S&P of BBB+, which is slightly lower than S&P's corporate credit rating for Gulf Power of A-. The proxy group has an average corporate credit rating from Moody's of Baa1, which is also a notch lower than Gulf Power's corporate credit rating from Moody's of A2. Based on this information, I believe my proxy group has slightly higher but reasonably comparable investment risk to Gulf Power. Therefore, the return on equity produced by my proxy group is conservative.

The proxy group has an average common equity ratio of 44.4% (including short-term debt) from SNL Financial ("SNL") and 47.1% (excluding short-term debt) from *The Value Line Investment Survey* ("*Value Line*") in 2015.

The Company's proposed common equity ratio of 53.1% is significantly higher than the proxy group common equity ratio, which means that my proxy group has higher financial risk and will produce a conservative return on equity for Gulf Power. Similarly, my proposed common equity ratio of 50.7% is also higher than the average proxy group common equity ratio. Based on these risk factors, I conclude the proxy group reasonably approximates the investment risk of Gulf Power and produces a conservative return on equity estimate for Gulf Power.

IV.B. Discounted Cash Flow Model

Q PLEASE DESCRIBE THE DCF MODEL.

A The DCF model posits that a stock price is valued by summing the present value of expected future cash flows discounted at the investor's required rate of return or cost of capital. This model is expressed mathematically as follows:

$$P_0 = \frac{D_1}{(1+K)^1} + \frac{D_2}{(1+K)^2} \; .... \; \frac{D_\infty}{(1+K)^\infty} \qquad \text{(Equation 1)}$$

P_0 = Current stock price
D = Dividends in periods 1 - ∞
K = Investor's required return

This model can be rearranged in order to estimate the discount rate or investor-required return otherwise known as "K." If it is reasonable to assume that earnings and dividends will grow at a constant rate, then Equation 1 can be rearranged as follows:

$$K = D_1/P_0 + G \qquad \text{(Equation 2)}$$

K = Investor's required return
D_1 = Dividend in first year
P_0 = Current stock price
G = Expected constant dividend growth rate

Equation 2 is referred to as the annual "constant growth" DCF model.

Q PLEASE DESCRIBE THE INPUTS TO YOUR CONSTANT GROWTH DCF MODEL.

A As shown in Equation 2 above, the DCF model requires a current stock price, expected dividend, and expected growth rate in dividends.

Q WHAT STOCK PRICE HAVE YOU RELIED ON IN YOUR CONSTANT GROWTH DCF MODEL?

A I relied on the average of the weekly high and low stock prices of the utilities in the proxy group over a 13-week period ending on December 16, 2016. An average stock price is less susceptible to market price variations than a price at a single point in time. Therefore, an average stock price is less susceptible to aberrant market price movements, which may not reflect the stock's long-term value.

A 13-week average stock price reflects a period that is still short enough to contain data that reasonably reflects current market expectations but the period is not so short as to be susceptible to market price variations that may not reflect the stock's long-term value. In my judgment, a 13-week average stock price is a reasonable balance between the need to reflect current market expectations and the need to capture sufficient data to smooth out aberrant market movements.

Q WHAT DIVIDEND DID YOU USE IN YOUR CONSTANT GROWTH DCF MODEL?

A I used the most recently paid quarterly dividend as reported in *Value Line*.[13] This dividend was annualized (multiplied by 4) and adjusted for next year's growth to produce the D1 factor for use in Equation 2 above.

Q WHAT DIVIDEND GROWTH RATES HAVE YOU USED IN YOUR CONSTANT GROWTH DCF MODEL?

A There are several methods that can be used to estimate the expected growth in dividends. However, regardless of the method, for purposes of determining the market-required return on common equity, one must attempt to estimate investors'

[13] *The Value Line Investment Survey*, October 28, November 18, and December 16, 2016.

consensus about what the dividend, or earnings growth rate, will be, and not what an individual investor or analyst may use to make individual investment decisions.

As predictors of future returns, security analysts' growth estimates have been shown to be more accurate than growth rates derived from historical data.[14] That is, assuming the market generally makes rational investment decisions, analysts' growth projections are more likely to influence investors' decisions which are captured in observable stock prices than growth rates derived only from historical data.

For my constant growth DCF analysis, I have relied on a consensus, or mean, of professional security analysts' earnings growth estimates as a proxy for investor consensus dividend growth rate expectations. I used the average of analysts' growth rate estimates from three sources: Zacks, SNL, and Reuters. All such projections were available on December 16, 2016, and all were reported online.

Each consensus growth rate projection is based on a survey of security analysts. There is no clear evidence whether a particular analyst is most influential on general market investors. Therefore, a single analyst's projection does not as reliably predict consensus investor outlooks as does a consensus of market analysts' projections. The consensus estimate is a simple arithmetic average, or mean, of surveyed analysts' earnings growth forecasts. A simple average of the growth forecasts gives equal weight to all surveyed analysts' projections. Therefore, a simple average, or arithmetic mean, of analyst forecasts is a good proxy for market consensus expectations.

[14]*See, e.g.,* David Gordon, Myron Gordon, and Lawrence Gould, "Choice Among Methods of Estimating Share Yield," *The Journal of Portfolio Management*, Spring 1989.

Q WHAT ARE THE GROWTH RATES YOU USED IN YOUR CONSTANT GROWTH DCF MODEL?

A The growth rates I used in my DCF analysis are shown in Exhibit MPG-5. The average growth rate for my proxy group is 5.55%.

Q WHAT ARE THE RESULTS OF YOUR CONSTANT GROWTH DCF MODEL?

A As shown in Exhibit MPG-6, the average and median constant growth DCF returns for my proxy group for the 13-week analysis are 9.23% and 9.30%, respectively.

Q DO YOU HAVE ANY COMMENTS ON THE RESULTS OF YOUR CONSTANT GROWTH DCF ANALYSIS?

A Yes. The constant growth DCF analysis for my proxy group is based on a group average long-term sustainable growth rate of 5.55%. The three- to five-year growth rates are higher than my estimate of a maximum long-term sustainable growth rate of 4.25%, which I discuss later in this testimony. I believe the constant growth DCF analysis produces a reasonable high-end return estimate.

Q HOW DID YOU ESTIMATE A MAXIMUM LONG-TERM SUSTAINABLE GROWTH RATE?

A A long-term sustainable growth rate for a utility stock cannot exceed the growth rate of the economy in which it sells its goods and services. Hence, the long-term maximum sustainable growth rate for a utility investment is best proxied by the projected long-term Gross Domestic Product (“GDP”). *Blue Chip Financial Forecasts* projects that over the next 5 and 10 years, the U.S. nominal GDP will grow approximately 4.25%. These GDP growth projections reflect a real growth outlook of around 2.2% and an inflation outlook of around 2.0% going forward. As such, the average growth rate over the next 10 years is around 4.25%, which I believe is a reasonable proxy of long-term sustainable growth.[15]

In my multi-stage growth DCF analysis, I discuss academic and investment practitioner support for using the projected long-term GDP growth outlook as a maximum sustainable growth rate projection. Hence, recognizing the long-term GDP growth rate as a maximum sustainable growth is logical, and is generally consistent with academic and economic practitioner accepted practices.

IV.C. Sustainable Growth DCF

Q PLEASE DESCRIBE HOW YOU ESTIMATED A SUSTAINABLE LONG-TERM GROWTH RATE FOR YOUR SUSTAINABLE GROWTH DCF MODEL.

A A sustainable growth rate is based on the percentage of the utility's earnings that is retained and reinvested in utility plant and equipment. These reinvested earnings increase the earnings base (rate base). Earnings grow when plant funded by reinvested earnings is put into service, and the utility is allowed to earn its authorized return on such additional rate base investment.

The internal growth methodology is tied to the percentage of earnings retained in the company and not paid out as dividends. The earnings retention ratio is 1 minus the dividend payout ratio. As the payout ratio declines, the earnings retention ratio increases. An increased earnings retention ratio will fuel stronger growth because the business funds more investments with retained earnings.

The payout ratios of the proxy group are shown in my Exhibit MPG-7. These dividend payout ratios and earnings retention ratios then can be used to develop a

[15] *Blue Chip Financial Forecasts*, December 1, 2016, at 14.

sustainable long-term earnings retention growth rate. A sustainable long-term earnings retention ratio will help gauge whether analysts' current three- to five-year growth rate projections can be sustained over an indefinite period of time.

The data used to estimate the long-term sustainable growth rate is based on the Company's current market-to-book ratio and on *Value Line*'s three- to five-year projections of earnings, dividends, earned returns on book equity, and stock issuances.

As shown in Exhibit MPG-8, the average sustainable growth rate for the proxy group using this internal growth rate model is 4.73%.

Q WHAT IS THE DCF ESTIMATE USING THESE SUSTAINABLE LONG-TERM GROWTH RATES?

A A DCF estimate based on these sustainable growth rates is developed in Exhibit MPG-9. As shown there, a sustainable growth DCF analysis produces proxy group average and median DCF results for the 13-week period of 8.38% and 8.20%, respectively.

IV.D. Multi-Stage Growth DCF Model

Q HAVE YOU CONDUCTED ANY OTHER DCF STUDIES?

A Yes. My first constant growth DCF is based on consensus analysts' growth rate projections so it is a reasonable reflection of rational investment expectations over the next three to five years. The limitation on this constant growth DCF model is that it cannot reflect a rational expectation that a period of high or low short-term growth can be followed by a change in growth to a rate that is more reflective of long-term sustainable growth. Hence, I performed a multi-stage growth DCF analysis to reflect this outlook of changing growth expectations.

Q WHY DO YOU BELIEVE GROWTH RATES CAN CHANGE OVER TIME?

A Analyst-projected growth rates over the next three to five years will change as utility earnings growth outlooks change. Utility companies go through cycles in making investments in their systems. When utility companies are making large investments, their rate base grows rapidly, which in turn accelerates earnings growth. Once a major construction cycle is completed or levels off, growth in the utility rate base slows and its earnings growth slows from an abnormally high three- to five-year rate to a lower sustainable growth rate.

As major construction cycles extend over longer periods of time, even with an accelerated construction program, the growth rate of the utility will slow simply because rate base growth will slow and the utility has limited human and capital resources available to expand its construction program. Therefore, the three- to five-year growth rate projection should be used as a long-term sustainable growth rate, but not without making a reasonable informed judgment to determine whether it considers the current market environment, the industry, and whether the three- to five-year growth outlook is sustainable.

Q PLEASE DESCRIBE YOUR MULTI-STAGE GROWTH DCF MODEL.

A The multi-stage growth DCF model reflects the possibility of non-constant growth for a company over time. The multi-stage growth DCF model reflects three growth periods: (1) a short-term growth period consisting of the first five years; (2) a transition period, consisting of the next five years (6 through 10); and (3) a long-term growth period starting in year 11 through perpetuity.

For the short-term growth period, I relied on the consensus analysts' growth projections described above in relationship to my constant growth DCF model. For the transition period, the growth rates were reduced or increased by an equal factor reflecting the difference between the analysts' growth rates and the long-term sustainable growth rate. For the long-term growth period, I assumed each company's growth would converge to the maximum sustainable long-term growth rate.

Q WHY IS THE GDP GROWTH PROJECTION A REASONABLE PROXY FOR THE MAXIMUM SUSTAINABLE LONG-TERM GROWTH RATE?

A Utilities cannot indefinitely sustain a growth rate that exceeds the growth rate of the economy in which they sell services. Utilities' earnings/dividend growth is created by increased utility investment or rate base. Such investment, in turn, is driven by service area economic growth and demand for utility service. In other words, utilities invest in plant to meet sales demand growth. Sales growth, in turn, is tied to economic growth in their service areas.

The U.S. Department of Energy, Energy Information Administration ("EIA") has observed utility sales growth tracks the U.S. GDP growth, albeit at a lower level, as shown in Exhibit MPG-10. Utility sales growth has lagged behind GDP growth for more than a decade. As a result, nominal GDP growth is a very conservative proxy for utility sales growth, rate base growth, and earnings growth. Therefore, the U.S. GDP nominal growth rate is a conservative proxy for the highest sustainable long-term growth rate of a utility.

Q IS THERE RESEARCH THAT SUPPORTS YOUR POSITION THAT, OVER THE LONG TERM, A COMPANY'S EARNINGS AND DIVIDENDS CANNOT GROW AT A RATE GREATER THAN THE GROWTH OF THE U.S. GDP?

A Yes. This concept is supported in published analyst literature and academic work. Specifically, in a textbook titled "Fundamentals of Financial Management," published by Eugene Brigham and Joel F. Houston, the authors state as follows:

> The constant growth model is most appropriate for mature companies with a stable history of growth and stable future expectations. Expected growth rates vary somewhat among companies, but <u>dividends for mature firms are often expected to grow in the future at about the same rate as nominal gross domestic product (real GDP plus inflation)</u>.[16]

The use of the economic growth rate is also supported by investment practitioners:

> **Estimating Growth Rates**
>
> One of the advantages of a three-stage discounted cash flow model is that it fits with life cycle theories in regards to company growth. In these theories, companies are assumed to have a life cycle with varying growth characteristics. Typically, the potential for extraordinary growth in the near term eases over time and eventually growth slows to a more stable level.
>
> * * *
>
> Another approach to estimating long-term growth rates is to focus on estimating the overall economic growth rate. Again, this is the approach used in the *Ibbotson Cost of Capital Yearbook*. To obtain the economic growth rate, a forecast is made of the growth rate's component parts. Expected growth can be broken into two main parts: expected inflation and expected real growth. By analyzing these components separately, it is easier to see the factors that drive growth.[17]

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[16] *"Fundamentals of Financial Management*," Eugene F. Brigham and Joel F. Houston, Eleventh Edition 2007, Thomson South-Western, a Division of Thomson Corporation at 298, emphasis added.

[17] *Morningstar, Inc., Ibbotson SBBI 2013 Valuation Yearbook* at 51 and 52.

Q IS THERE ANY ACTUAL INVESTMENT HISTORY THAT SUPPORTS THE NOTION THAT THE CAPITAL APPRECIATION FOR STOCK INVESTMENTS WILL NOT EXCEED THE NOMINAL GROWTH OF THE U.S. GDP?

A Yes. This is evident by a comparison of the compound annual growth of the U.S. GDP compared to the geometric growth of the U.S. stock market. Duff & Phelps measures the historical geometric growth of the U.S. stock market over the period 1926-2015 to be approximately 5.8%. During this same time period, the U.S. nominal compound annual growth of the U.S. GDP was approximately 6.2%.[18]

As such, the compound geometric growth of the U.S. nominal GDP has been higher but comparable to the nominal growth of the U.S. stock market capital appreciation. This historical relationship indicates that the U.S. GDP growth outlook is a conservative estimate of the long-term sustainable growth of U.S. stock investments.

Q HOW DID YOU DETERMINE A SUSTAINABLE LONG-TERM GROWTH RATE THAT REFLECTS THE CURRENT CONSENSUS OUTLOOK OF THE MARKET?

A I relied on the consensus analysts' projections of long-term GDP growth. *Blue Chip Financial Forecasts* publishes consensus economists' GDP growth projections twice a year. These consensus analysts' GDP growth outlooks are the best available measure of the market's assessment of long-term GDP growth. These analyst projections reflect all current outlooks for GDP and are likely the most influential on investors' expectations of future growth outlooks. The consensus economists' published GDP growth rate outlook is 4.25% over the next 10 years.[19]

[18] *Duff & Phelps 2016 Valuation Handbook* inflation rate of 2.9% at 2-4, and U.S. Bureau of Economic Analysis, January 29, 2016.
[19] *Blue Chip Financial Forecasts, December 1, 2016, at 12*.

Therefore, I propose to use the consensus economists' projected 5- and 10-year average GDP consensus growth rates of 4.25%, as published by *Blue Chip Financial Forecasts*, as an estimate of long-term sustainable growth. *Blue Chip Financial Forecasts* projections provide real GDP growth projections of 2.2% and GDP inflation of 2.0%[20] over the 5-year and 10-year projection periods. These consensus GDP growth forecasts represent the most likely views of market participants because they are based on published consensus economist projections.

Q DO YOU CONSIDER OTHER SOURCES OF PROJECTED LONG-TERM GDP GROWTH?

A Yes, and these sources corroborate my consensus analysts' projections, as shown below in Table 8.

TABLE 8

GDP Forecasts

Source	Term	Real GDP	Inflation	Nominal GDP
Blue Chip Financial Forecasts	5-10 Yrs	2.2%	2.0%	4.25%
EIA – Annual Earnings Outlook	25 Yrs	2.2%	2.1%	4.4%
Congressional Budget Office	10 Yrs	2.0%	2.0%	4.0%
Moody's Analytics	30 Yrs	2.0%	2.0%	4.1%
Social Security Administration	50 Yrs			4.4%
The Economist Intelligence Unit	35 Yrs	1.9%	2.0%	3.9%

The EIA in its *Annual Energy Outlook* projects real GDP out until 2040. In its 2016 Annual Report, the EIA projects real GDP through 2040 to be 2.2% and a

[20] *Id.*

long-term GDP price inflation projection of 2.1%. The EIA data supports a long-term nominal GDP growth outlook of 4.4%.[21]

Also, the Congressional Budget Office ("CBO") makes long-term economic projections. The CBO is projecting real GDP growth to be 2.0% during the next 10 years with a GDP price inflation outlook of 2.0%.[22] The CBO 10-year outlook for nominal GDP based on this projection is 4.0%.

Moody's Analytics also makes long-term economic projections. In its recent 30-year outlook to 2045, Moody's Analytics is projecting real GDP growth of 2.0% with GDP inflation of 2.0%.[23] Based on these projections, Moody's is projecting nominal GDP growth of 4.1% over the next 30 years.

The Social Security Administration ("SSA") makes long-term economic projections out to 2090. The SSA's nominal GDP projection, under its intermediate cost scenario of 50 years, is 4.4%.[24] The Economist Intelligence Unit, a division of *The Economist* and a third-party data provider to SNL Financial, makes a long-term economic projection out to 2050.[25] The Economist Intelligence Unit is projecting real GDP growth of 1.9% with an inflation rate of 2.0% out to 2050. The real GDP growth projection is in line with the consensus economists. The long-term nominal GDP projection based on these outlooks is approximately 3.9%.

The real GDP and nominal GDP growth projections made by these independent sources support the use of the consensus economist 5-year and 10-year projected GDP growth outlooks as a reasonable estimate of market participants' long-term GDP growth outlooks.

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[21]DOE/EIA Annual Energy Outlook 2016 With Projections to 2040, May 2016, Table 20.
[22]*CBO: The Budget and Economic Outlook: 2016 to 2026*, January 2016, at 140.
[23]www.economy.com, *Moody's Analytics Forecast*, January 6, 2016.
[24]www.ssa.gov, "2016 OASDI Trustees Report," Table VI.G4.
[25]*SNL Financial, Economist Intelligence Unit*, downloaded on January 13, 2016.

Q WHAT STOCK PRICE, DIVIDEND, AND GROWTH RATES DID YOU USE IN YOUR MULTI-STAGE GROWTH DCF ANALYSIS?

A I relied on the same 13-week average stock prices and the most recent quarterly dividend payment data discussed above. For stage one growth, I used the consensus analysts' growth rate projections discussed above in my constant growth DCF model. The first stage growth covers the first five years, consistent with the term of the analyst growth rate projections. The second stage, or transition stage, begins in year 6 and extends through year 10. The second stage growth transitions the growth rate from the first stage to the third stage using a linear trend. For the third stage, or long-term sustainable growth stage, starting in year 11, I used a 4.25% long-term sustainable growth rate based on the consensus economists' long-term projected nominal GDP growth rate.

Q WHAT ARE THE RESULTS OF YOUR MULTI-STAGE GROWTH DCF MODEL?

A As shown in Exhibit MPG-11, the average and median DCF returns on equity for my proxy group using the 13-week average stock price are 8.18% and 8.05%, respectively.

Q PLEASE SUMMARIZE THE RESULTS FROM YOUR DCF ANALYSES.

A The results from my DCF analyses are summarized in Table 9 below:

TABLE 9

Summary of DCF Results

Description	Proxy Group Average	Proxy Group Median
Constant Growth DCF Model (Analysts' Growth)	9.23%	9.30%
Constant Growth DCF Model (Sustainable Growth)	8.38%	8.20%
Multi-Stage Growth DCF Model	8.18%	8.05%

I conclude that my DCF studies support a return on equity of 9.3%, primarily based on my constant growth DCF (analysts' growth) result, which I find as a reasonable high-end DCF return estimate.

IV.E. Risk Premium Model

Q PLEASE DESCRIBE YOUR BOND YIELD PLUS RISK PREMIUM MODEL.

A This model is based on the principle investors require a higher return to assume greater risk. Common equity investments have greater risk than bonds because bonds have more security of payment in bankruptcy proceedings than common equity and the coupon payments on bonds represent contractual obligations. In contrast, companies are not required to pay dividends or guarantee returns on common equity investments. Therefore, common equity securities are considered to be riskier than bond securities.

This risk premium model is based on two estimates of an equity risk premium. First, I estimated the difference between the required return on utility common equity investments and U.S. Treasury bonds. The difference between the required return on common equity and the Treasury bond yield is the risk premium. I estimated the risk premium on an annual basis for each year over the period January

1986 through September 2016. The common equity required returns were based on regulatory commission-authorized returns for electric utility companies. Authorized returns are typically based on expert witnesses' estimates of the contemporary investor-required return.

The second equity risk premium estimate is based on the difference between regulatory commission-authorized returns on common equity and contemporary "A" rated utility bond yields by Moody's. I selected the period January 1986 through September 2016 because public utility stocks consistently traded at a premium to book value during that period. This is illustrated in Exhibit MPG-12, which shows the market-to-book ratio since 1986 for the electric utility industry was consistently above a multiple of 1.0x. Over this period, regulatory authorized returns were sufficient to support market prices that at least exceeded book value. This is an indication that regulatory authorized returns on common equity supported a utility's ability to issue additional common stock without diluting existing shares. It further demonstrates utilities were able to access equity markets without a detrimental impact on current shareholders.

Based on this analysis, as shown in Exhibit MPG-13, the average indicated equity risk premium over U.S. Treasury bond yields has been 5.47%. Since the risk premium can vary depending upon market conditions and changing investor risk perceptions, I believe using an estimated range of risk premiums provides the best method to measure the current return on common equity for a risk premium methodology.

I incorporated five-year and 10-year rolling average risk premiums over the study period to gauge the variability over time of risk premiums. These rolling average risk premiums mitigate the impact of anomalous market conditions and skewed risk premiums over an entire business cycle. As shown on my Exhibit MPG-13, the five-year rolling average risk premium over Treasury bonds ranged from 4.25% to 6.75%, while the 10-year rolling average risk premium ranged from 4.38% to 6.41%.

As shown on my Exhibit MPG-14, the average indicated equity risk premium over contemporary Moody's utility bond yields was 4.09%. The five-year and 10-year rolling average risk premiums ranged from 2.88% to 5.58% and 3.20% to 5.05%, respectively.

Q DO YOU BELIEVE THAT THE TIME PERIOD USED TO DERIVE THESE EQUITY RISK PREMIUM ESTIMATES IS APPROPRIATE TO FORM ACCURATE CONCLUSIONS ABOUT CONTEMPORARY MARKET CONDITIONS?

A Yes. The time period I use in this risk premium study is a generally accepted period to develop a risk premium study using "expectational" data.

Contemporary market conditions can change dramatically during the period that rates determined in this proceeding will be in effect. A relatively long period of time where stock valuations reflect premiums to book value is an indication the authorized returns on equity and the corresponding equity risk premiums were supportive of investors' return expectations and provided utilities access to the equity markets under reasonable terms and conditions. Further, this time period is long enough to smooth abnormal market movement that might distort equity risk premiums. While market conditions and risk premiums do vary over time, this historical time period is a reasonable period to estimate contemporary risk premiums.

Alternatively, some studies, such as Duff & Phelps referred to later in this testimony, have recommended that use of "actual achieved investment return data" in a risk premium study should be based on long historical time periods. The studies find that achieved returns over short time periods may not reflect investors' expected returns due to unexpected and abnormal stock price performance. Short-term, abnormal actual returns would be smoothed over time and the achieved actual investment returns over long time periods would approximate investors' expected returns. Therefore, it is reasonable to assume that averages of annual achieved returns over long time periods will generally converge on the investors' expected returns.

My risk premium study is based on expectational data, not actual investment returns, and, thus, need not encompass a very long historical time period.

Q BASED ON HISTORICAL DATA, WHAT RISK PREMIUM HAVE YOU USED TO ESTIMATE GULF POWER'S COST OF COMMON EQUITY IN THIS PROCEEDING?

A The equity risk premium should reflect the relative market perception of risk in the utility industry today. I have gauged investor perceptions in utility risk today in Exhibit MPG-15, where I show the yield spread between utility bonds and Treasury bonds over the last 36 years. As shown in this schedule, the average utility bond yield spreads over Treasury bonds for "A" and "Baa" rated utility bonds for this historical period are 1.52% and 1.96%, respectively. The utility bond yield spreads over Treasury bonds for "A" and "Baa" rated utilities for 2016 were 1.37% and 2.18%, respectively. The current average "A" rated utility bond yield spread over Treasury bond yields is now lower than the 36-year average spread. The current "Baa" rated utility bond yield spread over Treasury bond yields is higher than the 36-year average spread.

A current 13-week average "A" rated utility bond yield of 3.98% when compared to the current Treasury bond yield of 2.75% as shown in Exhibit MPG-16, page 1, implies a yield spread of around 123 basis points. This current utility bond yield spread is lower than the 36-year average spread for "A" rated utility bonds of 1.52%. The current spread for the "Baa" rated utility bond yield of 1.80% is also lower than the 36-year average spread of 1.96%. Further, when compared to the projected Treasury bond yield of 3.40%, the current "Baa" utility spread is around 1.15%, lower than the 36-year average of 1.96%.

These utility bond yield spreads are evidence that the market perception of utility risk is about average relative to this historical time period and demonstrate that utilities continue to have strong access to capital in the current market.

Q HOW DO YOU DETERMINE WHERE A REASONABLE RISK PREMIUM IS IN THE CURRENT MARKET?

A I observed the spread of Treasury securities relative to public utility bonds and corporate bonds in gauging whether or not the risk premium in current market prices is relatively stable relative to the past. What this observation of market evidence clearly provides is that the valuations in the current market place an above average risk premium on securities that have greater risk.

This market evidence is summarized below in Table 10, which shows the utility bond yield spreads over Treasury bond yields on average for the period 1980 through the first three quarters of 2016. I also show the corporate bond yield spreads for Aaa corporates and Baa corporates.

TABLE 10

Comparison of Yield Spreads Over Treasury Bonds

Description	Utility A	Utility Baa	Corporate Aaa	Corporate Baa
Average Historical Spread	1.52%	1.96%	0.84%	1.94%
Q3, 2016 Spread	1.37%	2.18%	1.10%	2.22%

Source: Exhibit MPG-15.

The observable yield spreads shown in the table above illustrate that securities of greater risk have above average risk premiums relative to the long-term historical average risk premium. Specifically, A-rated utility bonds to Treasuries, a relatively low-risk investment, have a yield spread in 2016 that has been very comparable to that of its long-term historical yield spread. The A utility bond yield spread is actually below the yield spread over the last 36 years. This is an indication that low risk investments like Aaa corporate bond yield and A-rated utility bond yield have premium values relative to minimal risk Treasury securities.

In contrast, the higher risk Baa utility and corporate bond yields currently have an above-average yield spread of approximately 20 basis points (2.18% vs. 1.96%). The higher risk Baa utility bond yields do not have the same premium valuations as their lower risk A-rated utility bond yields, and thus the yield spread for greater risk investments is wider than lower risk investments.

This illustrates that securities with greater risk such as Baa yields versus A yields are commanding above average risk premiums in the current marketplace. Utility equity securities are greater risk than Baa utility bonds. Because greater risk securities appear to support an above-average risk premium relative to historical averages, this would support an above-average risk premium in measuring a fair return on equity for a utility or equity security.

Q WHAT IS YOUR RECOMMENDED RETURN FOR GULF POWER BASED ON YOUR RISK PREMIUM STUDY?

A To be conservative, I am recommending more weight to the high-end risk premium estimates than the low-end. I state this because of the relatively low level of interest rates now but relative upward movements of utility yields more recently. Hence, I propose to provide 75% weight to my high-end risk premium estimates and 25% to the low-end. Applying these weights, the risk premium for Treasury bond yields would be approximately 6.13%,[26] which is considerably higher than the 31-year average risk premium of 5.47% and reasonably reflective of the 3.4% projected Treasury bond yield. A Treasury bond risk premium of 6.13% and projected Treasury bond yield of 3.4% produce a risk premium estimate of 9.53%. Similarly, applying these weights to the utility risk premium indicates a risk premium of 4.91%.[27] This risk premium is above the 31-year historical average risk premium of 4.09%. This risk premium in connection with the current Baa observable utility bond yield of 4.55% produces an estimated return on equity of approximately 9.46%.

Based on this methodology, both my Treasury bond risk premium and my utility bond risk premium indicate a return on equity in the range of 9.46% to 9.53% with a midpoint of 9.50%.

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[26](4.25% * 25%) + (6.75% * 75%) = 6.13%.
[27](2.88% * 25%) + (5.58% * 75%) = 4.91%.

IV.F. Capital Asset Pricing Model ("CAPM")

Q PLEASE DESCRIBE THE CAPM.

A The CAPM method of analysis is based upon the theory that the market-required rate of return for a security is equal to the risk-free rate, plus a risk premium associated with the specific security. This relationship between risk and return can be expressed mathematically as follows:

$R_i = R_f + B_i \times (R_m - R_f)$ where:

R_i	=	Required return for stock i
R_f	=	Risk-free rate
R_m	=	Expected return for the market portfolio
B_i=		Beta - Measure of the risk for stock

The stock-specific risk term in the above equation is beta. Beta represents the investment risk that cannot be diversified away when the security is held in a diversified portfolio. When stocks are held in a diversified portfolio, firm-specific risks can be eliminated by balancing the portfolio with securities that react in the opposite direction to firm-specific risk factors (e.g., business cycle, competition, product mix, and production limitations).

The risks that cannot be eliminated when held in a diversified portfolio are non-diversifiable risks. Non-diversifiable risks are related to the market in general and referred to as systematic risks. Risks that can be eliminated by diversification are non-systematic risks. In a broad sense, systematic risks are market risks and non-systematic risks are business risks. The CAPM theory suggests the market will not compensate investors for assuming risks that can be diversified away. Therefore, the only risk investors will be compensated for are systematic or non-diversifiable risks. The beta is a measure of the systematic or non-diversifiable risks.

Q PLEASE DESCRIBE THE INPUTS TO YOUR CAPM.

A The CAPM requires an estimate of the market risk-free rate, the Company's beta, and the market risk premium.

Q WHAT DID YOU USE AS AN ESTIMATE OF THE MARKET RISK-FREE RATE?

A As previously noted, *Blue Chip Financial Forecasts*' projected 30-year Treasury bond yield is 3.40%.[28] The current 30-year Treasury bond yield is 2.75%, as shown in Exhibit MPG-16. I used *Blue Chip Financial Forecasts*' projected 30-year Treasury bond yield of 3.40% for my CAPM analysis.

Q WHY DID YOU USE LONG-TERM TREASURY BOND YIELDS AS AN ESTIMATE OF THE RISK-FREE RATE?

A Treasury securities are backed by the full faith and credit of the United States government so long-term Treasury bonds are considered to have negligible credit risk. Also, long-term Treasury bonds have an investment horizon similar to that of common stock. As a result, investor-anticipated long-run inflation expectations are reflected in both common stock required returns and long-term bond yields. Therefore, the nominal risk-free rate (or expected inflation rate and real risk-free rate) included in a long-term bond yield is a reasonable estimate of the nominal risk-free rate included in common stock returns.

Treasury bond yields, however, do include risk premiums related to unanticipated future inflation and interest rates. A Treasury bond yield is not a risk-free rate. Risk premiums related to unanticipated inflation and interest rates are systematic of market risks. Consequently, for companies with betas less than 1.0,

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[28] *Blue Chip Financial Forecasts*, December 1, 2016 at 2.

using the Treasury bond yield as a proxy for the risk-free rate in the CAPM analysis can produce an overstated estimate of the CAPM return.

Q WHAT BETA DID YOU USE IN YOUR ANALYSIS?

A As shown in Exhibit MPG-17, the proxy group average Value Line beta estimate is 0.70.

Q HOW DID YOU DERIVE YOUR MARKET RISK PREMIUM ESTIMATE?

A I derived two market risk premium estimates: a forward-looking estimate and one based on a long-term historical average.

The forward-looking estimate was derived by estimating the expected return on the market (as represented by the S&P 500) and subtracting the risk-free rate from this estimate. I estimated the expected return on the S&P 500 by adding an expected inflation rate to the long-term historical arithmetic average real return on the market. The real return on the market represents the achieved return above the rate of inflation.

Duff & Phelps' *2016 Valuation Handbook* estimates the historical arithmetic average real market return over the period 1926 to 2015 as 8.7%.[29] A current consensus analysts' inflation projection, as measured by the Consumer Price Index, is 2.3%.[30] Using these estimates, the expected market return is 11.20%.[31] The market risk premium then is the difference between the 11.20% expected market return and my 3.40% risk-free rate estimate, or approximately 7.80%.

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[29] *Duff & Phelps, 2016 Valuation Handbook: Guide to Cost of Capital* at 2-4. Calculated as [(1+0.12) / (1+0.03)] – 1.

[30] *Blue Chip Financial Forecasts*, December 1, 2016 at 2.

[31] { [(1 + 0.087) ∗ (1 + 0.023)] – 1 } ∗ 100.

My historical estimate of the market risk premium was also calculated by using data provided by Duff & Phelps in its *2016 Valuation Handbook*. Over the period 1926 through 2015, the Duff & Phelps study estimated that the arithmetic average of the achieved total return on the S&P 500 was 12.0%[32] and the total return on long-term Treasury bonds was 6.00%.[33] The indicated market risk premium is 6.0% (12.0% - 6.0% = 6.0%).

Q HOW DOES YOUR ESTIMATED MARKET RISK PREMIUM RANGE COMPARE TO THAT ESTIMATED BY DUFF & PHELPS?

A The Duff & Phelps analysis indicates a market risk premium falls somewhere in the range of 5.5% to 6.9%. My market risk premium falls in the range of 6.0% to 7.8%. My average market risk premium of 6.9% is at the high-end of the Duff & Phelps range.

Q HOW DOES DUFF & PHELPS MEASURE A MARKET RISK PREMIUM?

A Duff & Phelps makes several estimates of a forward-looking market risk premium based on actual achieved data from the historical period of 1926 through 2015 as well as normalized data. Using this data, Duff & Phelps estimates a market risk premium derived from the total return on large company stocks (S&P 500), less the income return on Treasury bonds. The total return includes capital appreciation, dividend or coupon reinvestment returns, and annual yields received from coupons and/or dividend payments. The income return, in contrast, only reflects the income return received from dividend payments or coupon yields. Duff & Phelps claims the income return is the only true risk-free rate associated with Treasury bonds and is

[32]*Duff & Phelps, 2016 Valuation Handbook: Guide to Cost of Capital* at 2-4.
[33]*Id.*

the best approximation of a truly risk-free rate.[34] I disagree with this assessment from Duff & Phelps because it does not reflect a true investment option available to the marketplace and therefore does not produce a legitimate estimate of the expected premium of investing in the stock market versus that of Treasury bonds. Nevertheless, I will use Duff & Phelps' conclusion to show the reasonableness of my market risk premium estimates.

Duff & Phelps' range is based on several methodologies. First, Duff & Phelps estimates a market risk premium of 6.9% based on the difference between the total market return on common stocks (S&P 500) less the income return on Treasury bond investments over the 1926-2015 period.

Second, Duff & Phelps updated the Ibbotson & Chen supply-side model which found that the 6.9% market risk premium based on the S&P 500 was influenced by an abnormal expansion of price-to-earnings ("P/E") ratios relative to earnings and dividend growth during the period, primarily over the last 25 years. Duff & Phelps believes this abnormal P/E expansion is not sustainable.[35] Therefore, Duff & Phelps adjusted this market risk premium estimate to normalize the growth in the P/E ratio to be more in line with the growth in dividends and earnings. Based on this alternative methodology, Duff & Phelps published a long-horizon supply-side market risk premium of 6.03%.[36]

Finally, Duff & Phelps developed its own recommended equity, or market, risk premium by employing an analysis that considered a wide range of economic information, multiple risk premium estimation methodologies, and the current state of the economy by observing measures such as the level of stock indices and corporate spreads as indicators of perceived risk. Based on this methodology, and utilizing a

[34] *Id.* at 3-28.
[35] *Id.* at 3-30.
[36] *Id.* at 3-31.

"normalized" risk-free rate of 4.0%, Duff & Phelps concluded that the current expected, or forward-looking, market risk premium is 5.5%, implying an expected return on the market of 9.5%.[37]

Q WHAT ARE THE RESULTS OF YOUR CAPM ANALYSIS?

A As shown in Exhibit MPG-18, based on my low market risk premium of 6.0% and my high market risk premium of 7.8%, a risk-free rate of 3.40%, and a beta of 0.70, my CAPM analysis produces a return of 7.57% to 8.82%. Based on my assessment of risk premiums in the current market, as discussed above, I recommend my high-end CAPM return estimate of 8.80%. This CAPM most closely aligns the market risk premium with the current risk-free rate.

IV.G. Return on Equity Summary

Q BASED ON THE RESULTS OF YOUR RETURN ON COMMON EQUITY ANALYSES DESCRIBED ABOVE, WHAT RETURN ON COMMON EQUITY DO YOU RECOMMEND FOR GULF POWER?

A Based on my analyses, I estimate Gulf Power's current market cost of equity to be 9.20%.

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[37] *Id.* at 3-40.

TABLE 11

Return on Common Equity Summary

Description	**Results**
DCF	9.30%
Risk Premium	9.50%
CAPM	8.80%

My recommended return on common equity of 9.20% is at the approximate midpoint of my estimated range of 8.80% to 9.50%. As shown in Table 11 above, the high-end of my estimated range is based on my risk premium studies. The low-end is based on my CAPM return. The DCF result falls within my range.

My return on equity estimates reflect observable market evidence, the impact on Federal Reserve policies on current and expected long-term capital market costs, an assessment of the current risk premium built into current market securities, and a general assessment of the current investment risk characteristics of the electric utility industry, and the market's demand for utility securities.

IV.H. Financial Integrity

Q WILL YOUR RECOMMENDED OVERALL RATE OF RETURN SUPPORT AN INVESTMENT GRADE BOND RATING FOR GULF POWER?

A Yes. I have reached this conclusion by comparing the key credit rating financial ratios for Gulf Power at my proposed return on equity and the Company's actual test-year-end capital structure to S&P's benchmark financial ratios using S&P's new credit metric ranges.

Q PLEASE DESCRIBE THE MOST RECENT S&P FINANCIAL RATIO CREDIT METRIC METHODOLOGY.

A S&P publishes a matrix of financial ratios corresponding to its assessment of the business risk of utility companies and related bond ratings. On May 27, 2009, S&P expanded its matrix criteria by including additional business and financial risk categories.[38]

Based on S&P's most recent credit matrix, the business risk profile categories are "Excellent," "Strong," "Satisfactory," "Fair," "Weak," and "Vulnerable." Most utilities have a business risk profile of "Excellent" or "Strong."

The financial risk profile categories are "Minimal," "Modest," "Intermediate," "Significant," "Aggressive," and "Highly Leveraged." Most of the utilities have a financial risk profile of "Aggressive." Gulf Power has an "Excellent" business risk profile and a "Significant" financial risk profile.

Q PLEASE DESCRIBE S&P'S USE OF THE FINANCIAL BENCHMARK RATIOS IN ITS CREDIT RATING REVIEW.

A S&P evaluates a utility's credit rating based on an assessment of its financial and business risks. A combination of financial and business risks equates to the overall assessment of Gulf Power's total credit risk exposure. On November 19, 2013, S&P updated its methodology. In its update, S&P published a matrix of financial ratios that defines the level of financial risk as a function of the level of business risk.

S&P publishes ranges for primary financial ratios that it uses as guidance in its credit review for utility companies. The two core financial ratio benchmarks it relies on in its credit rating process include: (1) Debt to Earnings Before Interest,

[38]S&P updated its 2008 credit metric guidelines in 2009, and incorporated utility metric benchmarks with the general corporate rating metrics. *Standard & Poor's RatingsDirect*: "Criteria Methodology: Business Risk/Financial Risk Matrix Expanded," May 27, 2009.

Taxes, Depreciation and Amortization ("EBITDA"); and (2) Funds From Operations ("FFO") to Total Debt.[39]

Q HOW DID YOU APPLY S&P'S FINANCIAL RATIOS TO TEST THE REASONABLENESS OF YOUR RATE OF RETURN RECOMMENDATIONS?

A I calculated each of S&P's financial ratios based on Gulf Power's cost of service for its retail jurisdictional operations. While S&P would normally look at total consolidated Gulf Power financial ratios in its credit review process, my investigation in this proceeding is not the same as S&P's. I am attempting to judge the reasonableness of my proposed cost of capital for rate-setting in Gulf Power's retail regulated utility operations. Hence, I am attempting to determine whether my proposed rate of return will in turn support cash flow metrics, balance sheet strength, and earnings that will support an investment grade bond rating and Gulf Power's financial integrity.

Q DID YOU INCLUDE ANY OFF-BALANCE SHEET DEBT EQUIVALENTS?

A Yes, I did. The off-balance sheet debt equivalents and their associated amortization and interest expense were obtained from the S&P Capital IQ website for 2015 and used in my analysis presented on my Exhibit MPG-3 and Exhibit MPG-19.

Q PLEASE DESCRIBE THE RESULTS OF THIS CREDIT METRIC ANALYSIS AS IT RELATES TO GULF POWER.

A The S&P financial metric calculations for Gulf Power at a 9.20% return are developed on Exhibit MPG-19. The credit metrics produced below, with Gulf

[39] *Standard & Poor's RatingsDirect*: "Criteria: Corporate Methodology," November 19, 2013.

Power's financial risk profile from S&P of "Intermediate" and business risk score by S&P of "Excellent", will be used to assess the strength of the credit metrics based on Gulf Power's retail operations in Florida.

Gulf Power's adjusted total debt ratio is approximately 47.1% from my Exhibit MPG-3, page 1. This adjusted debt ratio as discussed above, is generally consistent with the utility industry average adjusted debt ratio with an 'A' bond rating, comparable to that of the proxy group, and reasonably consistent with an A- bond rating which is consistent with Gulf Power's current bond rating. Hence, I concluded this capital structure reasonably supports Gulf Power's current investment grade bond rating.

Based on an equity return of 9.20%, Gulf Power will be provided an opportunity to produce a debt to Earnings Before Interest, Taxes, Depreciation and Amortization ("EBITDA") ratio of 3.3x. This is within S&P's "Intermediate" guideline range of 2.5x to 3.5x."[40] This ratio supports an investment grade credit rating.

Gulf Power's retail operations FFO to total debt coverage at a 9.20% equity return is 22%, which is within S&P's "Significant" metric guideline range of 13% to 22%. This FFO/total debt ratio will support an investment grade bond rating.

At my recommended return on equity of 9.20% and proposed capital structure, and the Company's embedded debt cost, Gulf Power's financial credit metrics continue to support credit metrics at an investment grade utility level.

[40] *Id.*

V. RESPONSE TO GULF POWER WITNESS DR. JAMES VANDER WEIDE

Q WHAT IS DR. VANDER WEIDE'S RETURN ON EQUITY RECOMMENDATION?

A At page 51, Gulf Power witness Dr. Vander Weide summarizes his results for his proxy group and Gulf Power's current market cost of equity. There, he concludes that a fair return on equity for his proxy companies falls in the range of 9.7% to 10.9%, with an average return on equity of 10.4%. Dr. Vander Weide goes on to state that the proxy companies are similar in business risk to Gulf Power, and Gulf Power should have the same after-tax weighted average cost of capital ("ATWACC") as his proxy companies. Dr. Vander Weide then determines that the required return on equity to produce the same ATWACC for Gulf Power and the proxy companies is 11.0%.

Based on these analyses, Dr. Vander Weide recommends a return on equity of 11.0% for Gulf Power in this case.

Q HOW DID DR. VANDER WEIDE ARRIVE AT HIS ESTIMATED RETURN ON EQUITY AND POINT ESTIMATE OF 10.4% FOR HIS PROXY COMPANIES?

A Dr. Vander Weide relied on market-based models to estimate the current market cost of equity for his proxy group companies. As shown below in Table 12, which summarizes the results Dr. Vander Weide offers at page 51 of his testimony, Dr. Vander Weide relied on a constant growth DCF study, risk premium methodologies, and capital asset pricing model studies. Again, these results are summarized in Table 12 below.

TABLE 12

Proxy Company Results

Model	Vander Weide Results: Proxy Company[1] (1)	ATWACC Adder[2] (2)	Adjusted[2] (3)
Constant Growth DCF	9.7%		9.5%
Ex Ante Risk Premium	10.9%		8.68% - 9.25%
Ex Post Risk Premium	10.6%		8.21% - 8.75%
CAPM Historical	10.1%		8.6%
CAPM DCF	10.8%		9.2%
Average	10.4%	0.6%	
Recommended Range	9.7% - 10.8%		8.6% - 9.5%

Sources:

[1]Vander Weide Direct Testimony at 51.
[2]Exhibit MPG-18 and Exhibit MPG-19.

As shown in Table 12 above under Column 1, Dr. Vander Weide's analyses produced a return on equity in the range of 9.7% to 10.8%. The midpoint of this range is 10.4%. As shown under Column 2, Dr. Vander Weide proposes a 0.6% adder for his ATWACC adjustment. The combination of the average result for Column 1 and the ATWACC adder in Column 2 supports the Company's requested return on equity of 11%.

V.A. ATWACC Adder

Q HOW DID DR. VANDER WEIDE PRODUCE THE ATWACC ADDER OF 60 BASIS POINTS SHOWN IN TABLE 12 ABOVE?

A This ATWACC adder was developed on his Exhibit No.___(JVW-1), Schedule 10. On that schedule, Dr. Vander Weide relies on Gulf Power's long-term debt cost of 4.4%, preferred stock cost of 6.15%, and common equity return for the proxy group companies of 10.4%. He then restates these costs to their after-tax costs. This effectively reduces the cost of debt from 4.4% down to an after-tax cost of 2.68%. Debt cost is reduced because debt interest expense is tax deductible whereas preferred stock dividends and common stock return are not tax deductible.

He then relied on <u>market</u> value capital structures for a 10-year average weight for *The Value Line Investment Survey* ("*Value Line*") Electric Utility Industry. As shown in the top portion of his Schedule 10, he relies on a common equity ratio of 60%, a long-term debt ratio of 39.49%, and a preferred stock ratio of 0.51%. These factors produce an ATWACC of 7.33% for the *Value Line* electric utilities at a 10.4% return on equity.

Next, Dr. Vander Weide relies on the long-term sources of capital proposed by Gulf Power in this proceeding to determine its rate of return. Dr. Vander Weide found that for Gulf Power to earn the same ATWACC as the Electric Utility industry (7.33%) at a 10.4% return on equity, Gulf Power needs to earn an 11.0% return on equity.

Q IS DR. VANDER WEIDE'S ESTIMATED RETURN ON EQUITY OF 11% FOR GULF POWER REASONABLE?

A No. Dr. Vander Weide's proposed ATWACC adjustment should be rejected for several reasons. First, he has not provided an accurate comparison of the capital structure weights for the Electric Utility Industry followed by *Value Line* and Gulf Power. Specifically, Dr. Vander Weide relies on a 60% common equity for the 10-year average *Value Line* electric utilities on his Schedule 10. This is flawed for at least two reasons. First, the proxy group companies are not the Electric Utility Industry followed by *Value Line*. Rather, they are a group of companies which Dr. Vander Weide believes have a similar business risk to Gulf Power, but different financial risk. Hence, he should have focused on the capital structure weights of the proxy group, not the Electric Utility Industry. Second, and importantly, Dr. Vander Weide provided no evidence that the *Value Line* Electric Utility Industry has the same business or financial risk to that of Gulf Power. This methodology simply is not reliable. By comparing the capital structure weight of Gulf Power to his proxy group shows that Gulf Power has more common equity than the proxy group, not less. Specifically, reflecting only long-term investor capital, Gulf Power has approximately 53.96% common equity whereas the proxy group companies have approximately 47.1%. Hence, if this methodology is used at all, it should be used to reduce the return on equity for Gulf Power relative to the proxy group. However, I believe the methodology is flawed and should be rejected and not relied on at all.

Q DO YOU HAVE OTHER CONCERNS WITH DR. VANDER WEIDE'S PROPOSED ATWACC METHODOLOGY?

A Yes. This methodology simply is flawed and produces an unjust result for Gulf Power. Dr. Vander Weide's adjustment is actually more of a market-to-book ratio adjustment rather than a financial risk adjustment. Essentially, he is estimating the return on equity on a market value capital structure that needs to be applied to a book value capital structure in order to support his recommended return on equity based on market value capital structure weight. Stated differently, this is a market-to-book ratio adjustment to the estimated return on common equity. A market-to-book ratio adjustment is designed to maintain a targeted market value of the stock, rather than to ensure that utility investors are fairly compensated for making investment in utility plant and equipment. The concept is fundamentally flawed and imbalanced.

Q CAN YOU PROVIDE AN EXAMPLE WHY THE ATWACC OR MARKET-TO-BOOK RATIO PRODUCES AN IMBALANCED RESULT?

A Yes. The objective of measuring a fair return on equity is to ensure that investors earn a rate of return that is comparable to the return they can earn on another investment of comparable risk. From this standpoint, investors should be allowed to earn the same rate of return on making utility plant investments as they can by reinvesting in the stocks of the comparable risk proxy groups.

Based on Dr. Vander Weide's analyses, investors should expect to earn a return of 10.4% by investing in the stocks of the proxy group. In significant contrast, under Dr. Vander Weide's proposed ATWACC methodology, that same investor could earn a return on plant investment in Gulf Power of 11% without taking additional risk. This is not a comparable return for investments in comparable risk enterprises. Dr. Vander Weide's ATWACC adjustment or market-to-book ratio adjustment to his proxy group return on equity estimates should be rejected.

V.B. Vander Weide's DCF

Q PLEASE DESCRIBE DR. VANDER WEIDE'S DCF ANALYSIS.

A Dr. Vander Weide relied on a quarterly compounded DCF study, with an adjustment to the proxy group stock price of 5% to reflect flotation cost adjustments. Based on this study, Dr. Vander Weide estimates a DCF return for his proxy group of 9.7%.[41] This 9.7% DCF return is based on a proxy group average growth rate of 5.69%, and next year dividend yield of around 4.0% (adjusted for flotation costs).

Q DO YOU TAKE ISSUE WITH DR. VANDER WEIDE'S DCF ANALYSES?

A Yes. I have several issues concerning his DCF analyses. First, Dr. Vander Weide's constant growth DCF study is overstated because the analysts' three- to five-year growth rates are not reasonable estimates of long-term sustainable growth. The constant growth DCF model used by Dr. Vander Weide requires an estimated long-term sustainable growth. In contrast, the analysts' growth rates he relies on reflect only the outlooks over the next three to five years. To the extent the analysts' growth rate estimates are not reasonable estimates of long-term sustainable growth, then the DCF return estimate he produces from this study is not reliable. Because the analysts' growth rates exceed a reasonable estimate of long-term sustainable growth, Dr. Vander Weide's DCF return estimate is inflated and should be rejected.

[41]Vander Weide Direct Testimony at 26 and JHV Schedule 1-1.

Second, Dr. Vander Weide adjusted his dividend yield calculation by reducing the stock price by 5%. This adjustment reflected the estimated cost of issuing stock to the public or flotation cost expense. As outlined below, this flotation cost adjustment is not a known and measurable cost for Gulf Power, and it overstates Gulf Power's revenue requirement because it allows for recovery of an expense which Dr. Vander Weide has failed to prove was actually incurred by Gulf Power, and therefore is not appropriately included in the development of its cost of service.

Finally, Dr. Vander Weide's model overstates a fair return on equity for Gulf Power because it reflects quarterly compounding of dividends. While Gulf Power and the proxy group companies do pay quarterly dividends, the dividend reinvestment return earned by investors in these proxy group companies is not paid by the utility. Therefore, the compounded return associated with quarterly dividends is not a cost to the utility.

Rather, dividend reinvestment returns are paid by receiving dividends from the utility and reinvesting in another security of comparable risk and return. While investors do expect to receive this reinvestment return, it is not a cost to the utility because the utility does not pay the reinvestment cost. Therefore, the dividend reinvestment return should not be included as a measurement of the utility's cost of capital to the utility. If the dividend reinvestment return is included in the utility's cost of capital, then investors will be allowed to earn the dividend reinvestment return twice – first, from the utility in the authorized return on equity, and then again after the utility pays the investor dividends and the investor reinvests the dividend in another security at a comparable return.

Q PLEASE DESCRIBE WHY YOU BELIEVE DR. VANDER WEIDE'S THREE- TO FIVE-YEAR ANALYSTS' GROWTH RATE PROJECTIONS ARE NOT REASONABLE ESTIMATES OF LONG-TERM SUSTAINABLE GROWTH.

A As shown on his JHV Schedule 1-1, the growth rates from his proxy group predominantly exceed the projected nominal growth of the U.S. GDP. As stated above, consensus economists' projections of long-term growth for the U.S. GDP are around 4.25%. In contrast, Dr. Vander Weide's 26 utility company proxy group has an average growth rate of 5.69%, as shown on my Exhibit MPG-20.

I explained above that both practitioners and academics support the notion that long-term sustainable growth cannot be greater than the growth rate of the economy in which the company sells its goods and services. Growth can exceed the service area economic growth over short periods of time, but over the long-term the expectation that the growth will exceed the growth of the economy in which a company sells its services is not rational or reasonable.

V.B.1. Flotation Costs

Q PLEASE DESCRIBE DR. VANDER WEIDE'S PROPOSED FLOTATION COST ADJUSTMENT.

A Dr. Vander Weide proposes a flotation cost adjustment by comparing the difference in his DCF return by making an adjustment to the stock price versus no adjustment. Dr. Vander Weide proposes to calculate the expected dividend yield by dividing the expected dividend by 95% of the average stock price, or a 5 percentage point reduction to the stock price, as a measure of flotation cost. Dr. Vander Weide observes that studies outlining flotation costs indicate that utilities generally incur a cost of 5% of the share price in issuing stock to the public. This flotation cost is in the form of direct expenses for issuing stock to the public, and pricing pressure when selling new stock.

Dr. Vander Weide estimates this 5% flotation cost by reviewing academic studies of flotation cost for utility companies, and reviewing actual issuances of other companies.[42]

Q IS DR. VANDER WEIDE'S FLOTATION COST ADJUSTMENT TO GULF POWER'S RETURN ON EQUITY REASONABLE?

A No. I do not dispute that flotation costs would be appropriate if it was based on Gulf Power's actual cost of issuing stock to the public. However, Dr. Vander Weide's flotation cost is not based on known and measurable costs for Gulf Power, because it is not based on Gulf Power's actual costs. Instead, Dr. Vander Weide's flotation cost adjustment reflects economic studies of other utility companies that have actually sold stock to the public. In his proposed flotation cost adjustment, Dr. Vander Weide failed to recognize that Gulf Power does not incur costs associated with selling stock to the public. Including a public flotation cost adjustment to a fair return on equity will produce an excessive rate of return to Gulf Power unless the adjustment is shown to be reasonably compensatory for actual flotation cost expenses. Dr. Vander Weide's proposed adjustment, again, is not based on this important balanced consideration in determining a fair return on equity for Gulf Power.

[42]Vander Weide Direct Testimony at 26-27 and Appendix 3.

Q IS IT REASONABLE TO ASSUME, AS DR. VANDER WEIDE HAS, THAT GULF POWER HAS ACTUALLY INCURRED FLOTATION COSTS?

A No. Gulf Power would only incur flotation costs if it has sold stock to the public, for the purpose of using the proceeds to invest in Gulf Power infrastructure. Gulf Power stock is not market traded. Rather, it is held by its publicly traded parent company, Southern Company. Gulf Power's common equity capital is produced from several sources including retained earnings, and equity contributions from its parent company. Gulf Power's retained earnings do not cause Gulf Power to incur a stock issuance (flotation) cost. Gulf Power's parent company equity contributions can be funded from many sources. If its parent company makes equity contributions with internal funds, or issues debt capital to fund equity contributions in the utility, then the parent company would not incur a stock issuance flotation cost, in making equity investments in Gulf Power.

Only in the event where stock is sold to the public by the parent company, and the parent company allocates all or a portion of the stock sale costs to the utility, would there be a flotation cost incurred by Gulf Power.

Q IN THE EVENT A PARENT COMPANY DID ISSUE STOCK TO THE PUBLIC AND DID INCUR FLOTATION COSTS, WOULD SUCH EXPENSES BE VERIFIABLE AND AUDITABLE BY THE UTILITY?

A Yes. If a parent company issued stock to the public to make equity contributions to the utility company, and the affiliate interest agreement with the parent company allows for transferring these stock costs to the utility, then the actual flotation cost could be audited by the Board, determined to be legitimate and reasonable, and then could be included in the utility's cost of service. Unfortunately, Dr. Vander Weide has not provided any proof of any actual flotation cost incurred by Gulf Power, or properly allocated to Gulf Power by its parent company. Therefore, this cost should not be included in its cost of service, because it is not known and measurable.

Q HOW WOULD DR. VANDER WEIDE'S DCF MODEL BE CHANGED IF IT IS CORRECTED TO REMOVE THE UNJUSTIFIED FLOTATION COST ADJUSTMENT, AND QUARTERLY COMPOUNDING ASSUMPTION?

A As shown on my attached Exhibit MPG-20, Dr. Vander Weide's DCF study for Gulf Power would be reduced down to a proxy group average of 9.53%, and proxy group median of 9.51%.

V.C. Vander Weide Ex Ante Risk Premium

Q PLEASE DESCRIBE DR. VANDER WEIDE'S EX ANTE RISK PREMIUM METHODOLOGY.

A Dr. Vander Weide estimated a DCF return on a proxy group of electric companies relative to the utility bond yield with a rating of "A." He performed this analysis for a period from September 1999 through March 2016. Dr. Vander Weide then performs a regression analysis to develop his risk premium estimate of 4.7% for this historical period based on prospective DCF return estimates relative to bond yields. (Appendix 4, pages 2-3)

To this estimated market risk premium of 4.7%, he added a projected "A" rated utility bond yield of 6.2%. He then concluded that this produced a return on common equity of 10.9%. (Vander Weide Direct Testimony at Appendix 4, page 3).

Q HOW DID DR. VANDER WEIDE PROJECT AN "A" UTILITY BOND YIELD?

A Dr. Vander Weide projects 6.2% using two methods. First, he uses the *Value Line* projected AAA corporate bond yield of 5.6% and the average yield spread between an A utility bond yield and an AAA corporate bond yield of 34 basis points. This produces an A utility bond yield projection of 5.94%.

Second, Dr. Vander Weide considered the Energy Information Administration ("EIA") forecast of an AA rated utility bond yield of 6.21%. Then he adds a spread between AA bond yields and A utility bond yields of approximately 23 basis points. He adds this projected AA to A utility bond yield spread of 23 basis points to the projected AA utility bond yield of 6.21% to derive a projected A-rated utility bond yield of 6.44%.

His recommended projected A utility bond yield is the average of these two projections, 6.19% ((5.94% + 6.44%)/2), rounded to 6.20%.[43]

Q PLEASE DESCRIBE THE ISSUES YOU HAVE WITH DR. VANDER WEIDE'S EX ANTE RISK PREMIUM ANALYSIS.

A I believe Dr. Vander Weide's estimated market risk premium from his ex ante risk premium study represents an unreasonable risk premium return estimate.

Dr. Vander Weide's projected "A"-rated utility bond yield of 6.2% is more than 220 basis points above current observable "A"-rated utility bond yields of approximately 4% over the 13-week period ending December 16, 2016. (Exhibit MPG-16). Indeed, it is approximately 185 basis points higher than the highest "A"-rated utility bond yield perceived in that 13-week period. More importantly, Dr. Vander Weide's projection of an "A"-rated utility bond yield has not been shown to be

[43]Direct Testimony at 37.

reasonably consistent with any market participant's outlook on the cost of utility capital during the period rates determined in this proceeding will be in effect. As such, Dr. Vander Weide's utility bond yield projection overstates current observable utility bond yields, has no basis, and has been shown to have no relationship to market participants' outlook over the next two to three years. Rather, the *Value Line* projection and the Energy Information Administration ("EIA") projections used by Dr. Vander Weide reflect projected outlooks for capital market costs that are many years out into the future, ranging 10 years in the future. These projected interest rates do not reflect consensus investor information for the current market, and do not reflect outlooks for capital costs applicable to the period rates determined in this case are likely to be in effect.

Q WOULD IT BE APPROPRIATE TO RELY ON LONG-TERM PROJECTED INTEREST RATES IN FORMING A FAIR RETURN ON EQUITY FOR GULF POWER IN THIS PROCEEDING?

A No. Forecasted interest rates have proven to be highly unreliable. Hence, current observable interest rates are just as reliable an estimate of future interest rates as are economists' projections. Exhibit MPG-21 illustrates this point. On this exhibit, under Columns 1 and 2, I show the actual market yield at the time a projection is made for Treasury bond yields two years in the future. In Column 1, I show the actual Treasury yield and, in Column 2, I show the projected yield two years out.

As shown in Columns 1 and 2, over the last several years, Treasury yields were projected to increase relative to the actual Treasury yields at the time of the projection. In Column 4, I show what the Treasury yield actually turned out to be two years after the forecast. Under Column 5, I show the actual yield change at the time of the projections relative to the projected yield change.

As shown in this exhibit, over the last several years, economists consistently have been projecting that interest rates will increase. However, as demonstrated under Column 5, those yield projections have turned out to be overstated in virtually every case. Indeed, actual Treasury yields have decreased or remained flat over the last five years, rather than increase as the economists' projections indicated. As such, current observable interest rates are just as likely to predict future interest rates as are economists' projections.

Q CAN DR. VANDER WEIDE'S EX ANTE RISK PREMIUM STUDY BE REVISED TO PRODUCE A MORE REASONABLE ESTIMATE OF GULF POWER'S CURRENT COST OF COMMON EQUITY?

A Yes. Applying his equity risk premium estimate of 4.70% to the current 13-week observable "A" rated utility bond yield[44] of 3.98% and "Baa" rated utility bond yield of 4.55% produces a return on equity in the range of 8.68% to 9.25% for Gulf Power.

V.D. Vander Weide Ex Post Risk Premium

Q PLEASE DESCRIBE DR. VANDER WEIDE'S EX POST RISK PREMIUM METHODOLOGY.

A In Dr. Vander Weide's ex post risk premium methodology, he made two comparisons of the historical realized return on a stock index relative to estimated annual return for an "A" rated utility bond. His first risk premium study compared the total annual realized return on the S&P 500 versus the annual return on an A-rated utility bond

[44]Exhibit MPG-16.

index over the period 1937-2015. This produced a realized annual arithmetic average risk premium of 4.5%.[45] Second, Dr. Vander Weide compared the actual achieved annual return on an S&P utility stock index versus the annual total return on an A-rated utility bond. This produced an arithmetic average annual equity risk premium of 3.9% over the period 1937-2001.[46]

Based on this analysis, Dr. Vander Weide estimates an equity risk premium in the range of 4.5% (based on S&P 500) to 3.9% (based on utility yields). He then applies this estimated equity risk premium to his projected "A" rated utility bond yield of 6.2% to produce an estimated equity risk premium in the range of 10.7% to 10.1% with a midpoint of 10.4%. (Vander Weide Direct Testimony at 35). He then adds 20 basis points for flotation costs, resulting in a midpoint estimate of 10.6%.

Q DO YOU BELIEVE THAT DR. VANDER WEIDE'S EX POST RISK PREMIUM RECOMMENDATION IS REASONABLE?

A No, I reject it for several reasons. First, as discussed earlier, his projected "A" rated utility bond yield of 6.2% substantially exceeds current observable utility bond yields of 3.98%.

Second, Dr. Vander Weide's development of an equity risk premium based on the S&P 500 does not reasonably reflect the risk return relationships for Gulf Power's common equity securities. Therefore, this is simply not a reasonable methodology to estimate a fair return on equity for Gulf Power.

[45]JHV-1, Schedule 3-1 and Schedule 3-2.
[46]JHV-1, Schedule 4.

Q HOW WOULD DR. VANDER WEIDE'S EX POST RISK PREMIUM MODEL CHANGE IF CURRENT OBSERVABLE AND VERIFIABLE "A" RATED UTILITY BOND YIELDS ARE USED IN THAT MODEL?

A Using a current observable A-rated utility bond yield of 3.98%, and an equity risk premium in the range of 3.9% to 4.5%, produces a return on equity in the range of 7.88% to 8.53%. The midpoint of this range is 8.21%. Similarly, using a current observable Baa-rated utility bond yield of 4.55%, and an equity risk premium in the range of 3.9% to 4.5% produces a return on equity in the range of 8.45% to 9.05%. The midpoint of this range is 8.75%.

For the reasons outlined above, I reject Dr. Vander Weide's flotation cost adjustment for Gulf Power because he has not shown this as a legitimate cost of service item for Gulf Power, and therefore represents an adjustment which is not known and measurable.

V.E. Vander Weide CAPM

Q PLEASE DESCRIBE DR. VANDER WEIDE'S CAPM STUDIES.

A Dr. Vander Weide performed a historical CAPM study based on a market risk premium of 6.9%, a risk-free rate of 4.2%, and beta estimate of 0.75. This study produced a return on equity estimate of 9.38%, to which Dr. Vander Weide adds a 0.20% flotation adder to get to 9.6%. (Vander Weide Direct Testimony at 45).

However, Dr. Vander Weide states that this method understates the cost of equity by comparing the realized S&P utility index risk premium of 5.34% to that of the S&P 500 index risk premium of 5.92%. The realized S&P Utility risk premium is approximately 90%, or 0.90, of the S&P 500 risk premium. Dr. Vander Weide asserts that the average utility beta of 0.75 would understate the cost of equity compared to the 0.90 realized difference in risk premiums. Based on this analysis, Dr. Vander Weide proposes to use a beta estimate of 0.90 with his 4.2% risk-free rate and 6.9% market risk premium. This produces a return on equity estimate of 10.4. He then adds his flotation cost adjustment of 20 basis points to produce an adjusted estimate of 10.6%. The average of these two methods for his historical CAPM is 10.1% ((9.6% + 10.6%) ÷ 2 = 10.1%).

Dr. Vander Weide also performed a DCF-based CAPM study, where he estimated the market risk premium using a DCF return on the S&P 500. Based on that study, Dr. Vander Weide estimated a market risk premium of 7.7% (Schedule 9). Using this market risk premium, his risk-free rate of 4.2%, and beta estimate of 0.75, produced a CAPM return estimate of 9.98% increased to approximately 10.2% for a 20 basis point flotation cost adder. (Vander Weide Direct Testimony at 50).

Again, Dr. Vander Weide observed that the measured beta may not accurately represent the utility's betas going forward. As such, based on a relationship between the historical return on the market and historical return on the S&P Utility Stock Index, he adjusted the *Value Line* beta of 0.75 up to 0.90. Using this alternative beta, a risk-free rate of 4.2%, a market risk premium of 7.7%, and a 20 basis point flotation cost adder, he estimates a current market cost of equity of 11.4%. The average of these two methods for his DCF-based CAPM is 10.8% ((10.2% + 11.4%) ÷ 2 = 10.8%).

Dr. Vander Weide then concludes that his CAPM analyses indicate a return in the range of 10.1% to 10.8%.[47]

[47]Vander Weide Direct at 49-50.

Q DO YOU HAVE ANY CONCERNS WITH DR. VANDER WEIDE'S HISTORICAL CAPM RETURN ESTIMATE?

A Yes. His CAPM return estimate of 9.6% based on a *Value Line* measured beta is overstated because of his inclusion of a flotation cost allowance of 20 basis points. That return produces a CAPM return estimate of 9.40% excluding his flotation cost adder. Dr. Vander Weide has not justified Gulf Power's actual cost of issuing stock to the public, and therefore his flotation cost adjustment is not known and measurable and should be excluded from his cost study.

Second, his historical CAPM return estimate based on an adjustment to the *Value Line* beta is inappropriate and should be rejected. Dr. Vander Weide's proposal to increase the observable *Value Line* beta of 0.75 for his proxy group up to 0.90 reflects an adjustment to a *Value Line* beta that has already been adjusted for long-term tendencies of a security to move toward the market beta of 1. Dr. Vander Weide's proposal for an adjustment on top of an adjustment is inappropriate.

Specifically, *Value Line* already adjusts a raw beta estimate for a long-term tendency to converge toward a market beta of 1. *Value Line*'s beta adjustment process will increase a raw beta estimate of less than 1 up toward 1 based on this long-term tendency. *Value Line*'s adjustment will also decrease beta estimates for industries with raw beta estimates above 1, for the long-term tendency to converge on the market beta of 1. Dr. Vander Weide's proposal to adjust a *Value Line* adjusted beta has no academic support, no sound theoretical basis, and accomplishes nothing but to inflate a reasonable estimate of Gulf Power's current market cost of equity.

Q HOW DID DR. VANDER WEIDE DERIVE HIS RISK-FREE RATE OF 4.20%?

A He derived a forecasted yield of a Treasury bond rate based on data he gathered from *Value Line*, EIA and other sources. Specifically, he relies on a *Value Line* forecast of 10-year Treasury note of 3.5% and adds a spread of 40 basis points to produce his estimated forecasted yield on a long-term Treasury bond of around 3.90%.

He uses an EIA forecasted 10-year Treasury bond yield of 4.1%, and adds the 40 basis point spread to produce a forecasted long-term Treasury bond yield of 4.50%.

His point estimate of 4.20% is the midpoint of his forecast using these *Value Line* and EIA projected 10-year Treasury bond yields (3.90% to 4.50%).

Q IS DR. VANDER WEIDE'S PROJECTION OF A RISK-FREE RATE REASONABLE?

A No. He has not shown that his projected Treasury bond yields reflect current capital market participants' outlooks, and therefore are not a general assessment of independent market analysts' assessment of Gulf Power's market cost of capital. A more balanced methodology would be to use *The Blue Chip Financial Forecasts*' consensus economists' projected Treasury bond rates. This is a source I used as an independent assessment of what market participants believe Treasury bond rates will be two years out. Based on that assessment, a Treasury bond rate of 3.4% is appropriate.

Q HOW WOULD DR. VANDER WEIDE'S CAPM STUDIES CHANGE IF *THE BLUE CHIP FINANCIAL FORECASTS*' PROJECTED TREASURY BOND RATE OF 3.4% WAS USED, AND THE *VALUE LINE* PROXY GROUP BETA IS NOT ADJUSTED?

A Using a risk-free rate projection of 3.4%, a beta estimate of 0.75, and market risk premium of 6.9% indicates a CAPM return estimate of 8.6%. If his DCF-based market risk premium estimate of 7.7% is used to reflect the low level of Treasury bond yields reflecting the market's premiums paid for low-risk securities, the CAPM return estimate would be 9.2%. Hence, this reasonable estimate of a CAPM return estimate would indicate a return in the range of 8.6% to 9.2%.

Q DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A Yes, it does.

BEFORE THE

FLORIDA PUBLIC SERVICE COMMISSION

IN RE: PETITION FOR RATE INCREASE BY GULF POWER COMPANY	**DOCKET NO. 160186-EI**
IN RE: PETITION FOR APPROVAL OF 2016 DEPRECIATION AND DISMANTLEMENT STUDIES, APPROVAL OF PROPOSED DEPRECIATION RATES AND ANNUAL DISMANTLEMENT ACCRUALS AND PLANT SMITH UNITS 1 AND 2 REGULATORY ASSET AMORTIZATION, BY GULF POWER COMPANY	**DOCKET NO. 160170-EI**

Direct Testimony of Brian C. Andrews

I. INTRODUCTION AND SUMMARY

Q PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A Brian C. Andrews. My business address is 16690 Swingley Ridge Road, Suite 140, Chesterfield, MO 63017.

Q WHAT IS YOUR OCCUPATION?

A I am a Consultant in the field of public utility regulation with Brubaker & Associates, Inc., energy, economic and regulatory consultants.

Q PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND EXPERIENCE.

A This information is included in Appendix A to my testimony.

Q ON WHOSE BEHALF ARE YOU APPEARING IN THIS PROCEEDING?

A I am testifying on behalf of the Federal Executive Agencies ("FEA"), consisting of certain agencies of the United States government, which have offices, facilities, and/or installations in the service area of Gulf Power Company ("Gulf" or "Company"), from whom they purchase electricity and energy services.

Q WHAT IS THE SUBJECT MATTER OF YOUR DIRECT TESTIMONY?

A My testimony will address and propose changes to Gulf's proposed depreciation rates for certain transmission, distribution, general and transportation plant ("TD&G") accounts. I also present a TD&G depreciation study as my Exhibit BCA-1.

My silence in regard to any issue should not be construed as an endorsement of Gulf's position.

Q HAVE YOU FILED TESTIMONY BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION ("COMMISSION") REGARDING DEPRECIATION ISSUES?

A Yes. I filed direct and rebuttal testimony in the Florida Power & Light Company rate case (Docket No. 160021-EI) in 2016. In addition, I have filed depreciation related testimony in Arizona, Indiana, New Mexico, and Oklahoma. Additionally, I have provided support to my colleagues Mr. Michael P. Gorman and James T. Selecky for their depreciation related testimonies filed in Arkansas, Louisiana, Michigan and Alberta.

Q PLEASE SUMMARIZE YOUR CONCLUSIONS AND RECOMMENDATIONS.

A My conclusions and recommendations are summarized as follows:

1. Gulf has overstated its depreciation rates for several of its TD&G accounts. These rates produce an excessive amount of depreciation expense and overstate the test year revenue requirement.

2. The adjustments I am proposing provide the Commission with an opportunity to provide rate relief to Gulf's customers, while allowing Gulf to depreciate its assets under reasonable rates.

3. My adjustments result in the 2016 depreciation expense being reduced by $1.5 million relative to Gulf's proposal.

II. BOOK DEPRECIATION CONCEPTS

Q PLEASE EXPLAIN THE PURPOSE OF BOOK DEPRECIATION ACCOUNTING.

A Book depreciation is the recognition in a utility's income statement of the consumption or use of assets to provide utility service. Book depreciation is recorded as an expense and is included in the ratemaking formula to calculate the utility's overall revenue requirement.

Book depreciation provides for the recovery of the original cost of the utility's assets that are currently providing service. Book depreciation expense is not intended to provide for replacement of the current assets, but provides for capital recovery or return of current investment. Generally, this capital recovery occurs over the average service life of the investment or assets. As a result, it is critical that appropriate average service lives be used to develop the depreciation rates so no generation of ratepayers is disadvantaged.

In addition to capital recovery, depreciation rates also contain a provision for net salvage. Net salvage is simply the scrap or reused value less the removal cost of the asset being depreciated. Accordingly, a utility will also recover the net salvage costs over the useful life of the asset.

Q ARE THERE ANY DEFINITIONS OF DEPRECIATION ACCOUNTING THAT ARE UTILIZED FOR RATEMAKING PURPOSES?

A Yes. One of the most quoted definitions of depreciation accounting is the one contained in the Code of Federal Regulations:

> "Depreciation, as applied to depreciable electric plant, means the loss in service value not restored by current maintenance, incurred in connection with the consumption of prospective retirement of electric plant in the course of service from causes which are known to be in current operation and against which the utility is not protected by insurance. Among the causes to be given consideration are wear and tear, decay, action of the elements, inadequacy, obsolescence, changes in the art, changes in demand and requirements of public authorities."
>
> (Electronic Code of Federal Regulations, Title 18, Chapter 1, Subchapter C, Part 101)

Effectively, depreciation accounting provides for the recovery of the original cost of an asset, adjusted for net salvage, over its useful life.

Q WHAT METHOD, PROCEDURE AND TECHNIQUE WERE USED TO CALCULATE THE PROPOSED DEPRECIATION RATES FOR GULF?

A The proposed depreciation rates were calculated using the straight line method, the average life group procedure and the remaining life technique. Under this method, procedure and technique of developing depreciation rates, the unrecovered cost of plant in service is adjusted for the cost of net salvage, and is recovered over the remaining life of the asset or group of assets. At the end of the useful life, the asset is fully depreciated.

Q IS YOUR METHOD OF CALCULATING DEPRECIATION RATES DIFFERENT THAN THE COMPANY'S?

A No, both the Company and I utilized the same method to calculate depreciation rates. Gulf witness Dane Watson discusses the depreciation calculation process in his pre-filed direct testimony and the depreciation study filed as Direct Exhibit DAW-1.

Q PLEASE DESCRIBE THE ACTUARIAL LIFE ANALYSIS THAT IS PERFORMED TO EVALUATE HISTORICAL ASSET RETIREMENT EXPERIENCE.

A I will first provide the description of actuarial life analysis (retirement rate method) that is contained in the National Association of Regulatory Utility Commissioners' ("NARUC") Public Utility Depreciation Practices manual.

> "Actuarial analysis is the process of using statistics and probability to describe the retirement history of property. The process may be used as a basis for estimating the probable future life characteristics of a group of property.
>
> Actuarial analysis requires information in greater detail than do other life analysis models (e.g., turnover, simulation) and, as a result, may be impractical to implement for certain accounts (see Chapter VII). However, for accounts for which application of actuarial analysis is practical; it is a powerful analytical tool and, therefore, is generally considered the preferred approach.
>
> Actuarial analysis objectively measures how the company has retired its investment. The analyst must then judge whether this historical view depicts the future life of the property in service. The analyst takes into consideration various factors, such as changes in technology, services provided, or, capital budgets."
>
> (NARUC Public Utility Depreciation Practices Manual, 1996, Page 111, Emphasis Added).

As explained by NARUC, when the required data exists, a database that contains the year of installation and the year of retirements for each vintage of property, actuarial life analysis is the preferred method of determining the life, and thus retirement, characteristics of a group of property. In this type of analysis, there are two major steps. The first step is to use available aged data from the company's continuing plant records to create an observed life table. The observed life table provides the percent surviving for each age interval of property. The observed life tables can be created from multiple combinations of placements and experience of the aged property data. It is important to select a combination of data that will best reflect future lives of the property. The second step is to match the actual survivor data from the observed life table to a standard set of mortality, or survivor curves. Typically, the observed life table data is matched to Iowa Curves. The fitting process is both a mathematical fitting process, which would minimize the Sum of Squared Differences ("SSD") between the actual data and the Iowa Curves, and a visual fitting process. Though the mathematically fitting process provides a curve that is theoretically possible, the visual matching process will allow the trained depreciation professional to use informed judgment in the determination of the best fitting survivor curve.

Q PLEASE PROVIDE FURTHER EXPLANATION OF THE SUM OF SQUARED DIFFERENCES STATISTICAL MEASUREMENT.

A In the Actuarial Life Analysis section of the NARUC Depreciation Manual, it describes SSD as follows:

> "Generally, the goodness of fit criterion is the least sum of squared deviations. The difference between the observed and projected data is calculated for each data point in the observed data. This difference is squared, and the resulting amounts are summed to provide a single statistic that represents the quality of the fit between the observed and projected curves.
>
> The difference between the observed and projected data points is squared for two reasons: (1) the importance of large differences is increased, and (2) the result is a positive number, hence the squared

> differences can be summed to generate a measure of the total absolute difference between the two curves. The curves with the least sum of squared deviations are considered the best fits."

Q PLEASE DESCRIBE THE SIMULATED PLANT RECORD PROCEDURE.

A NARUC, in its Depreciation Practices Manual describes the Simulated Plant Record ("SPR") as follows:

> "The Simulated Plant Record (SPR) method is used by utilities and commissions to indicate generalized survivor curves that best represent the life characteristics of property when the property records do not contain the age of the property upon retirement. The selection of curves is based upon the closeness of the match between actual and simulated annual amounts.
>
> The closeness of the match between annual amounts is measured by the Conformance Index (CI) or its reciprocal, the Index of Variation (IV). These measures are based upon the sum of squared differences between simulated and actual annual amounts. The highest ranked curves are those with the highest CIs (or lowest IVs).
>
> The maturity of the account is measured by the Retirement Experience Index (REI). The higher the REI, the more assurance that a unique retirement pattern was used in the simulation. In 1947, Bauhan proposed a scale to rank the REI and the CI from poor to excellent.
>
> The amounts that are compared may be balances or retirements depending upon which model is used: SPR Balances, SPR Period Retirements, or SPR Cumulative Retirements."
>
> (NARUC Public Utility Deprecation Practices Manual, 1996, Page 92).

The SPR method is a commonly used practice when the proper aged vintage data is not available to analyze. The method used by Gulf in this proceeding is the SPR Balances model, which applies the survivor factors from a predetermined Iowa Curve and average service life to the actual annual additions of a property account, which produces an estimation of the year end balances. Goodness of fit statistics are calculated to determine which curves produce the best match. These goodness of fit statistics are the Conformance Index ("CI") and the Retirement Experience Index ("REI"). A good fit in both of these measurements are those that are above 50, over 75 is considered excellent. A CI under 25 is considered a poor fit. In a discussion of the interpretation of the results of the SPR balance Model, the NARUC manual states,

> "Bauhan states that the CI should be "good" or better (i.e. at least 50) in order for a life determination to be entirely satisfactory. It is not uncommon, however, for the model to produce results with low CIs for all curves over several test periods. A low CI indicates either that the account has no stable life and dispersion pattern or that the actual mortality dispersion is so unusual that it is not included in the generalized patterns that were used to simulate the data. In either case, Bauhan cautions that one should be forewarned in using the results."
>
> (NARUC Public Utility Depreciation Practices Manual, 1996, page 99)

Q PLEASE EXPLAIN SURVIVOR CURVES AND THE NOTATION USED TO REFERENCE THEM.

A A survivor curve is a visual representation of the amount of property existing at each age interval throughout the life of a group of property. From the survivor curve, parameters required to calculate depreciation rates can be determined, such as the average service life of the group of property and the composite remaining life. In this case, as well as the majority of others throughout the U.S. and Canada, the Iowa Curves are the general survivor curves utilized to describe the mortality characteristics of group property. There are four types of Iowa Curves: right-moded, left-moded, symmetrical-moded, and origin-moded. Each type describes where the greatest frequency of retirements occur relative to the average service life. Mr. Watson provides a more detailed explanation of Iowa Curves on pages 13-16 of his Direct Exhibit DAW-1.

A survivor curve consists of an average service life and Iowa Curve type combination. When describing property with a 50-year average service life that has mortality characteristics of the R2 Iowa Curve, the survivor curve would simply be notated as "50-R2."

III. GULF DEPRECIATION STUDY

Q IN GULF'S DEPRECATION STUDY, DID MR. WATSON USE THE SPR PROCEDURE OR CONDUCT AN ACTUARIAL LIFE ANALYSIS ON THE PROPERTY RECORDS IN THE TRANSMISSION, DISTRIBUTION, GENERAL AND TRANSPORTATION ("TD&G") PLANT ACCOUNTS?

A Mr. Watson conducted actuarial life analysis when the aged data were available. The required data needed for this analysis was available for all transmission accounts, 361 and 362 of the distribution accounts, and all of the depreciable general and transportation plant accounts. Gulf does not maintain aged plant records for accounts 364, 365, 366, 367, 368, 369, 370, and 373. For these distribution accounts, the life analysis was conducted using the SPR procedure.

Q WHAT IS THE IMPACT ON DEPRECIATION EXPENSE FOR THE TD&G ACCOUNTS DUE TO THE GULF DEPRECIATION STUDY?

A I have summarized the impact below in Table 1. The values shown below are sourced from Appendix B of Exhibit DAW-1.

TABLE 1

Comparison of Annual Accrual

Plant Type	Existing	Gulf Proposed	Difference	Percent
Transmission	$19,109,058	$22,808,435	$3,699,377	19%
Distribution	$44,976,653	$44,835,531	($141,122)	0%
General	$3,526,782	$3,267,406	($259,376)	-7%
Transportation	$2,703,991	$3,582,202	$878,210	32%
Total	**$70,316,485**	**$74,493,574**	**$4,177,089**	**6%**

As is shown in Table 1, Gulf is proposing to increase the depreciation expense for the TD&G accounts by $4.2 million, or 6% over what is currently approved under the existing depreciation rates.

IV. BCA TD&G DEPRECIATION STUDY

Q PLEASE DESCRIBE YOUR TD&G DEPRECIATION STUDY.

A My Exhibit BCA-1 contains the BCA TD&G Depreciation Study. I have studied all TD&G accounts. This study was conducted by performing an actuarial life analysis (retirement rate method) on Gulf's property data when it was available. This is the NARUC preferred method of utility property life analysis and is the same method used by Mr. Watson on behalf of Gulf. For the distribution accounts that Mr. Watson studied with the SPR analysis, I am proposing only a single adjustment (Account 364), which is based on my informed judgment. I am recommending increasing the lives of nine of the 28 accounts studied. This results in a $1.5 million reduction to the 2016 depreciation expense, which is shown on page 4 of my Exhibit BCA-1.

Q PLEASE PROVIDE ADDITIONAL DETAIL ON THE PROCESS USED FOR YOUR DEPRECIATION STUDY, SPECIFICALLY THE ACCOUNTS ANALYZED USING ACTUARIAL ANALYSIS.

A The first step in my analysis was a thorough review of the Gulf deprecation study and of Mr. Watson's workpapers which were provided in response to FEA's First POD. I conducted my own actuarial analysis based on the observed life tables created by Mr. Watson for his actuarial analysis. I utilized a depreciation model to determine the Iowa Curve and average service life that best fit the significant points of the observed life tables created by Mr. Watson. I then used a statistical and visual analysis to select an Iowa Curve and average service life combination that results in a better statistical fit (lower SSD) than the survivor curves being recommended by Mr. Watson.

In my Exhibit BCA-1, for each account studied by actuarial analysis, I present four sections of information. The first section contains a description of the plant account per the FERC uniform system of accounts. The second section contains the results of the fitting analysis. This chart shows for each Iowa Curve type, the average service life that minimizes the SSD. Additionally, the table contains the SSDs of the Gulf and BCA proposals. For each account to which an adjustment is proposed, the BCA proposal has a lower SSD, which indicates a better statistical fit.

The next section contains a graph that shows the actual Gulf retirement data (blue triangles), the Gulf proposed curve (green dashed line), the BCA proposed curve (purple dotted line), and the best fit curve (orange dash-dotted line). The best fit curve shown on the graph is the curve determined by the statistical fitting analysis to have the lowest SSD.

The last section for each account shows the calculation of the annual accrual, depreciation rate, and composite remaining life. This procedure is the same performed by Mr. Watson in his depreciation study.

Q DID YOU PERFORM A BENCHMARKING EXERCISE TO VALIDATE THE RESULTS OF BOTH THE BCA DEPRECIATION MODEL AND MR. WATSON'S CALCULATIONS?

A Yes. For all TD&G Accounts, I calculated the annual accrual, theoretical reserve, and composite remaining life using the survivor curves and net salvage rates that Mr. Watson has proposed. These results are shown on pages 72-73 of Exhibit BCA-1. The difference in annual accrual for the TD&G accounts is only $3,517 or 0.00% of the approximately $74.3 million of annual accrual for these accounts.

Q DID YOU FIND ANY ERRORS WITH MR. WATSON'S CALCULATIONS DURING YOUR BENCHMARKING EXERCISE?

A Yes. It appears that in the calculation of depreciation parameters for Account 390, Mr. Watson mistakenly utilized the wrong survivor curve. The Gulf depreciation study shows the recommendation for this account is the 46-R1.5 Iowa Curve. Inspection of Mr. Watson's workpaper titled "Gulf Power TDG Adj Smith Reg Asset.xlsx" shows that he actually used the 45-R1.5 survivor curve for his calculations. This error results in the annual depreciation expense for this account being overstated by approximately $56 thousand.

Q WHAT CAN YOU CONCLUDE ABOUT THE RESULTS OF YOUR BENCHMARKING EXERCISE?

A The results show that the BCA Depreciation Model can calculate the depreciation parameters for Gulf's accounts with the same accuracy as the model utilized by Mr. Watson. The BCA Depreciation Model can therefore be utilized to calculate depreciation parameters with differing survivor curves and the results will be accurate.

Q WHEN YOU PERFORMED YOUR FITTING ANALYSIS, WHICH SET OF DATA DID YOU UTILIZE AND WHY.

A For each account that was studied using actuarial analysis, I performed my fitting analysis using the original life tables that were created by Mr. Watson that captured property for all surviving vintages, i.e. the full placement band, and the most recent experience band. I chose the combination of the full placement band and the most recent experience band for two reasons, first, it captures the retirement experience from all of Gulf's surviving property, and second, it is the more recent experience that will better signal the future retirement behavior of Gulf's property. Wolf and Fitch's "Depreciation Systems," states:

> "Recent experience bands yield the most recent retirement ratios providing the forecaster with valuable information about the current retirement ratios for all ages."

These recent retirement ratios will provide a much better indication of the retirement behavior of property in the near future, than will reliance on much older retirement history. While Mr. Watson studied several different combinations of placement bands and experience bands, the results presented in his study generally have experience bands that capture retirement experience that is no longer be relevant.

For example, Account 353, the largest plant account studied using actuarial analysis, has a recommended survivor curve based on a retirement history that begins in 1972. This account has a total plant balance of $250 million, however, $229 million or 92% of this property was installed after 1990. Therefore, maintenance and operational practices, as well as retirement experience, that occurred between 1972 and 1990 has very little relevance to the property that is currently in service and it is inappropriate to allow that outdated retirement experience to influence service life estimation of Gulf's property.

Q DO THE SURVIVOR CURVES THAT YOU ARE RECOMMENDING ADJUSTMENTS TO PRODUCE A BETTER FIT TO GULF'S DATA THAN THOSE BEING RECOMMENDED BY MR. WATSON?

A Yes. Eight of my nine proposed adjustments are based on my actuarial life analysis. For each of those eight accounts to which I am proposing a survivor curve that differs from Mr. Watson' recommendation, the SSD is lower. That is, all of my recommendations result in survivor curves that mathematically and statistically fit Gulf's data better than those recommended by Mr. Watson. The SSDs of my recommendations compared to the recommendations of Mr. Watson are shown below in Table 2. In each case, the SSD of the BCA proposal is lower than the Gulf proposal. Again, a lower SSD indicates that the generalized survivor curve more accurately portrays the life characteristics of the property data.

TABLE 2

Goodness of Fit Statistics

Account	Gulf Proposed Curve	Gulf Proposed SSD	BCA Proposed Curve	BCA Proposed SSD
353	40-S0	1,324	40-L0.5	259
354	55-R4	696	56-R3	552
355	40-L0.5	1,106	41-S0	247
358	50-R4	17,539	55-R5	4,104
361	50-R2.5	1,113	52-R2.5	357
390	46-R1.5	320	48-R1.5	262
396	16-R4	22,395	18-R4	16,962
397	16-L1.5	245	17-L1.5	168

Source: Exhibit BCA-1

Q WHAT ADJUSTMENT ARE YOU PROPOSING TO MAKE TO ACCOUNT 364 – POLES, TOWERS, AND FIXTURES?

A I proposed that the life of the distribution poles account be increased to 38 years rather than be decreased to 33 years as is proposed by Gulf.

Q WHY ARE YOU PROPOSING THIS ADJUSTMENT TO ACCOUNT 364?

A Account 364 is one of the distribution accounts that Gulf does not maintain the aged data necessary to perform actuarial analysis; therefore the analysis performed by Mr. Watson was the simulated plant record procedure. Based on the SPR analysis, Mr. Watson is recommending decreasing the life of this account by one year to a 33 R0.5 survivor curve. Mr. Watson on page 77 of Exhibit DAW-1 states that “the CIs were poor to fair, but the REIs were excellent.”

Upon further inspection of the results of Mr. Watson’s SPR analysis, the 33-R0.5 curve was the second ranked curve in 8 of the 9 bands studied; however all but one of these eight bands had CIs in the poor range, and only a single band scored a CI in the “fair” range, and it was at the very bottom of the range. Although the SPR analysis appears to support the life of 33 years for this account, the fitting statistics suggest that the 33-R0.5 Iowa Curve is simply a “least worst” choice. The results of Mr. Watson’s SPR analysis are included in my Exhibit BCA-2. As is discussed earlier, the CI should be at least in the “good” range (above 50) to be considered satisfactory. The CI for the 38-R1 curve is also in the poor range; however, my recommendation is based on informed judgement, not just the SPR analysis. According to SPR analysis, no Iowa Curve produces a satisfactory fit to the Account 364 data.

Mr. Watson also stated that discussions with Company personnel indicate that there are now more concrete poles that in the past. Concrete poles have a longer life that wood poles which means there are now more longer lived assets in this account. This logically would lead one to believe the average life of this account should increase, not decrease as is proposed by Gulf.

My recommendation is also more consistent with the depreciation study filed in Florida Power & Light Company’s (“FPL”) the most recent rate case, Docket No. 160021-EI. FPL maintains aged data for all of its distribution accounts, including account 364, which is separated into sub accounts for wood and concrete poles. The actuarial analysis performed in that case indicated the wood poles should have an average service life of 40 years, and the concrete poles will have an average life of 50 years. Again, the actuarial analysis is the preferred method of life analysis. While FPL and Gulf do not have the same maintenance and operation practices, their service territories are located in similar climates and their property is subject to similar forces of retirement. It is unlikely that Gulf’s distribution poles have average service lives that are shorter by seven and 17 years for wood and concrete poles than FPL.

Q WHAT IS THE IMPACT ON THE DEPRECIATION RATES FOR THE TD&G ACCOUNTS TO WHICH YOU ARE RECOMMENDING SURVIVOR CURVE CHANGES?

A For the nine TD&G accounts to which I am recommending an adjustment to the survivor curve, the resulting rates are shown below in Table 3.

TABLE 3

Recommended Depreciation Rates

Account	Gulf	BCA	Delta
353	2.90 %	2.81%	-0.09%
354	2.10%	2.00%	-0.10%
355	4.60%	4.56%	-0.04%
358	1.70%	1.47%	-0.23%
361	2.00%	1.89%	-0.11%
364	4.90%	4.30%	-0.60%
390	2.20%	2.01%	-0.19%
396	1.70%	1.37%	-0.33%
397	5.70%	5.22%	-0.58%

Source: Exhibit BCA-1

Q WHAT IS THE IMPACT TO THE ANNUAL ACCRUAL DUE TO YOUR PROPOSED ADJUSTMENTS?

A These proposed adjustments result in a decrease to the annual accrual of $1.5 million. The detail of these adjustments is shown on page 4 of my Exhibit BCA-1.

Q WHAT IS THE IMPACT TO THE THEORETICAL RESERVE AND CORRESPONDING RESERVE IMBALANCE DUE TO YOUR PROPOSED ADJUSTMENTS?

A These proposed adjustments decrease both the theoretical reserve and the reserve imbalance by $4.3 million, which yields a reserve imbalance of -$4.6 million. The account level detail is shown on page 71 of my Exhibit BCA-1. These adjustments bring the theoretical reserve closer to the book reserve as compared to Gulf's proposals.

Q DO YOU HAVE ANYTHING ELSE TO ADD?

A Yes. Depreciation expense on utility mass property accounts is one of the most subjective areas at a utility's revenue requirement. There is no single correct answer, as the rates for mass property are based on an analyst's forecast of future expectations. My proposed adjustments provide the Commission with an opportunity to offer rate relief to Gulf's customers. These depreciation parameters are supported by Gulf's retirement history data and will not harm Gulf financially.

Q PLEASE SUMMARIZE YOUR CONCLUSIONS AND RECOMMENDATIONS.

A My conclusions and recommendations are summarized as follows:

1. Gulf has overstated its depreciation rates for several of its TD&G accounts. These rates produce an excessive amount of depreciation expense and overstate the test year revenue requirement.

2. The adjustments I am proposing provide the Commission with an opportunity to provide rate relief to Gulf's customers, while allowing Gulf to depreciate its assets under reasonable rates.

3. My adjustments result in the 2016 depreciation expense being reduced by $1.5 million relative to Gulf's proposal.

Q DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A Yes, it does.

BEFORE THE

FLORIDA PUBLIC SERVICE COMMISSION

IN RE: PETITION FOR RATE INCREASE BY GULF POWER COMPANY	**DOCKET NO. 160186-EI**
IN RE: PETITION FOR APPROVAL OF 2016 DEPRECIATION AND DISMANTLEMENT STUDIES, APPROVAL OF PROPOSED DEPRECIATION RATES AND ANNUAL DISMANTLEMENT ACCRUALS AND PLANT SMITH UNITS 1 AND 2 REGULATORY ASSET AMORTIZATION, BY GULF POWER COMPANY	**DOCKET NO. 160170-EI**

Direct Testimony of Amanda M. Alderson

Q PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A Amanda M. Alderson. My business address is 16690 Swingley Ridge Road, Suite 140, Chesterfield, MO 63017.

Q WHAT IS YOUR OCCUPATION?

A I am a Consultant in the field of public utility regulation with the firm of Brubaker & Associates, Inc., energy, economic and regulatory consultants.

Q PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND EXPERIENCE.

A This information is included in Appendix A to this testimony.

Q ON WHOSE BEHALF ARE YOU APPEARING IN THIS PROCEEDING?

A This testimony is presented on behalf of Federal Executive Agencies ("FEA"). FEA consists of certain agencies of the United States Government which have offices, facilities, and/or installations in the service area of Gulf Power Company ("Gulf Power" or "Company") and purchase electric utility service from Gulf Power.

Q WHAT IS THE SUBJECT MATTER OF YOUR TESTIMONY?

A I will address the filed retail cost of service studies ("COSS") of Gulf Power, and the resulting spread of the required revenue increase.

My silence in regard to any issue should not be construed as an endorsement of Gulf Power's position.

I. Summary of Findings and Recommendations

Q PLEASE SUMMARIZE YOUR FINDINGS AND RECOMMENDATIONS CONCERNING THE 2015 TEST YEAR COSS.

A. My cost of service findings and recommendations are summarized as follows:

1. I find the Company's proposed production cost of service method to be inappropriate. Inclusion of an energy component in the allocation of fixed production costs does not align with cost incurrence, and the Florida Public Service Commission ("Commission") practice using the 12 coincident peak ("CP") demand and $1/13^{th}$ energy allocation method does not align with the current common methods used elsewhere in the industry.
2. Gulf Power's production planning processes, in coordination with the other electric utility subsidiaries in the Southern Company System, and its reserve margin calculations are based on peak demand in the system peak months. Any

fuel or energy related cost savings taken into account during production planning, and other considerations such as loss of load probability, are used in the development of the Southern Company System target reserve margin, but ultimately the reserve margin itself is calculated on a system peak basis. Further, Gulf Power rightfully allocates all variable production costs using an energy allocation of fuel costs and operation and maintenance ("O&M") costs. Therefore, Gulf Power's fixed production costs should be allocated on a 100% demand component method.

3. I recommend the production cost allocator used to develop the COSS in this proceeding be a 100% demand method, using either the 4 summer CP or 4 summer / 1 winter CP method. The Gulf Power system and Southern Company System load characteristics support both of these 100% demand allocators.

4. I find the underlying data used by Gulf Power to develop the retail class production cost allocators to be inconsistent with the 2015 Cost of Service Load Research Study filed by Gulf Power on June 9, 2016. For numerous rate classes, the ratio between the test year data and load research data annual consumption (energy) is considerably different from the ratio between the test year and research data monthly demand average (12 CP). The Florida Commission requirements of Minimum Filing Requirement ("MFR") E-11 instruct Gulf Power to provide justification and workpapers for its estimation methodology for test year coincident and noncoincident demands, and only scant justification is provided. These unexplained inconsistencies call into question the accuracy of the developed cost allocation factors.

5. Because of the lack of supportable data available, I recommend that the spread of the revenue increase across customer classes be adjusted to fall within a more narrow range around the system average increase. When the COSS results are considered unreliable, it is more reasonable to increase the rates for each class on a more equal basis, and in this instance I recommend no class receive greater than a 1.1x the system average increase.

II. Gulf Power's Proposed COSS

Q HAVE YOU REVIEWED THE COMPANY'S COST OF SERVICE FILING IN THIS PROCEEDING?

A Yes. I have reviewed the testimony of Gulf Power witness Mr. Michael O'Sheasy and the COSS he has presented therein. The Company has filed two versions of its COSS for the 2015 Test Year. The first version uses similar cost of service allocation methods to those the Company filed in its 2014 test year case. The second version is required by MFRs in Florida, and is the same as the first COSS except that it eliminates the use of the Minimum Distribution Study in allocation of certain distribution costs. The Company proposes designing customer rates based off the first COSS version, incorporating the Minimum Distribution Study into cost allocation.

Q PLEASE COMMENT ON THE COMPANY'S PROPOSED CONTINUED USE OF THE MINIMUM DISTRIBUTION STUDY.

A I agree with and support the Company's proposed continued use of recognizing the customer-related component in cost causation for certain distribution Federal Energy Regulatory Commission ("FERC") account asset costs through use of a Minimum

Distribution Study. I agree with Mr. O'Sheasy's excellent in-depth explanation of the necessity of using a Minimum Distribution Study. The Commission has previously approved Gulf Power's use of the Minimum Distribution Study in its 2012 test year case, and all of the other Southern Company System utilities use the Minimum Distribution Study to allocate distribution costs.[1] The study is similarly used in many other jurisdictions across the country. I recommend that the Commission approve Gulf Power's continued use of the Minimum Distribution Study in setting rates in the instant proceeding.

III. Production Cost Allocation

Q PLEASE DESCRIBE THE PRODUCTION COST ALLOCATION METHOD GULF POWER IS PROPOSING IN THIS CASE.

A Gulf Power and Florida investor-owned utilities ("IOU") generally, have historically relied upon the 12 CP and 1/13th method to allocate fixed production plant costs. This method classifies 1/13th of the fixed production costs as energy-related, and allocates those costs on energy requirements. The remaining 12/13ths are classified as demand-related and allocated to classes based on the average of the classes' 12 coincident peaks. Gulf Power is not proposing a change to this method.

I am not aware of any other jurisdiction currently using the 12 CP and 1/13th method. The more common energy-weighting method is the Average and Excess Demand ("AED") method, employed in, for example, Arizona, Colorado, Missouri, New Mexico, Texas, etc.

[1] Direct Testimony of Michael T. O'Sheasy, page 27, lines 1-14.

Q WHAT ARE YOUR CONCERNS WITH THE COMPANY'S PROPOSAL TO CONTINUE USING THIS ALLOCATION METHOD?

A Using an energy component in the allocation of fixed production costs is illogical and not tied to cost incurrence. Gulf Power plans its production system to meet its anticipated peak loads and must hold enough generation capacity to meet a 14.75% reserve margin calculated on a summer peak and winter peak demand basis.[2]

Gulf Power plans for production capacity increases considering the system coincident peak demands, and the coincident peak demands of the Southern Company System as a whole.[3] The Company has described its production planning processes and the derivation of its reserve margin metrics in testimony and data responses in this proceeding,[4] and the underlying determinative factor for whether additional capacity is necessary is whether the existing generation fleet can meet Gulf Power's summer and winter coincident peak demands. Consideration for operating characteristics in all hours of the year, or scheduled maintenance occurring during off-peak periods, is reflected in the energy allocation of the variable costs for these production assets, and in the derivation of the target reserve margin. But the reserve margin itself, and the determination of whether Gulf Power has sufficient production capacity, is determined based on system coincident peak demand.

Therefore, Gulf Power's fixed production costs should be allocated on a 100% demand allocation method, and Gulf Power's variable production costs should continue to be allocated on a variable energy method.

[2] Gulf Power's responses to FEA POD Nos. 22 and 25, discussed in further detail hereafter.
[3] Direct Testimony of Michael T. O'Sheasy, page 13, lines 15-18.
[4] I will elaborate on Gulf Power's production planning process in the next section of this testimony.

Q WHAT IS YOUR RECOMMENDATION CONCERNING ALLOCATION OF FIXED PRODUCTION COSTS?

A I recommend that a 100% demand allocation factor be used in allocating costs in the Company's COSS model in the instant proceeding. The demand factor to be used should be either a 4 summer CP or 4 summer / 1 winter CP allocation factor based on the load characteristics of the Gulf Power and Southern Company Systems.

IV. Production System Planning

Q HOW DOES GULF POWER'S PRODUCTION PLANNING IMPACT PRODUCTION COST ALLOCATION?

A A fundamental tenet of proper cost of service allocation is to align the allocation of costs with the way in which those costs are incurred by the utility. For production costs specifically, a utility must design the total amount of production capacity it holds in such a way that that capacity can meet the peak system demand of all customers. Therefore, allocating fixed production costs on an allocation method that is based on customers' contributions to the system peak demand would align cost allocation with cost incurrence.

Q HOW DOES THE COMPANY PLAN FOR ITS PRODUCTION CAPACITY ADDITIONS?

A Witness Jeffrey A. Burleson explained in his direct testimony that Gulf Power coordinates its production planning processes with the Southern Company System and the other member electric utilities:

> As a part of the coordinated planning process, each retail operating company develops its own load forecast and demand side plan. The load forecasts and demand side plans of the operating companies are aggregated and an optimal mix of new capacity additions is identified

> to meet the aggregate load of the retail operating companies. The capacity need for each future year is allocated to each operating company that is projected to have a capacity need in a given year. **The allocation of the capacity need is proportional to the amount of capacity needed to move each of the operating companies that have a capacity need in a given year to the target planning reserve margin based on each operating company's own load and existing resources.**[5]

Witness O'Sheasy writes, as well, of the 12 CP allocation method, it "recognizes the fact that Gulf's system is planned and operated for the purpose of meeting these [coincident peak] demands."[6]

Q WHAT IS A RESERVE MARGIN?

A A utility's reserve margin is the excess production capacity above expected system demand at the hours of the annual peaks of the system. A planning reserve margin target is used by system planners to ensure that the generating capacity is available when demands on the system are at the highest levels taking into account forecasting error and weather fluctuations, in order to greatly reduce the likelihood of brownouts or blackouts. Gulf Power's target reserve margin is 14.75%.[7]

Q HOW DOES GULF POWER CALCULATE ITS PRODUCTION CAPACITY AMOUNT IN ORDER TO MEET ITS TARGET RESERVE MARGIN?

A Gulf Power calculates its reserve margin on a single summer coincident peak and single winter coincident peak basis. Gulf Power annually files a Ten Year Site Plan ("TYSP") and coordinates its resource planning with the Southern Company System through its Integrated Resource Planning ("IRP") process. Gulf Power's 2016 TYSP was provided in response to FEA POD No. 22, and shows that Gulf Power tests its

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[5]Direct Testimony of Jeffrey A. Burleson at pages 6-7, emphasis added.
[6]Direct Testimony of Michael T. O'Sheasy, page 13, lines 16-17.
[7]Gulf Power's response to FEA POD No. 25.

reserve margin requirements on both its projected one summer and one winter peaks.[8]

FEA requested a copy of the most recent Southern Company System IRP, but was provided only a summary of the IRP planned resource additions, and estimated annual reserve margins for the forecast period. This summary, found in Gulf Power's response to FEA POD No. 21, lists the reserve margin values at the time of the annual summer peak only, not showing the winter peak. The Southern Company System typically peaks in the summer.

Q ARE OTHER PLANNING ELEMENTS BESIDES PEAK SYSTEM DEMAND CONSIDERED IN THE PRODUCTION PLANNING PROCESS?

A Yes. The overall cost of additional production assets as well as the anticipated reliability of various asset types is considered. These metrics are an input to the derivation of the Southern Company System target reserve margin. Gulf Power's response to FEA POD No. 26 says:

> The analyses to identify the minimum long-term planning reserve margin considers [sic] uncertainties associated with unforeseen unit outages, abnormal weather, load forecast deviations, and market availability risk. . . . **The objective of this study is to find the target reserve margin where the sum of these costs (i.e., those related to reliability and those related to carrying reserves) is minimized** (i.e., the minimum cost point), adjusted to balance costs and acceptable levels of reliability risks. [emphasis added]

In other words, the development of the target reserve margin is done in an effort to minimize the probability that system production capacity will be insufficient to meet expected peak load, while also keeping the total cost of holding excess capacity reserves at a reasonable level. This exercise contemplates various factors

[8] "Gulf [will] meet its reserve margin requirements until June 2023 of the 2016 TYSP cycle," page 3 of the 2016 TYSP Executive Summary. Schedules 7.1 and 7.2 of the 2016 TYSP show reserve margin falling below the 14.75% target in 2024, calculated on the one summer and one winter system peaks.

such as weather patterns, predicted unit outages of various capacity types, market commodity costs and variability, and possible customer load forecast deviations. But these considerations are used to determine the target reserve requirement which ultimately is a formula calculated solely on the system's summer and winter peak demands.

V. Gulf Power's System Load Characteristics

Q PLEASE DESCRIBE THE GULF POWER SYSTEM LOAD CHARACTERISTICS.

A Gulf Power is generally a summer peaking utility, which is typical of utilities in the South with significant air conditioning load. A look at the historical system peaks shows that January recently has also exhibited very high demands. My Exhibit AMA-1 shows that in 2015, July was the maximum peak, but January was within 99.9% of the July peak. January was the single system peak in 2014, during the national Polar Vortex event. Exhibit AMA-1 shows the Gulf Power annual peaks over the past four years, and over the projected period from 2016 through 2017. The projected system peaks were provided by Gulf Power in its MFRs and corroborate the fact that Gulf Power expects its system to continue exhibiting a summer-only peak pattern.

Q PLEASE DESCRIBE THE SOUTHERN COMPANY SYSTEM LOAD CHARACTERISTICS.

A The Southern Company System as a whole exhibits a similar summer-peaking pattern, with the January max demands in 2010, 2014, and 2015 nearly meeting or exceeding the summer peak. Exhibit AMA-2 shows the historical Southern Company monthly peaks for 2010 through 2015. Because Gulf Power plans its production system in coordination with Southern Company, the Southern Company System characteristics should influence the determination of proper cost allocation.

Q HOW SHOULD THESE SYSTEM LOAD CHARACTERISTICS GUIDE COST ALLOCATION DECISIONS?

A Reviewing the system peaks for both Gulf Power and Southern Company allows us to understand how the utility must determine whether and how much additional production capacity is needed to serve firm load. Because four summer months of June through September, and occasionally, January, generally fall within 90% of the single system peak, Gulf Power and Southern Company must plan to meet the peaks in each of these months as they each have a high probability of exhibiting the actual peak system demand in a given year. Therefore, the demand component of the production cost allocator should be based on classes' contributions to either the 4 summer or 4 summer / 1 winter CPs.

VI. Alternative Production Cost Allocation Method

Q HAVE YOU MADE CHANGES TO THE COMPANY'S COSS TO REFLECT YOUR ALTERNATIVE PRODUCTION COST ALLOCATION METHOD RECOMMENDATION?

A Yes. My Exhibit AMA-3 provides the results of a COSS using the 4 summer CP / 1 winter CP retail cost allocation method.

Q DO YOU RECOMMEND THE COMMISSION ACCEPT THESE RESULTS IN THIS CASE?

A No. The class coincident peak data provided by Gulf Power are not reliable. Gulf Power witness Lee P. Evans claims that the 2015 Cost of Service Load Research Study, filed with the Commission on June 9, 2016, was the data used to develop the 12 CP, NCP, and energy allocation factors in the Company's COSS.[9] MFR Schedule E-11 provides the Load Research Study 12 CP, NCP, and energy for each class, and the corresponding values used in the COSS allocators. Gulf Power accounts for known and measurable changes between the 2015 Load Research data and the COSS test year, such as rate migrations for large industrial customers and known changes in loads,[10] but one would assume these load changes would similarly impact energy and demand levels, unless specifically known otherwise. A review of the data shows considerable differences between the energy and demand ratios for many classes. My Exhibit AMA-4 provides this data.

Q PLEASE DESCRIBE YOUR CONCERN WITH THE GULF POWER MFR SCHEDULE E-11 DATA.

A My Exhibit AMA-4 shows the 2015 Load Research data and the COSS Test Year data derived from the Load Research data. Gulf Power did not provide any workpapers supporting the formula by which it developed its COSS Test Year data. I have calculated the ratio difference between the Load Research data and COSS Test Year data for each metric, energy, 12 CP demand, and NCP demand, in columns C, F, and I on Exhibit AMA-4. I have highlighted a number of rate classes that show unexplained differences between the ratios for energy and demand. For

[9]Direct Testimony of Lee P. Evans, page 16, lines 18-23.
[10]MFR Schedule E-11, page 1.

example, the Large Power ("LP") class had a 2015 Load Research annual energy amount of 327,193 MWh, and Gulf Power adjusted that value up by 6% to 345,232 MWh for the COSS Test Year. But Gulf Power adjusted upward by 12% the Rate LP 2015 Load Research 12 CP demand value to determine the COSS Test Year 12 CP demand value used in the development of the 12 CP allocation factor. Other classes with unexplained discrepancies include Rates RSVP[11] and RTP. One would expect load growth to generally affect customer energy and demand levels roughly similarly, unless specific assumptions for a given customer dictate otherwise.

Q COULD CUSTOMER-SPECIFIC LOAD GROWTH INFORMATION EXPLAIN SOME OF THE DISCREPANCIES IN RATIOS SHOWN ON EXHIBIT AMA-4?

A Yes. Especially for the Standby ("SBS") Rate and Contract ("CSA") Rate customers, these customers may very well intend to increase their annual energy consumption targeted only to the non-peak times, and therefore their estimated peak demands would not change in the same way total energy levels would change.

But Gulf Power has provided no such support for either the large user load changes nor the Test Year energy, 12 CP, and NCP values for the smaller use customers.

Q WHAT OBLIGATION DOES GULF POWER HAVE TO PROVIDE SUPPORT FOR ITS TEST YEAR ALLOCATOR VALUES?

A MFR E-11 requirements are as follows, that Gulf Power must provide: (1) a description of how coincident and noncoincident demands were developed; (2) the

[11]Although Rate RSVP is meant to be a critical pricing rate, incentivizing residential customers to reduce their peak demands, Gulf Power's 2015 tariffs, and proposed RSVP rates in this case, provide no such incentive because the energy tariff prices are the same no matter the time of day or season. Therefore, one would assume any load growth in the RSVP class would affect annual energy and peak demand similarly.

workpapers for the actual calculations; and (3) justification for the methodology used to derive projected demands if that methodology was not the application of ratios of classes' coincident and noncoincident load to actual MWh sales. Page 1 of MFR Schedule E-11 provides insufficient explanation and justification. Workpapers showing actual calculations, rather than just input final values, were not made available for review.

Q DO YOU ANTICIPATE THAT A SWITCH TO A PRODUCTION ALLOCATION METHOD BASED 100% ON 4 SUMMER CP / 1 WINTER CP DEMAND WOULD BE A MEANINGFUL COST SHIFT BETWEEN CUSTOMER CLASSES?

A Yes. Table 1 below provides a comparison of the various production cost allocation factors I have discussed in this testimony. A movement from the Company's proposed 12 CP and 1/13th method to a 100% demand 4 summer CP / 1 winter CP allocation factor is meaningful for a number of classes. I estimate that a shift in the allocation factor for any one class of only half of a percentage point would result in an approximate $4 million shift in total revenue requirement to the class.[12] For nearly all of the rate classes besides the Residential class, a shift in $4 million in revenue requirement is nearly all, or fully all, of the proposed class revenue increase in this proceeding.

[12]Based on a comparison of the results between my and the Company's COSS.

TABLE 1

Comparison of Allocation Factors
Across Various Production Allocation Methods

Rate Class	Company Proposed 12 CP & 1/13th[1]	Average & Excess[2]	4 Summer CP[2]	4 Sum. CP / 1 Winter CP[3]
Residential	55.52%	55.82%	53.78%	56.24%
GS	2.77%	2.88%	3.06%	2.90%
GSD/GSDT	21.87%	21.73%	23.05%	21.84%
LP/LPT	6.71%	6.49%	6.87%	6.51%
Major Accounts	12.62%	12.15%	12.93%	12.19%
OS	0.50%	0.92%	0.31%	0.32%
Total Retail	100.00%	100.00%	100.00%	100.00%

Sources:
1. MFR Schedule E-9
2. AMA Workpaper 1
3. Exhibit AMA-3

Q WHAT IS YOUR PROPOSED PRODUCTION COST ALLOCATION METHOD?

A I recommend that the Company provide the results in this instant proceeding in its rebuttal testimony of a 100% demand 4 summer CP / 1 winter CP production cost allocation method using fully justified input allocation data. I believe that this allocation method is most supported by the Company's system resource planning and the load characteristics and the nature of the Gulf Power and Southern Company summer peaking system.

In the absence of the reliable COSS results, I recommend that the final approved spread of the revenue increase across classes be adjusted to fall within a more narrow band around the system average increase. Because the data necessary to verify the reasonableness of the Company's estimated class coincident peaks has not been made available to the Commission, and movement to a more reasonable production cost allocation method would meaningfully affect the COSS results, one cannot rely on the Company's filed COSS results to determine the appropriate spread of the revenue across rate classes.

VII. Spread of Revenue Increase

Q WHAT IS YOUR PROPOSAL CONCERNING THE SPREAD OF THE APPROVED REVENUE INCREASE?

A I propose that the spread be narrowed across classes, closer to the system average increase. Specifically, I propose that no class receive more than 1.1x the system average increase. This is a reduction to the Company's proposed limit of 1.5x the system average increase.[13] Because the underlying class energy and demand data used for many of the allocation factors in the Company's COSS are unreliable based on the data available, I recommend that the 1.5x the system average band be reduced to 1.1x the system average so as to spread the approved revenue increase more evenly across customer classes.

Q PLEASE DESCRIBE HOW YOU DEVELOPED YOUR PROPOSED REVENUE SPREAD.

A Still using the Company's and my adjusted COSS results as a guide, for those classes that are in need of a considerably higher than system average increase, I recommend an increase at 1.1x the system average. For the classes deserving of a lower than system average increase, I have recommended a 0.9x the system average increase. For those classes which require nearer a system average

[13] Direct Testimony of Lee P. Evans, page 6, line 16.

increase according to the Company and my proposed COSS results, I have proposed an increase approximately equal to the system average increase.

Table 2 below provides a comparison of my proposed spread of the increase to the Company's proposal.

TABLE 2

Comparison of Company and FEA Proposed Revenue Increase
Dollars in Thousands

Rate Class	Present Base Revenues	Company Proposed Increase[1] ($000)	Company Proposed Increase[1] Percent	Company Proposed Increase[1] Index	FEA Proposed Increase[2] ($000)	FEA Proposed Increase[2] Percent	FEA Proposed Increase[2] Index
Residential	$ 335,138	$ 60,921	18.2%	0.9	$ 65,144	19.4%	1.0
GS	22,687	4,663	20.6%	1.1	4,973	21.9%	1.1
GSD/GSDT	111,016	20,649	18.6%	1.0	19,212	17.3%	0.9
LP/LPT	28,475	6,091	21.4%	1.1	5,475	19.2%	1.0
Major Accounts	39,815	11,472	28.8%	1.5	8,728	21.9%	1.1
OS	18,188	2,885	15.9%	0.8	3,148	17.3%	0.9
Total Retail	$ 555,319	$ 106,681	19.2%	1.0	$ 106,681	19.2%	1.0

Sources:
1. MFR Schedule E-13a
2. Exhibit AMA-3

*Note: Excludes Fuel and Other Revenue (fees, rental payments, etc.)

Q WHY IS YOUR PROPOSED NARROWING OF THE SPREAD OF THE REVENUE INCREASE TO CLASSES MORE REASONABLE THAN THE COMPANY'S PROPOSAL?

A The Company's proposed band, shown clearly in Table 2 above, ranges from 0.8x to 1.5x the system average increase. My proposed narrowing of the band, using 0.9x to 1.1x, does not impact the total revenue collected by the Company, but rather apportions the revenue increase in a more even-handed manner. Because the energy and demand data underlying many of the COSS allocation factors have not been sufficiently supported as reasonable estimates, customers should not receive undo rate increases based primarily on potentially flawed COSS results. For these reasons, I recommend narrowing the band and spreading the increase more evenly, an example of which is shown in Table 2 above.

Q DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A Yes, it does.

INTRODUCTION AND OVERVIEW

Q. Please state your name and business address.

A. My name is Karl R. Rábago. I am the Executive Director of the Pace Energy and Climate Center at the Elizabeth Haub School of Law ("Pace"). My business address is 78 North Broadway, White Plains, New York.

Q. What is Pace?

A. Pace is a project of the Elisabeth Haub School of Law at Pace University. As a non-partisan legal and policy think tank, Pace develops cost-effective solutions to complex energy and climate challenges and transforms the way society supplies and consumes energy. For more than twenty-five years, Pace has been providing legal, policy, and stakeholder engagement leadership in New York, the Northeast, and other jurisdictions. Located on the campus of the Elisabeth Haub School of Law, Pace engages and leverages a strong legal faculty and student body in its work, particularly through the internationally recognized Environmental Law Program and the Pace Land Use Law Center. Pace has many years of success in working with and supporting the New York State Energy Research and Development Authority ("NYSERDA"), the New York Public Service Commission ("NYPSC"), and the New York Department of Environmental Conservation. Pace's work also includes strategic engagement with state legislative and executive officials, as well as in key NYPSC proceedings. In these capacities, we have had the opportunity to form long-lasting partnerships within the community of non-governmental organizations that work in the field of energy.

Q. Please summarize your background and experience.

A. I have some twenty-five years' experience in electric utility regulation, the electricity business, technology development, and markets. I am an attorney with degrees from Texas A&M University and the University of Texas School of Law, and post-doctorate degrees in military and environmental law from the U.S. Army Judge Advocate General's School and Pace School of Law, respectively. Of note, my previous employment experience includes serving as a Commissioner with the Public Utility Commission of Texas, Deputy Assistant Secretary with the U.S. Department of Energy, Vice President with Austin Energy, and Director of Regulatory Affairs with AES Corporation. I am also principal of Rábago Energy LLC, a consulting practice operating in New York. A detailed resume is attached as Exhibit KRR-1.

Q. Have you previously testified before this or any other Commission?

A. I submitted testimony in Florida Public Service Commission ("Commission") dockets 130199-EI, 130200-EI, 130201-EI, 130202-EI, and 150196-EI. In the past four years, I have submitted testimony, comments, or presentations in proceedings in New Hampshire, Virginia, New York, Hawaii, Iowa, Indiana, Ohio, Rhode Island, Georgia, Massachusetts, Minnesota, Michigan, Missouri, Louisiana, North Carolina, Kentucky, Arizona, Wisconsin, Vermont, California, and the District of Columbia. A listing of my recent previous testimony is attached as Exhibit KRR-2.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to review and respond to the proposal by Gulf Power Company ("Company") to increase and restructure residential rates.

Q. What information did you review in preparing this testimony?

A. I reviewed relevant prefiled testimony of Company witnesses, filed Company schedules and tables, and relevant Company responses to information requests. I also listened to depositions of Company witnesses Michael O'Sheasy, Jun Park, and Robert McGee.

Q. What are your recommendations to the Commission?

A. Based on my review of the evidence in this case, I make several recommendations to ensure that Gulf Power Company's residential rates are fair, just, and reasonable:

- The Commission should not approve the Company's proposal to increase fixed customer charges applicable to Residential customers via the untested and unstudied "Blank & Gegax" ("B&G") methodology, and should direct that any approved revenue requirement associated with those proposed rate changes be allocated solely to volumetric energy-demand charges.
- The Commission should not approve the Company's use of the minimum system approach for classifying customer costs and should direct the Company to employ an approach that assigns to the customer cost category those costs that vary solely or predominantly with changes in the customer count. That is, only customer-related costs should be included in the base charge.
- The Commission should not approve the Company's proposal to use a 1NCP allocator for any demand-related distribution costs, and should direct the Company to evaluate allocators that use many more hours in the non-coincident peak of customer classes or groups.

SUMMARY OF FINDINGS

Q. What are your findings regarding the Company's fixed customer charge proposals?

A. My findings are summarized as follows:

- The Company's proposal to expand the scope of fixed customer charges for residential rate classes to include demand charges is at odds with long-established principles of regulatory ratemaking practice.
- The Company has offered a deeply flawed, wholly unsubstantiated, and inadequate justification for its request to increase fixed customer charges for residential rate classes via the B&G methodology.
- The Company has selected cost classification and allocation methods, as well as the

B&G methodology, that result in unreasonably high customer costs for residential customers.

- The Company proposes a low-income customer subsidy program that fails to meaningfully mitigate the regressive impacts associated with its rate and rate structure proposals.
- The Company has failed to adequately consider the adverse impacts that its proposed fixed customer charges would have on low-income customers, economic efficiency, energy efficiency, conservation, and renewable energy.

THE COMPANY'S FIXED CUSTOMER CHARGE PROPOSAL FOR RESIDENTIAL CUSTOMERS

Q. What is the Company's proposal regarding fixed charge increases for residential customers?

A. The Company proposes to dramatically increase customer charges and reduce volumetric charges through two major sets of changes. First, through the cost allocation process, the Company proposes to increase the total revenue requirement assigned to the residential class by more than 20%, or more than $68 million. This change is proposed through use of a minimum system method for assigning costs to residential customers, as well as through increases in costs. Figure KRR-1, below, shows the difference between present residential rates by cost of service category with no minimum system methodology, and the costs allocated to residential customers under the proposed rates with the application of a minimum system methodology.

Figure KRR-1: Comparison of Residential Costs under Present and Proposed Approaches

		No Min System	With Min System		
		Present	Proposed		
Line No.	Description	Residential Rate Class ($000)	Residential Rate Class ($000)	Change in Costs to Residential Customers ($000)	Percent Change in Costs to Residential Customers
1	REVENUE REQUIREMENTS FROM				
2	SALE OF ELECTRICITY ($000)				
3	ENERGY (NON-FUEL PORTION)	22,228	25,069	**2,841**	**12.8%**
4	DEMAND	237,947	272,193	**34,246**	**14.4%**
5	PRODUCTION	124,107	143,932	**19,825**	**16.0%**
6	TRANSMISSION	39,518	54,426	**14,908**	**37.7%**
7	DISTRIBUTION	74,322	73,835	**-487**	**-0.7%**
8	CUSTOMER	67,564	98,646	**31,082**	**46.0%**
9	DISTRIBUTION	23,785	53,347	**29,562**	**124.3%**
10	CUSTOMER ACCOUNTS	28,074	28,993	**919**	**3.3%**
11	CUSTOMER ASSISTANCE	15,705	16,306	**601**	**3.8%**
12	CUSTOMER (LIGHTING FACIL)	0	-	**0**	
13	TOTAL REVENUE REQUIREMENT	327,739	395,908	**68,169**	**20.8%**
14	BILLING UNITS (ANNUAL)				
15	ENERGY (MWH)	5,336,892	5,336,892	**0**	**0.0%**
16	BILLING DEMAND (KW)				
17	SBS BILLING KW FOR RSRV CHG				
18	CUSTOMER	4,796,951	4,796,951	**0**	**0.0%**
19	UNIT COST				
20	ENERGY (¢/KWH)	0.4165	0.46973	**0.053**	**12.8%**
21	CUSTOMER ($/CUST/MO OR ¢/KWH)	14.08	20.56	**6.480**	**46.0%**
22	CUSTOMER(LIGHTING FACIL.)				
23	($/CUSTOMER/MO)				
24	DEMAND- PRODUCTION- $/CUST/MO	25.87	30.00	**4.13**	**16.0%**
25	DEMAND- TRANSMISSION- $/CUST/MO	8.24	11.35	**3.11**	**37.7%**
26	DEMAND- DISTRIBUTION -$/CUST/MO	15.49	15.39	**-0.10**	**-0.6%**
27	DEMAND- PRODUCTION - $/KW				
28	DEMAND- TRANSMISSION- $/KW				
29	DEMAND- DISTRIBUTION - $/KW				
30	DEMAND- PRODUCTION- ¢/KWH	2.32545	2.69693	**0.3715**	**16.0%**
31	DEMAND- TRANSMISSION - ¢/KWH	0.74047	1.01981	**0.2793**	**37.7%**
32	DEMAND- DISTRIBUTION -¢/KWH	1.39261	1.38348	**-0.0091**	**-0.7%**

Source: MFR Section E, Schedules E-6a, E-6b.

Q. What is the second way that the Company proposes to change residential rates?

A. The Company is proposing what it calls an "Advanced Pricing Package" to impose regressive increases in fixed customer charges through the application of an unproven and untested method that it found in a trade publication called the "Blank & Gegax" ("B&G") method. The total impact on residential customers taking service under the default residential rate RS of the proposed changes in cost allocation and rate structure is depicted in Figure KRR-2.

Figure KRR-2: Impact of Company Proposals on Total Monthly RS Bill

Billing Determinants	Total Monthly Bill RS						
	Current Rates			Proposed Rates			
Energy	Current Structure	Proposed Structure	Percent Change	Current Structure	Proposed Structure	Percent Change	Percent Change from Current Rates
0	$ 18.87	$ 41.09	118%	$ 20.39	$ 48.09	136%	155%
100	$ 30.24	$ 50.59	67%	$ 32.38	$ 57.76	78%	91%
300	$ 52.95	$ 69.56	31%	$ 56.35	$ 77.08	37%	46%
500	$ 75.68	$ 88.56	17%	$ 80.34	$ 96.43	20%	27%
750	$ 104.07	$ 112.28	8%	$ 110.30	$ 120.60	9%	16%
1000	$ 132.46	$ 136.00	3%	$ 140.27	$ 144.76	3%	9%
1112	$ 145.19	$ 146.63	1%	$ 153.59	$ 155.58	1%	7%
1250	$ 160.86	$ 159.73	-1%	$ 170.25	$ 168.94	-1%	5%
1500	$ 189.27	$ 183.47	-3%	$ 200.22	$ 193.10	-4%	2%
1750	$ 217.66	$ 207.19	-5%	$ 230.18	$ 217.27	-6%	0%
2000	$ 246.05	$ 230.91	-6%	$ 260.15	$ 241.43	-7%	-2%

Source: Exhibit RLM-1, Schedule 6.

Q. Why does the Company's proposed customer charge increase so dramatically?

A. The proposed increase is a function of a Company proposal to allocate more demand-related costs to residential customers and the customer component of costs, and then to propose collection of those charges through the customer charge instead of through volumetric charges, as is the normal practice among investor owned utilities throughout the United States.

Q. What does the data show about the Company's proposed revenue and rate changes?

A. The Company proposes a 155% increase in the residential customer charge under Rate RS, from $0.62/day/customer to $1.58/day/customer. The Company also proposes a 28% decrease in the energy component of volumetric (per kWh) charges. The Company proposes to increase revenues collected from the residential class by a total of $68,169,000, and to heavily skew the changes in revenue collection to low-use customers.

Q. How does the Company justify its proposal to increase the amount of revenue

allocated to customer charges so dramatically?

A. Company witnesses O'Sheasy and McGee provide the Company's rationale for these increases. In general, witness O'Sheasy advances the Company's proposals related to cost of service and cost allocation. Witness McGee advances the residential rate structure proposals and application of the B&G methodology for designing rates.

Q. How does the Company propose that costs be allocated in this rate case?

A. As shown in Figure KRR-1, witness O'Sheasy proposes, as a result of the cost of service study and the application of the minimum system method for allocating costs, to increase the revenue requirement assigned to residential customers by $68,169,000, or 20.8% over the present revenue requirement without the minimum system. This total increase results from a 12.8% increase in non-fuel energy costs assigned to residential customers ($2,841,000), a 14.4% increase in costs allocated to the demand component ($34,246,000) of residential rates, and a 46% ($31,082,000) increase in costs allocated to the customer component. Of that increase in the customer component of residential revenue requirement under the proposed rates, the vast majority ($29,562,000) results from more than doubling the demand-related costs allocated to the customer component.

Q. What are the consequences of the Company's decisions regarding cost classification for distribution system costs?

A. The minimum system method overstates customer-related costs because most distribution system costs, even those associated with the components of a minimum system, are not directly caused by the addition of new customers to the system. The Company chose an approach that allocates a larger portion of fixed distribution system costs to customer charges, with the result that the customer charge represents a large fraction of sunk fixed costs that a customer would have to pay regardless of the costs these customers cause. As a result, the minimum system approach also imposes unjust burdens on low-income and low-use customers. For these and other reasons, even Bonbright rejected the minimum system and zero-intercept methods for classifying customer costs.

Q, Is the inclusion of costs not directly caused by the addition of new customers to the system consistent with long-established principles of electric utility regulation and ratemaking?

A. No. For example, Bonbright, attached as Exhibit KRR-3, defines the fixed customer charge on pages 347-349 as follows:

> *These are those operating and capital costs found to vary with the number of customers regardless, or almost regardless, of power consumption. Included as a minimum are costs of metering and billing along with whatever other expenses the company must incur in taking on another consumer.*

In fact, Bonbright rejected the minimum system and zero-intercept methods for classifying customer costs that are at the foundation of the proposals advanced by Company witnesses O'Sheasy and McGee.

Q. Are established practices for setting the customer charge better and fairer?

A. Yes. Best practices assign to the customer cost category those costs that directly vary with the number of customers. Again, these costs would include a portion of the meter, service drop, meter reading, billing, and collection costs.

Q. How much cost does a new customer cause?

A. Costs directly related to new customers include a portion, but not all, of the cost of a meter, billing and metering services, and collection costs. These costs would likely sum to about $5-$10 per customer per month, depending on local costs, billing period used, and other factors. *See* Exhibit KRR-4 at page D-6. New customers certainly do not add all the costs that the Company would assign to the customer component under witness O'Sheasy's cost of service study and cost allocation proposals when those customers take service from the Company.

Q. Does a focus on costs caused by new customer connections properly address fixed costs already incurred to build the distribution system that the customer connects to?

A. Yes. The volumetric charge can fully recover those sunk fixed costs, preserve cost-causation features, and send more rational price signals to residential customers. As stated by noted utility economist, Severin Borenstein:

> *[T]he mere existence of systemwide fixed costs doesn't justify fixed charges. We should get marginal prices right, including the externalities associated with electricity production. We should use fixed charges to cover customer-specific fixed costs. Beyond that, we should think hard about balancing economic efficiency versus fairness when we use additional fixed charges to help address revenue shortfalls.*

Borenstein's article is attached as Exhibit KRR-5.

Q. Is the Company's approach the only approach that it could have used to design residential charges?

A. No. Other methods are appropriate, and, in light of the unjust discrimination and economic inefficiency that results from the Company proposal and the existence of other reasonable approaches, the Company proposal is unreasonable. I will discuss these impacts and alternatives in more detail.

Q. What is the B&G method and why does the Company propose to use it in restructuring residential rates?

A. Witness McGee asserts that the B&G method is a way of integrating demand costs into rates without having to offer a three-part rate (with a separate demand charge) as the default rate for residential service. It may be that, but it is also an untested, unstudied, and clearly regressive approach to rate design that should not be used, for the first time anywhere, as the default rate design for an entire residential customer class.

The B&G method is simply an arithmetic exercise to raise all residential customer charges and flatten the slope of the curve delineating how bills increase with usage. That is, the method forces a single straight-line fit onto a sample of residential data to increase customer charges by nearly $30 per month while also reducing energy charges for high users. Like witness McGee, the B&G method offers no detailed analysis of the relationship between customer demand and energy consumption, does no analysis of the cost to serve customers, and has no authoritative support for its propositions. Rather, it is proposed solely as a method for incorporating demand-related costs into customer charges without having to offer a three-part rate.

Witness McGee asserts that the B&G method cures an inequity in rates that he did not demonstrate to exist, that it reduces monthly bill volatility by fixing a much larger portion of each month's bill and reducing volumetric charges, and that for customers who do not like the increased monthly fixed charges, the Company offers a three-part rate that witness McGee admits is generally disfavored by customers and rarely used in the United States.

Q. Why does the Company propose rate restructuring based on the B&G method?

A. Company witness McGee makes a number of arguments in support of the Company's proposal to dramatically increase the customer charges even beyond what the cost of service and cost allocation approaches would. Witness McGee asserts that because low-use customers pay less in demand-related costs through volumetric rates than the average residential customers, they are not paying their fair share of demand-related costs.

Similarly, witness McGee asserts the Company's belief that because high users pay more in demand related costs than the average residential customer, they are being unfairly required to bear a cost burden they did not cause.

Q. Does witness McGee offer any testimony or point to any analysis to substantiate his claim that high users are being treated inequitably when volumetric rates cause them to pay more than the average customer in demand-related costs?

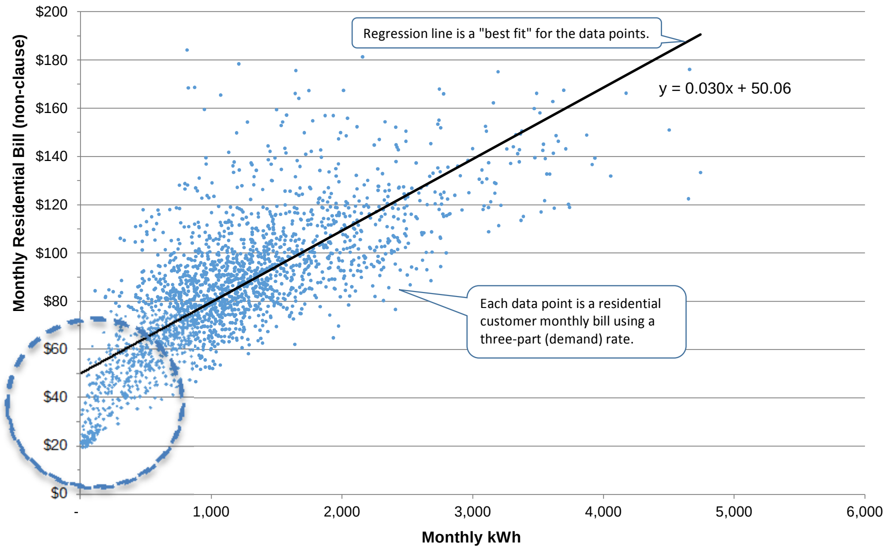
A. No. Witness McGee bases his assertions about inequities on an unsubstantiated premise that rate design should mimic utility cost structure in order to advance economic efficiency and equity among customers. He cites no cost of service analysis to suggest that high users create lower demand costs than low users.

Q. Is it likely that witness McGee has discovered a condition among Company customers that demonstrates that high users are low demand-cost causers, and that low users are, in turn, high demand-cost creators?

A. No. It is not surprising that witness McGee offers no analytical support for the argument that forms the foundation for the Company's rate restructuring proposal. In my 25-plus years of work in the electricity industry, including review of and on-the-record decisions in hundreds of rate cases, I have never seen a utility that has a cost of service structure that differs from the general trend that high users are also high demand cost drivers. Indeed, this observable general reality is supported by common sense. High user customers tend to be high income customers, living in larger homes. These customers have and operate many more appliances and systems that add to their demand profile.

Indeed, even the Company's data bears out this relationship. A visual review of Figure 1 in witness McGee's Exhibit RLM-1, Schedule 5 shows that even when a hypothetical three-part demand rate is applied to a sampling of residential customers, there is a heavy concentration of customers with low bills, low use, and low demand.

Figure 1
B&G Methodology
Regression Through Three-Part Rate Bills



Source: Company Exhibit RLM-1, Schedule 5, Page 3 of 4.

Q. Do you agree with witness McGee's assertion that economic efficiency and equity are advanced when rate design mimics cost structure?

A. No. In my 25-plus years' experience in the electricity industry, I have never found any article, text, treatise, or other reputable source to support the notion that rate design must mimic cost structure in order to achieve or advance economic efficiency. Witness McGee offered none.

Q. What could the Company have learned by reviewing similar proposals from other utilities in the United States?

A. A review of similar requests by other utilities and action taken in regulatory proceedings reveals that the Company's request is wildly outside of the range of experience in the United States. Figure KRR-3 below provides information about customer fixed charge requests over the past several years. It shows that the Company's proposed 155%

increase in fixed customer charges for residential customers is an extreme outlier compared to what has been requested and approved when compared to more than fifty cases from across the United States. The average increase in those other cases was only 21%, less than one sixth of the Company proposal. Almost half of the cases resulted in no approved increase to the fixed customer charges at all. It is also worth noting that nearby and similarly situated utilities Georgia Power and Duke Energy Florida use rates that rely on volumetric charges to recover demand and energy costs. In fact, Georgia Power has a residential fixed-charge of $10 per month, Duke Energy Florida has a fixed charge of $8.76 per month, Florida Power & Light has a fixed charge of $7.87 per month, the Orlando Utilities Commission has a fixed charge of $8 per month, the City of Tallahassee has a fixed charge of $7.41 per month, and JEA has a fixed charge of $5.50 per month. *See* Exhibit KRR-6. Gulf Power Company already has a high fixed charge that is out of step with its neighbors, and is proposing a 155% increase on top of that.

Figure KRR-3: Results Summary of 2014-2016 Fixed Charge Increase Proposals

Results Summary of 2014-2016 Fixed Charge Increase Proposals

				Monthly Fixed Residential Charges			Percent Change			
State	Utility	Holding Company	Electric/	Existing	Proposed	Approved	Existing to	Existing to	Notes	Effective Date
Electric										
AR	Entergy Arkansas	Entergy Corporation	Electric	$6.95	$9.00	$8.43	29%	21%		2/2016
AZ	UniSource Energy Services	Fortis	Electric	$10.00	$20.00	$15.00	100%	50%	Also rejected mandatory demand	8/2016
CA	Pacific Gas & Electric Company	PG&E Corp	Electric	$0.00	$10.00	$0.00	-	0%	$10 minimum bill adopted instead	7/2015
CA	San Diego Gas & Electric	Sempra Energy	Electric	$0.00	$10.00	$0.00	-	0%	$10 minimum bill adopted instead	7/2015
CA	Southern California Edison	Edison International	Electric	$0.95	$10.00	$0.95	953%	0%	$10 minimum bill adopted instead	7/2015
CT	Connecticut Light & Power	Eversource Energy	Electric	$16.00	$25.50	$19.25	59%	20%		12/2014
ID	Avista Utilities	Avista Utilities	Electric	$5.25	$8.50	$5.25	62%	0%	Settlement; decoupling pilot	12/2015
IN	Indianapolis Power & Light	AES	Electric	$6.70	$11.25	$11.25	68%	68%		3/2016
IN	Northern Indiana Public Service	NiSource Inc.	Electric	$11.00	$20.00	$14.00	82%	27%	Settlement	7/2016
KS	KCP&L	Great Plains Energy	Electric	$10.71	$19.00	$14.00	77%	31%	Settlement	9/2015
KS	Westar	Westar	Electric	$12.00	$27.00	$14.50	125%	21%	Settlement	9/2015
KY	Kentucky Utilities Company	PPL Corp	Electric	$10.75	$18.00	$10.75	67%	0%	Settlement	6/2015
KY	Louisville Gas-Electric	PPL Corp	Electric	$10.75	$18.00	$10.75	67%	0%	Settlement	6/2015
KY	Kentucky Power	AEP	Electric	$8.00	$16.00	$11.00	100%	38%		6/2015
MD	Baltimore Gas +Electric	Exelon	Electric	$7.50	$10.50	$7.50	40%	0%	Settlement	12/2014
MD	Baltimore Gas +Electric	Exelon	Electric	$7.50	$12.00	$7.90	60%	5%	Noted gradualism	6/2016
ME	Central Maine Power Company	Iberdrola	Electric	$5.71	$20.00	$10.00	250%	75%	Decoupling implemented as well	8/2014
MI	Consumers Energy	CMS Energy Corporation	Electric	$7.00	$7.50	$7.00	7%	0%		11/2015
MI	DTE Electric Company	DTE Energy	Electric	$6.00	$10.00	$6.00	67%	0%		12/11/15
MI	Indiana Michigan Power	AEP	Electric	$7.25	$9.10	$7.25	26%	0%	Settlement	8/2015
MI	Wisconsin Public Service	WEC Energy Group	Electric	$9.00	$12.00	$12.00	33%	33%	Settlement	4/2015
MN	Xcel Energy	Xcel Energy	Electric	$8.00	$9.25	$8.00	16%	0%	Denied in favor of decoupling	5/2015
MO	Ameren	Ameren	Electric	$8.00	$8.77	$8.00	10%	0%	Emphasized customer control	4/2015
MO	KCP&L	Great Plains Energy	Electric	$9.00	$25.00	$11.88	178%	32%		9/2015
MO	Empire District Electric	Empire District Electric	Electric	$12.52	$18.75	$12.52	50%	0%	Settlement	6/2015
MT	Montana-Dakota Utilities	MDU Resources Group	Electric	$5.40	$7.50	$5.40	39%	0%	Settlement	3/2016
NM	El Paso Electric	El Paso Electric	Electric	$7.00	$10.00	$7.00	43%	0%	Rejected recommended decision,	6/2016
NV	Nevada Power	Nevada Energy/Berkshire I	Electric	$10.00	$15.25	$12.75	53%	28%		10/2014
NY	Central Hudson Gas & Electric	Fortis	Electric	$24.00	$30.00	$24.00	25%	0%		6/2015
NY	Consolidated Edison	Consolidated Edison	Electric	$15.76	$18.00	$15.76	14%	0%	Settlement	6/2015
NY	New York State Electric and Gas	Iberdrola	Electric	$15.11	$18.89	$15.11	25%	0%	Settlement	6/2016
NY	Rochester Gas & Electric	Iberdrola	Electric	$21.38	$26.73	$21.38	25%	0%	Settlement	6/2016
NY	Orange & Rockland	Consolidated Edison	Electric	$20.00	$25.00	$20.00	25%	0%	Settlement	10/2015
OK	Oklahoma Gas & Electric	OG&E Energy	Electric	$13.00	$26.54	$13.00	104%	0%	Settlement pending	
OK	Public Service Co. of Oklahoma	AEP	Electric	$16.16	$20.00	$20.00	24%	24%		4/2015
OR	Portland General Electric	Portland General Electric	Electric	$10.00	$11.00	$10.50	10%	5%	Settlement	11/2015
PA	Pennsylvania Power	FirstEnergy	Electric	$8.89	$12.71	$10.85	43%	22%	Settlement	4/2015
PA	West Penn Power	FirstEnergy	Electric	$5.00	$7.35	$5.81	47%	16%	Settlement	4/2015
PA	Metropolitan Edison	FirstEnergy	Electric	$8.11	$13.29	$10.25	64%	26%	Settlement	4/2015
PA	Pennsylvania Electric	FirstEnergy	Electric	$7.98	$11.92	$9.99	49%	25%	Settlement	4/2015
PA	PECO	Exelon	Electric	$7.09	$12.00	$8.45	69%	19%	Settlement; decoupling collaborative	12/2015
PA	PPL	PPL Corp	Electric	$14.09	$20.00	$14.09	42%	0%	Settlement; decoupling collaborative	11/2015
SD	NorthWestern Energy	Northwestern Company	Electric	$5.00	$9.00	$6.00	80%	20%	Settlement	11/2015
TX	El Paso Electric		Electric	$5.00	$10.00	$6.90	100%	38%	Settlement pending	
TX	Southwestern Public Service Company	Xcel Energy	Electric	$7.50	$9.50	$9.50	27%	27%		12/2015
UT	Rocky Mountain Power	PacifiCorp/Berkshire Hath	Electric	$5.00	$8.00	$6.00	60%	20%	Settlement	8/2014
VA	Appalachian Power Co	AEP	Electric	$8.35	$16.00	$8.35	92%	0%		11/2014
WA	Avista Utilities	Avista	Electric	$8.50	$14.00	$8.50	65%	0%	Settlement	1/2016
WA	PacifiCorp	PacifiCorp/Berkshire Hath	Electric	$7.75	$14.00	$7.75	81%	0%	Stated preference for decoupling	3/2015
WV	Appalachian Power/Wheeling Power	AEP	Electric	$5.00	$10.00	$8.00	100%	60%		5/2015
WI	Madison Gas and Electric	MGE Energy	Electric	$10.29	$68.00	$19.00	113%	87%		12/2014
WI	Xcel Energy	Xcel Energy	Electric	$8.00	$18.00	$14.00	113%	87%		12/2015
WI	We Energies	WEC Energy Group	Electric	$9.13	$16.00	$16.00	75%	75%		11/2014
WI	Wisconsin Public Service	WEC Energy Group	Electric	$10.40	$25.00	$19.00	140%	83%		11/2014
WI	Wisconsin Public Service	WEC Energy Group	Electric	$19.00	$25.00	$21.00	140%	83%	PSC to study on customer impacts	11/2015
				$9.35	**$16.25**	**$11.05**	**83%**	**21%**		

Source: Data compiled from various sources and cases.

Q. Does the Company approach align costs with cost causers based on a cost-of-service study?

A. No. The Company's rate proposals violate cost causation alignment principles in several ways, as I have already discussed. In fact, the proposed B&G method assigns equal and average shares of sunk fixed costs to all residential customers without any regard for whether those costs were caused by high users of the distribution system. The high fixed charges also immunize high users from the consequences of future high use of electricity, obviating the price signal benefits that attend to the use of volumetric charges to recover demand-related costs.

Q. Have other Commissions addressed the cost-causation argument offered by the Company in regard to proposed fixed charge increases?

A. Yes. Notably, the Illinois Commerce Commission recently addressed a fixed charge increase proposal in a natural gas case proposing a 43% increase. That order is attached as Exhibit KRR-7. That Commission was addressing another method for increasing fixed customer charges, the "Straight Fixed Variable" rates design, which has similar results and impacts as the proposed B&G method. In the final order in that case, the Illinois Commission stated:

> *The Companies' proposed SFV rate design diverges from cost-causation, substituting its "fixed" cost designation for cost causation as the determinative allocator. … By failing to send proper price signals, the Companies' proposed rate design denies consumers who conserve the benefit of their actions, and punishes customers who are frugal. The proposed SFV charges are indifferent to efficiencies in usage and demand. In contrast, the Commission has recognized that lower monthly customer charges and higher volumetric charges can advance energy use conservation and efficiency policy objectives by providing a greater*

price signal. … The Commission finds that Staff's and Intervenor's arguments in favor of assigning demand-based costs to volumetric charges are consistent with energy efficiency and the avoidance of cross subsidies.

Exhibit KRR-7 at pages 167 through 170.

Q. Does the B&G method treat similarly situated customers the same and reduce unnecessary subsidies?

A. The Company provides no evidence to support such a finding. As I have explained, the Company proposal actually requires low-use customers to subsidize the high use customers who drive distribution costs and will require them to continue subsidizing them as those high users drive new distribution system costs.

Q. Is the rate design resulting from the application of the B&G method simple, easy to understand, and predictable?

A. Yes, as compared to the three-part rate that witness McGee offers as a straw man proposal. But the B&G approach is not unique in this regard, and the Company has not demonstrated that its proposed combination of fixed customer charges and volumetric rates is optimal, or is any more simple, easy to understand, or predictable than the current rate design with customer-driven customer charges and volumetric rates for energy and demand. Moreover, by locking demand-related costs into a non-bypassable customer charge that cannot be avoided through energy conservation or demand reduction, the Company is ignoring the price signal function of rates and will frustrate customers who try to do something—anything—to substantially reduce their bills. It is not good rate making design to make it practically impossible for low- and high-use customers to avoid the bill impacts of high fixed customer charges.

Q. Please explain.

A. Under the Company proposal, a residential customer would pay an extra $29.22 each month in the increased fixed customer charge. That customer would have to reduce their monthly use of electricity by 302 kWh *per month* in order to offset that increase, based on the proposed volumetric energy charge of $0.09667 per kWh (with clauses). In this way, it is highly predictable that most customers would not be able to undertake enough energy efficiency or conservation to offset the increased customer charge. This level of reduction would represent a greater than 25% decrease in the monthly consumption of the average residential customer served by the Company. The ability to effectively manage electric bills through reasonable efforts to conserve or become more efficient is likely preferable over bill stability to all but the most well-to-do and highest use customers.

Q. Does the Company proposal reduce weather risk by keeping bills level through high-use months?

A. Simple arithmetic suggests that differences in monthly bills are reduced when more of the bill is fixed. However, this reasoning is a somewhat cynical justification for extracting monopoly rents when the Company performed no analysis to demonstrate whether cost-effective energy efficiency and conservation could similarly and more affordably reduce month-to-month bill variability and reduce bills, and when the Company's own analysis shows that the price of this reduced monthly bill variability is an average bill increase of at least 10% for customers using about 1,000 kWh or less each month. *See* Figure KRR-2.

Q. Doesn't Company witness McGee testify that there is high customer satisfaction in flat monthly billing rate designs?

A. Yes. However, the proposal is not flat monthly billing. Moreover, the Company is not offering its proposed rate structure as an option for customers willing to pay higher fixed monthly charges in return for a reduction in volumetric charges. That proposition should be tested, if at all, as a voluntary offering before it is imposed as the default rate design for all residential customers.

Q. Does the Company's proposed approach result in rates that provide economic efficiency by exposing customers to the Company's cost structure?

A. Again, there is no evidence in economic literature, regulation, or rate making that economic efficiency is enhanced by crafting rate designs to match utility cost structures. The Company offers no evidence to support such a finding. I discuss the fallacy of economic efficiency through mirroring of cost structures in rate design in greater detail later in this testimony.

Q. Does the Company's approach gradually change the structure of rates and bills?

A. No. The Company proposes a 155% increase in the fixed customer charge for residential customers. The Company proposes a monthly bill increase of more than 20% for any customer using fewer than 500 kWh per month. These are not gradual changes.

Q. In summary, is the Company's proposal to restructure its residential rate design with increased customer fixed charges sound economics, regulation, and policy?

A. No. Peter Kind, who authored the "Disruptive Challenges" paper published by the Edison Electric Institute in 2013 that argued for fixed customer charges in the electric utility sector, attached as Exhibit KRR-8, recognized in a paper published in November of 2015 at page 12, attached as Exhibit KRR-9, that "many utilities have been seeking to increase fixed charges, while customers and policymakers are vehemently opposed to such action. An evolved approach would focus on common ground with win4 (i.e. beneficial to customers, policy, competitive providers and utilities) perspective." As Kind explained on page 30:

> *Adopting meaningful monthly fixed or demand charges system-wide will reduce financial risk for utility revenue collections for the immediate future, but this approach has several flaws that need to be considered when assessing alternatives through a win4 lens, by which all principal stakeholders benefit.*

Fixed charges:

- *do not promote efficiency of energy resource demand and capital investment;*
- *reduce customer control over energy costs;*
- *have a negative impact on low- or fixed-income customers; and*
- *impact all customers when select customers adopt [distributed energy resources] and potentially exit the system altogether, if high fixed charges are approved and the utility's cost of service increases.*

The Company's proposed residential rate approach and fixed customer charge proposal is bad for customers, policy, competitive providers, and even itself. As a recent report published by Consumers Union details, attached as Exhibit KRR-10, fixed charge proposals like the one put forth by the Company in this case harm customers in several ways, violate fundamental principles of rate design, are unsupported by sound argument, and are inconsistent with regulatory trends around the country.

THE COMPANY'S VOLUMETRIC ENERGY CHARGE PROPOSAL

Q. What other cost allocation proposals does the Company advance?

A. Notably, the Company also proposes a 1NCP allocator for demand-related distribution costs at Level 4 (Primary Distribution) and Level 5 (secondary distribution), (*see* Witness O'Sheasy Direct Testimony at page 14, lines 1-5), meaning that it proposes to assign these costs to classes based upon each customer class's single hourly maximum level of consumption over the course of a year, whenever it occurs. The Company approach sums each class's 1NCP level of consumption, calculates the class share of the total, and uses the resulting percentages to assign distribution system demand-related costs.

Q. What impact does this proposed approach in cost allocation have on proposed

rates?

A. The Company proposes to recover some demand-related costs in the volumetric energy charge for residential and other customers who do not pay a demand charge. All other distribution costs are proposed for collection through fixed customer charges. The use of the 1NCP allocator as proposed by the Company ignores the physical and engineering reality that customers with different coincident peaks can share system capacity, and therefore this approach will significantly overstate demand-related distribution costs, and can double-charge for distribution system costs unless every class experiences its coincident peak at exactly the same time.

Q. Please explain.

A. Distribution systems are built to meet maximum coincident peak, with a margin of safety. Different classes experience their peak demand at times different than the system peak; that is, they are non-coincident. Distribution systems are not built to serve the sum of all coincident peaks as this would be wasteful and unnecessary. The sum of non-coincident peaks is mathematically certain to be greater than the coincident peak demand under any realistic scenario. Therefore, rates should not be designed based on the false assumption that class costs are reflected in the simple sum of the non-coincident peaks of each customer class.

Q. Why does this matter in rate design?

A. Most importantly, the use of the 1NCP allocator for demand-related distribution costs improperly inflates the fixed charge now bearing demand-related costs. This violates the principle that rates should be based on cost causation.

Q. The Company proposes a decrease in the energy charge. How does that square with your testimony about the impacts of the use of the 1NCP allocator for demand-related distribution system costs?

A. The reduction in energy charges proposed by the Company is essentially a fall-out of the classification decision relating to customer- and demand-related costs. Accounting for the non-coincident peaks of different customer groups and classes is appropriate; a more appropriate method, however, would account for every hour that the system is used—an "8760NCP." Of course, statistical analysis would likely show that a smaller subset of hours would capture significant demand-related costs, but the use of the 1NCP allocator is too extreme a reduction in the number of examined hours. Use of a more broadly-based allocator would likely yield volumetric rates that are lower than those proposed by the Company, and account for the fact that customer groups/classes with disparate non-coincident peaks actually share system capacity. As I will explain, most of the revenues proposed for the customer charge could be collected through the volumetric charge without creating the adverse impacts associated with the Company's proposal.

TOTAL IMPACTS ON RESIDENTIAL CUSTOMERS

Q. What is the net effect of the Company's residential rate proposals on customer bills?

A. The Company proposals impose dramatically greater impacts on low-use customers than on high-use customers. *See* Figure KRR-2. Under the Company proposals, customers who use an average of 300 kWh per month or less would see at least a 46% increase in their monthly electric bills. Customers using 750 kWh per month or less would see at least a 16% increase in monthly bills. Outrageously, customers using 2,000 kWh or more per month would actually see bill decreases due to the reduced volumetric charge, even after the proposed increase in fixed customer charges. High-use residential customers, such as those who use 2,000 kWh per month or more, directly drive residential distribution system costs, requiring larger conductors, transformers, and other service equipment in the portion of the system that serves them. The result of the Company's proposed rate changes flies in the face of the principle of allocating costs to cost causers, and points out a major flaw in the Company's proposal to move residential rates to the proposed rate design.

Q. Taken together, are the Company's proposals regarding residential rates reasonable?

A. No.

IMPACTS ON LOW-USE AND LOW-INCOME CUSTOMERS

Q. Do increases in fixed charges pose potential problems for low-income, low-usage customers?

A. Yes. Increasing fixed charges can have disproportionate impacts on low usage customers (who are often low-income customers), customers on fixed incomes (who are frequently seniors), students, and customers who have aggressively pursued green building and energy efficiency. This is an area where the Company needs to demonstrate definitively that low-income customers will not be unfairly affected, but the Company fails to address the issue adequately in any of its testimony. Demonstrating that *some* low-income customers use more energy than the residential class average is not proof that low-income customers as a group use more than average.

Q. What do we know about the number of low-use customers in the Company service territory and the impacts of the proposed rates structures?

A. According to data supplied by the Company in response to Staff request for production of documents number 30, and attached as Exhibit KRR-11, more than 245,000 out of nearly 400,000 residential customers use fewer than 1,100 kWh per month, and will see a 9% or greater increase in monthly bills. Nearly 60,000 residential customers use fewer than 400 kWh per month, and will see at least a 27% increase in monthly bills.

Q. Are these problems associated with the Company's decision to pursue its rate restructuring proposals?

A. Yes. The Company's approach to its cost of service study and restructuring of rates with the B&G method are drivers for the unfairly discriminatory impacts of the Company's proposal. In addition, the proposed approach is bad policy for ensuring fairly priced universal access to electricity service. As Jim Lazar of the Regulatory Assistance Project, a noted author and utility rate expert, summarized:

> *[High fixed cost] rate design strikes directly at universal service, because it makes electricity service, even for the most basic and essential uses, unaffordable to low-income households. It does this (even if they are densely located in urban areas where distribution costs are very low), by averaging their cost of service with suburban and rural areas where per customer distribution costs are very different. In effect, under [high fixed cost] pricing, low-income households are made to subsidize higher-income, higher-usage households.*

Exhibit KRR-4 at page D-5.

Q. How does a change to higher fixed charges and lower volumetric charges impact low- and moderate-income customers and other low-use customers?

A. Allocation of costs to fixed, non-bypassable charges imposes a significant burden on low energy users who are low- and moderate-income customers, or customers on fixed incomes, many of whom are elderly. The higher fixed charge is economically regressive. As I previously described, the proposal increases bills for low-use customers much more than for high-use customers; in fact, the Company proposal reduces bills for the very highest users in the residential class. This "reverse Robin Hood" proposal subsidizes the well-to-do at the expense of the poor, people (often seniors) on fixed income, students, and other low users such as conservationists.

Q. What is the Company position on the impact of increased fixed customer charges on low-income customers?

A. The Company proposes a direct subsidy to about 35,000 customers who are qualified under the SNAP program to offset the impact of the increased fixed customer charge. (*See* witness McGee direct testimony at pages 16-19). The SNAP program is an income-tested program that provides nutritional assistance (food stamp) support to qualified citizens. Witness McGee asserts that a subsidy targeted only at low-income customers who have financial problems is efficient, and that the Company rate design eliminates a subsidy that has been flowing to low-income, low-use customers who do not qualify or apply for financial assistance. Witness McGee asserts that low-income, low-use customers who do not qualify for or apply for financial assistance should be required to pay more, much more, in monthly customer charges.

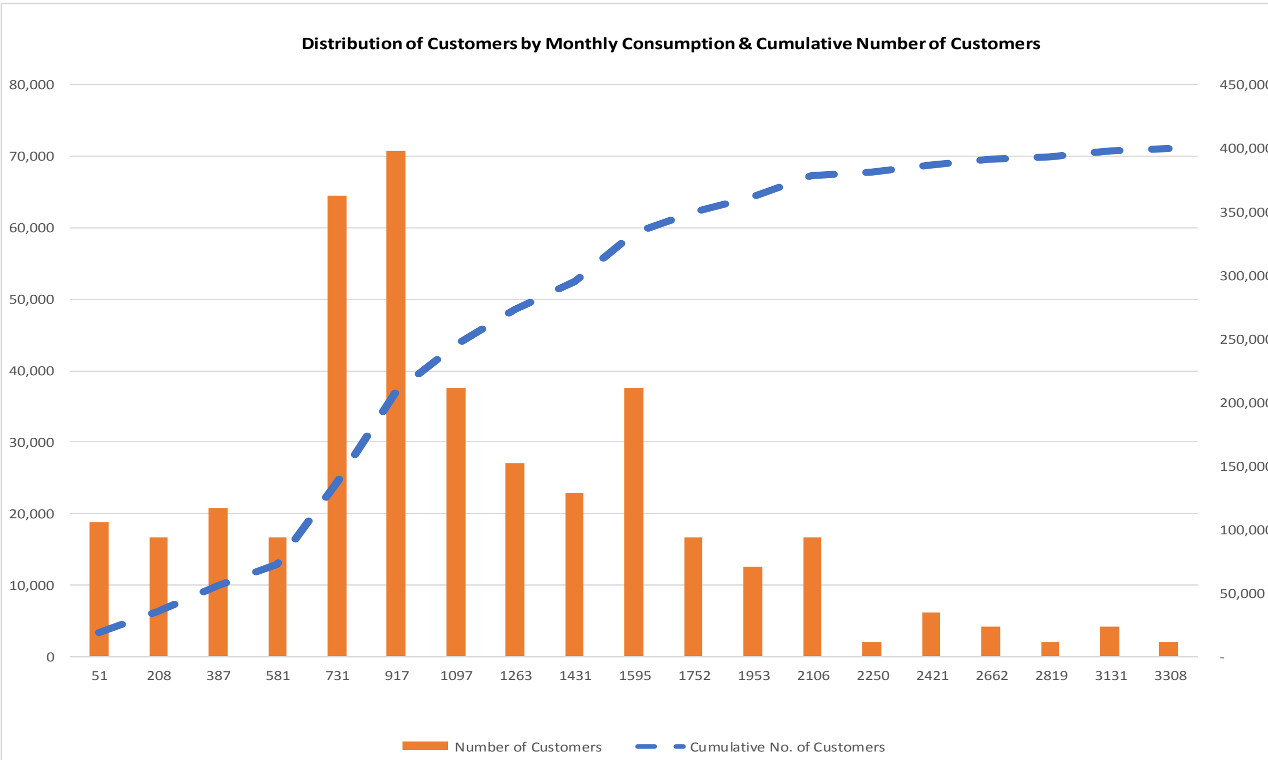
Q. What does SNAP program participation tell us about income and energy use for SNAP customers?

A. The Company offers no information to support any correlation between SNAP customers and low-income electricity customers. The Company has little or no data about customer income levels and cannot identify income levels by consumption level. SNAP customers may be customers in financial distress. They may or may not be high or low energy users.

Q. Should the Commission assume that qualification is indicative of low-income customer data?

A. No. The Company has no information to support any conclusion that SNAP customers encompass all or even a majority of the Company's low-income customers. As demonstrated in Figure KRR-4, what we do know is that about 50% of all residential customers—about 200,000 customers—in the Company service territory use about 900 kWh or less each month. These are the customers who will be most greatly burdened by the Company's proposals to restructure residential rates.

Figure KRR-4: Distribution of Residential Customer Accounts by Consumption Level



Source: Company Response to Staff POD Request 030, attached as Exhibit KRR-11.

Q. Is there any evidence available about whether low-income customers served by the Company have lower or higher use than residential customers as a whole?

A. Yes. SNAP customer data is unlikely to be representative of low-income customers as a whole. The SNAP program, like other assistance programs is targeted toward consumers in some financial distress. Many low-income customers who need assistance are homeowners, and assistance program participation tends to under-represent low-income customers who are renters and others who do not seek support from assistance programs.

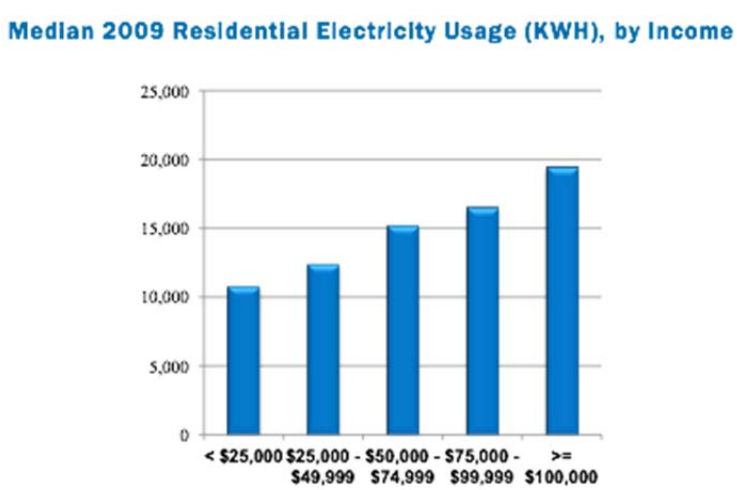
To better understand average low-income usage, it is critical to look at samples that include both program participants and non-participants. The Company has offered no such data. The only national data set that reflects such sampling is the EIA's Residential Energy Consumption Survey ("RECS"). The RECS includes detailed usage data, as well as information regarding household income, age, race, and numerous other characteristics. All of this is broken down into 27 geographic areas referred to as "reportable domains."

The National Consumer Law Center ("NCLC") has extracted this data for Florida customers and found that there is a clear and positive relationship between usage and income, just as exists in the rest of the United States. That is, the greater the income, the greater the average usage. In addition, the NCLC has found that customers 65 years of age or older also use markedly less electricity than younger customers.

Q. What does the NCLC report using the most recent U.S. Energy Information Administration's ("U.S. EIA") data demonstrate?

A. The most recently available data from the U.S. EIA and reported by NCLC reveals that the Company's fixed cost proposal would disproportionately burden low-income and elderly customers.

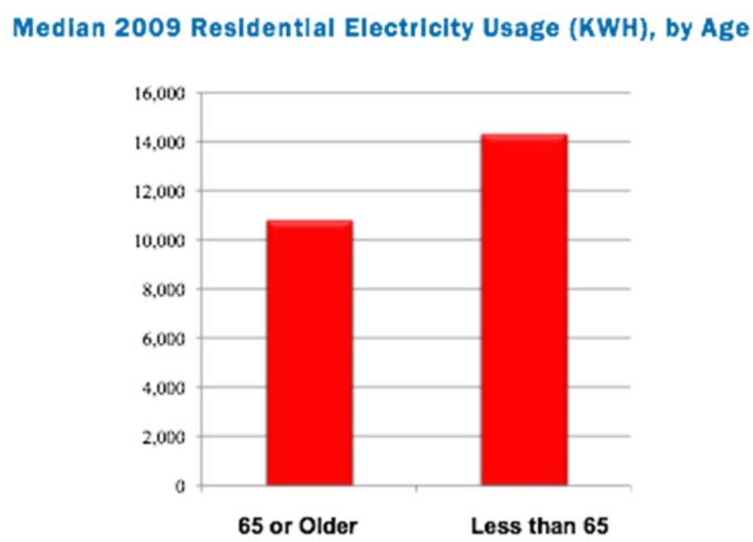
Figure KRR-5: Median 2009 Residential Electricity Usage (kWh) by Income, Florida



Source: NCLC, "Utility Rate Design: How Mandatory Monthly Customer Fees Cause

Disproportionate Harm," (2009 US EIA data), attached as Exhibit KRR-12.

Figure KRR-6: Median 2009 Residential Electricity Usage (kWh), by Age, Florida



Source: NCLC, "Utility Rate Design: How Mandatory Monthly Customer Fees Cause Disproportionate Harm" (2009 US EIA data), attached as Exhibit KRR-12.

Q. Is the Company's Low-Income subsidy proposal reasonable?

A. No. The Company has not demonstrated that low-use customers are high demand-cost causers. Given that the very opposite is likely true, the Company's rate proposals will likely only exacerbate the burdens felt by low-income low-use households. A subsidy limited to SNAP-qualified customers is small relief for regressive rate impacts that would impact 200,000 residential customers. The proposal is not reasonable.

Q. What is the likely result of the increase in fixed residential customer charges?

A. The increase in fixed residential customer charges will increase the number of Florida households living in energy poverty, and increase the demand for energy assistance funding support. Since energy assistance payments are made on behalf of customers directly to the utility, an increase in energy assistance payments means an increase in such revenues from the State or Federal government paid directly to the Company.

IMPACTS ON ENERGY EFFICIENCY AND CLEAN ENERGY

Q. How does increasing fixed customer charges specifically impact customer investment in energy efficiency and conservation?

A. Increases in fixed customer charges create powerful price signals ***against*** investment in energy efficiency, which is inconsistent with stated Florida policy goals.

Q. Did the Company consider the impact of its proposed increase in the fixed customer charge on energy efficiency, conservation, and renewables?

A. The Company indicated that it expected a modest increase in electricity sales because of the proposed residential rate restructuring, but that these sales would be offset by proposed new energy efficiency programs. (*See* witness Park direct testimony at page 22, lines 8-16). Company witness McGee testified that the proposed reduction in volumetric charges would make more energy efficiency programs cost effective under the Ratepayer Impact Measure test. Company witness Floyd provided data, at Exhibit JNF-1, Schedule 3, showing that these new program offerings could save about 3.3 GWh of energy at the meter on average out to the year 2024. Witness McGee stated that savings would be about 3.5 GWh in his direct testimony at page 20, lines 17-18.

Q. How does the potential savings of these expanded programs compare to the broader context of energy efficiency efforts at the Company?

A. First it should be noted that the Company's 2013 Savings were 87 GWh total (gross @ meter) or about 64 GWh in residential savings (calculated from 2013 Annual FEECA Program Progress Report, attached as Exhibit KRR-13). The Company's 2015 Savings were substantially less at 59 GWh total, or 46 GWh residential (calculated from 2015 Annual FEECA Program Progress Report, attached as Exhibit KRR-14). Looking forward, the Commission-approved residential savings goal for 2017 is only 4.2 GWh, which with the addition of the proposed 3.3GWh, would total only 7.5 GWh. In this context, the added energy efficiency programs will only slightly close the gap that was created by major reductions in energy efficiency programs over the past few years.

Q. How much energy efficiency would be required to offset not just increased sales due to lower volumetric costs, but also increased bill burdens imposed through higher fixed charges?

A. The damage to energy efficiency potential that would be caused by the proposed rate restructuring is profound and shocking. As demonstrated in Figure KRR-7, the Company energy efficiency programs would have to reduce consumption by about 1,448 GWh in order to reduce customer bills by the amount that the proposed rate restructuring increases them. This represents an equivalent of 27% of total residential retail sales. The Company rate restructuring proposal must be viewed as a whole. The Company not only proposes to increase an already high fixed customer charge by 155%, but also proposes to structure the rate in a way that precludes any chance for customers to reduce the impact of the increase through changes in consumption. Worse still, the Company provides customers with no means to monitor or track consumption behavior even in the event that they choose one of the alternative rates proposed. The Company's rate restructuring proposals are the most pure form of an effort to extract monopoly rents that I have seen in a very long time.

Figure KRR-7: Equivalent Savings Necessary to Offset Impacts of Proposed Rate Restructuring

		Volumetric Charge per kWh		
	Daily Charge	Energy	All Charges	Non-Energy
Current	$ 0.62	$ 0.04585	$ 0.11359	$ 0.06774
Proposed	$ 1.58	$ 0.03298	$ 0.09667	$ 0.06369
Increase/ (Decrease)	$ 0.96	$ (0.01287)	$ (0.01692)	$ (0.00405)
% Increase/ Decrease	155%	-28%	-15%	-6%

$/YR increase in Daily Charge per Customer	$/YR increase in Fixed Charge as Equivalent kWh (proposed rates)	MWh Savings Required at Proposed Rates to Offset Impacts of Increased Fixed Charges	Total Annual MWh Sales Forecast to Residential Customers per MFR Sched. E6a	% Reduction in Annual Sales Needed to Offset Daily Charge Increase
$ 350.40	$ 3,625	1,448,960	5,336,892	27%

Source: Exhibit RLM-1, Schedule 1.

Q. Why should the Commission be concerned about approving a rate design that is detrimental to energy efficiency, conservation, and renewables?

A. Energy efficiency, conservation, and renewables offer many benefits to the people and State of Florida, and are stated goals in Florida law. These benefits include resource diversification, grid resiliency, future cost reductions associated with increased volume of deployment (economies of scale), job creation, system-wide cost reductions, and leveraging of non-utility investment dollars, among others.

Q. How do energy efficiency and conservation in particular, produce these benefits?

A. Energy efficiency and conservation generate benefits to the utility, ratepayers, and society in general in many ways, including lower cost than traditional generation and infrastructure investments, downward pressure on rates over the mid- and long-term, persistent and consistent savings, nearly endless resource potential due to economies of manufacturing scale and technological innovation, broad availability to all classes of customers, and significant externalized benefits often not accounted for in ratemaking.

Q. Can affected customers avoid fixed charges with more efficient energy use under the Company's proposal?

A. No. The proposed increase in fixed charges cannot be avoided by customer reductions in energy use. As described above, the only customer option for savings is to first offset the increased bill resulting from the increased fixed customer charge. Given the magnitude of the proposed increase in the fixed customers charge, it is practically impossible for the average residential customer to accomplish this.

Q. What do these changes mean to the energy savings opportunity for residential customers?

A. According to the Company, the average monthly consumption of its residential customers is 1,112 kWh per month. (*See* Exhibit RLM-1, Schedule 6). A customer would need to reduce their energy use by 302 kWh per month to avoid volumetric energy charges in an amount sufficient to offset the added bill impact of the proposed increased fixed charge. This would be equivalent to a reduction of 27% in household energy use for the average customer. The Company proposal is that the average customer must reduce consumption by 27% per year in order to offset the increased customer charge, against a rate that saves 15% *less* with each kWh avoided, due to the proposed reduction in the energy charge. The Company not only proposes to increase the non-bypassable customer charge, but also to reduce the opportunity to avoid its impact. The higher fixed charge is a non-bypassable connection tax that makes serious investment in energy efficiency less cost-effective from the customer's perspective.

Q. Do these proposed changes impact customers who have invested in energy efficiency improvements?

A. Yes. Fixed charges are "unavoidable" and reduce the marginal value and the ultimate bill value to those customers who have taken action to reduce their energy consumption. These changes will also have a chilling impact on customers who are contemplating such energy efficiency investments.

Q. How does a change to higher fixed charges and lower volumetric charges impact prior customer investments in energy efficiency?

A. Allocation of costs to fixed, non-bypassable charges imposes an extraordinary burden and destroys investment-backed savings expectations on low energy users who have made significant prior investments in order to lower their bills. Customers and communities that invested in weatherization, equipment improvements, and building remodeling did so both to save money at the then-existing rates as well as to reduce exposure to future rate increases.

By breaking with practices (as voiced by Bonbright and others) that have been long considered settled matters, the increased fixed charges and decreased volumetric rate is like a regulatory taking. Customers who have made good faith investments in greater efficiency based on established rates and ratemaking practices would experience significant and unfair bill increases under the Company's proposal.

As explained above, the Company's proposal is like taking 3,624 kWh per year out of the planned savings stream for those customers (based on 302 kWh per month multiplied by 12 months), extending the payback period they had planned upon and frustrating their investment economics. The proposed 15% reduction in the volumetric energy charge further compounds this problem by reducing the value of each saved kWh. This is irreversible damage to the customers that could be avoided without harm to the Company by simply allocating the revenues associated with the fixed charge increase to volumetric rates.

Q. Does the Company proposal to increase fixed customer charges take into consideration impacts on economic and energy efficiency?

A. The Company witnesses assert that more programs will pass the RIM test due to the lower volumetric rates proposed. Otherwise, the Company witnesses do not address impacts on either past or future energy efficiency investments. Rather, the Company appears single-mindedly focused on collecting sunk fixed costs through fixed customer charges. This backwards thinking focus creates regressive impacts.

Worse, it sends a signal to customers that it is not worth investing in energy efficiency, conservation, or demand reduction, and sets up the economically perverse situation in which customers are charged for creating demand and then given weak or ineffective price signals to mitigate that cost-causation in the future. The Company proposals create significant barriers and impediments to energy efficiency, conservation, and renewables that would result in improper discrimination and in rates that do not comport with sound energy policy.

Q. What is the ultimate impact of reduced energy efficiency, conservation, and development of renewable energy?

A. Inefficient use means uneconomically high levels of energy consumption. These in turn lead to demand for more expensive infrastructure. The costs of these investments are levied on consumers and raise their rates. Following the Company's logic in this rate application, a significant share of these costs would be allocated to fixed charges, creating higher non-bypassable charges. And so on. The Company proposal seems likely to start and accelerate a death spiral of electric service unaffordability.

THE OPTION OF RECOVERING REVENUES THROUGH VOLUMETRIC RATES

Q. Does the Company have alternatives to allocating increased costs to fixed customer charges?

A. Yes. A fixed customer charge is not the only mechanism for recovering fixed costs. Precisely because of the concerns that I summarized, utilities and regulators throughout the country have typically allocated a large proportion of fixed costs to volumetric rate elements for residential and small commercial customers. This process starts with a more reasonable basic customer cost approach to cost classification. The Company already uses a volumetric energy distribution charge that could help carry whatever revenue requirement is properly allocated to residential and commercial secondary customers, after backing out increases due to the minimum system and B&G methods.

Q. Does the use of volumetric rates to carry fixed costs present a financial integrity risk to the utility that should be remedied with higher fixed charges?

A. No. First, the ratemaking principle is that rates should reflect costs, not be perfectly aligned with cost structure. There is no statistical likelihood of any real risk to the Company's financial integrity due to some customers using less energy than the utility had forecast in the interval between rate cases. The adverse impact on low use, low income, and fixed income elderly customers, as well as the economics of efficient use of energy, outweighs any hypothetical risk to the Company's earnings.

Q. Does the Company address any other opportunities to reduce the adverse impacts of its proposed fixed customer charge proposals?

A. No. In particular, the Company does not assess the impact of allocating its proposed revenue requirements to volumetric distribution charges. The proposed change in fixed customer charges for residential customers seeks to recover about $68,169 million in additional revenue, and a 155% increase in the customer charge. This is an extreme rate shock, especially for low users, many of whom are low income customers. Instead, assigning the revenue requirement to the volumetric energy charge would spread the increase across all energy use and cause an increase in the volumetric charge of only 1.3 cents, or about 11% above current rates. This is still a large increase, but a much more gradual increase than that proposed, and one that also avoids the regressive impact on low-income and low-use customers.

This is only one option for rate design that could preserve price signals and mitigate regressive and bad policy impacts. Modification of the 1NCP cost allocator would also reduce the volumetric charge for residential customers and thus the ultimate rate impact. The Company's failure to evaluate the option of reliance upon a volumetric charge suggests an unreasonable preoccupation with sunk costs and insufficient focus on the prospective impacts of its proposed rates.

Q. Why is it appropriate to continue recovering fixed costs through volumetric rates?

A. It is appropriate because of the price signal function of properly designed rates. Properly designed rates *reflect* properly allocated costs *and* send signals for efficient consumption in the future. Sunk fixed costs, the focus of the Company's concern in its customer charge proposal, can be reflected in *either* the fixed charge or a volumetric charge. An efficient price signal relating to future fixed costs can *only* be communicated with a volumetric charge. That is why a volumetric charge is the optimal rate design in this case.

Q. Does volumetric charge recovery of fixed costs violate principles of ratemaking or sub-optimize the economic efficiency of rates?

A. No. Sound ratemaking is based on ensuring that costs are properly allocated to customer classes based on cost causation. I know of no ratemaking or economic principle that finds that cost *structure* must be replicated in rate *design*, especially when significant negative policy impacts are attendant to that approach. Traditional ratemaking limits customer charges to certain basic customer connection costs—the meter, billing services, and other similar general and administrative costs. These are fixed costs that vary by customer count and typically form the basis and limit for fixed customer charges. Even so, when the policy impacts discussed above are considered, some of these costs are collected through variable charges.

Q. When costs associated with distribution systems are classified as fixed, should they be collected through the fixed customer charge?

A. Not necessarily, and not if the result is that low-usage customers are disproportionately impacted or that adverse impacts on energy efficiency, conservation, and renewables also result. Recently in other states, some utilities have argued that increased fixed customer charges secure revenue recovery in a world where customers have more options to reduce their level of usage. I am not aware of any evidence or analysis, and see none in this record, that increasing fixed customer charges improves system-wide economic efficiency or the efficiency of *customer* decisions. Absent evidence of system-wide or customer efficiency benefits, fixed customer charges should not be increased and costs should instead be allocated to variable charges. Again, the differences in costs that lead to labeling them as fixed or variable do not, standing alone, tell us anything about the rate design that should be used to recover them.

Q. What is the key difference between fixed and variable costs?

A. The key discriminator for labeling a cost as fixed or variable is the element of time. It is important to remember that over the long term, all costs are variable; just as over the very short term, one could argue all costs are fixed. For example, distribution transformers are typically treated as a fixed cost because of their relatively long life. Loading on a transformer, especially during periods of high demand, will impact its useful life. As a result, demand reductions can extend the useful life of transformers.

Q. How do residential customers exercise control over their variable and fixed costs?

A. The benefit of using volumetric rates to recover both fixed and variable costs is that class costs are still properly reflected in rates, and that customers have meaningful, practical, and realistic opportunities to exercise control over their energy bills and costs. Reductions in use—through efficiency, conservation, or self-generation—all contribute to reductions in variable energy costs. Moreover, these behaviors also reduce high peak demand, and by doing so customers directly contribute to reduced fixed costs going forward. Efficiency, demand response, west-facing solar, and other options allow customers to contribute to fixed cost reduction, and all of these are frustrated by shifting cost recovery from volumetric to fixed charges, as proposed by the Company.

Q. If the utility has costs that it classifies as fixed, should the charge to recover those costs be a fixed charge, in order to send a price signal to customers?

A. No. There is no meaningful price signal in charging a rate that few if any customers can effectively respond to with modification in behavior. Residential and small commercial customers have only limited options for changing their demand independently of their energy use; so volumetric energy rates are the best rate design option for sending price signals for both energy and demand cost causation on a going-forward basis. A customer's demand, especially for low-income and low-use customers, is a function of the energy performance of their home, which is often rented; their major appliances, which are often expensive to replace or upgrade; and the weather. Imposing high fixed costs on these customers is the economic regulation equivalent of suggesting to customers, "Let them eat cake."

Q. What is your recommendation for a rate design that would recover increased costs that the Company proposes to collect through increased fixed customer charges?

A. The prudent costs that the Company proposes to allocate to fixed customer charges should be allocated to volumetric rate elements unless and until the Company demonstrates the reasonableness of its proposed rate design in light of the potential adverse impacts discussed, and after consideration of the relative impacts of alternative rate designs.

Q. Do increased fixed charges impact volumetric charges?

A. Yes. The Company proposes in this case a direct shift of volumetric revenues to fixed customer charges. Allocating costs to fixed charges means that these costs are not allocated to volumetric charges. Volume of consumption is the most important aspect of electricity over which customers have control, so long as they choose to take any service at all. Lower volumetric charges weaken the short- and mid-term price signal customers receive relating to their consumption. In this way, increased fixed charges are economically equivalent to and exacerbate the uneconomic behavior encouraged by declining block electric rates.

Q. What impact does the combination of higher fixed charges and lower volumetric charges have on consumption behavior, and what does that mean for rates?

A. Allocation of costs to fixed, non-bypassable charges instead of volumetric charges reinforces the very consumption behavior that drives revenue requirements higher. Lower volumetric charges send a weaker signal to customers to take the kind of action that can, over the long term, reduce coincident peak demand and production, and transmission costs. Again, increased fixed charges are economically equivalent to and exacerbate the uneconomic behavior encouraged by declining block electric rates.

Q. Are there other options for the Company to explore in rate restructuring?

A. Yes. Other options include much more careful analysis of the B&G method.

- If the Company believes customers would like a higher fixed monthly charge in order to obtain an improvement in monthly bill stability, they should offer the rate in a limited pilot, alongside rates like the optional 3-part rate with demand charges.

- If the Company believes there are inequitable intra-class subsidies under current rates, it should conduct the data collection and analysis to substantiate its beliefs. If the subsidies exist, the Company could propose class segmentation to address these inequities.
- The Company has existing optional time-varying rates, including a time of use rate and an experimental critical peak pricing rate. If the Company believes that it is important to engage customers in demand cost reducing behavior, it could evaluate whether one of these rates should be made the standard rate (while retaining the current standard rate as an option). Of course, such rates would be highly ineffective unless customers were also provided real-time information about consumption and technology with which to control and reduce load.
- Another method for engaging customers in demand cost reducing behavior would be for the Company to foster the expansion of demand response and demand reduction aggregation programs.

These and other options would address the root causes that are driving the Company's efforts to restructure rates, but without regressive and punitive impacts on customers facing the highest energy burdens. Finally, the Company could propose a comprehensive agenda of utility transformation in order to address the fundamental financial flaws in the throughput-based business model the utility currently operates under.

Q. Does the Company have adequate systems in place to enable customers to respond to rates?

A. No. The Company has expressed intentions to provide customers with historical and, eventually, real-time information about demand at some unspecified point in the future.

But adding insult to bill injury, the Company proposed to roll out even optional demand charge and time-variable rates without also providing customers with the tools to effectively manage their energy use. The Company must deploy customer functionality before it deploys rates that are built around responses to price signals. Otherwise the Company is proposing nothing more than the extraction of monopoly rents.

THE BIGGER PICTURE

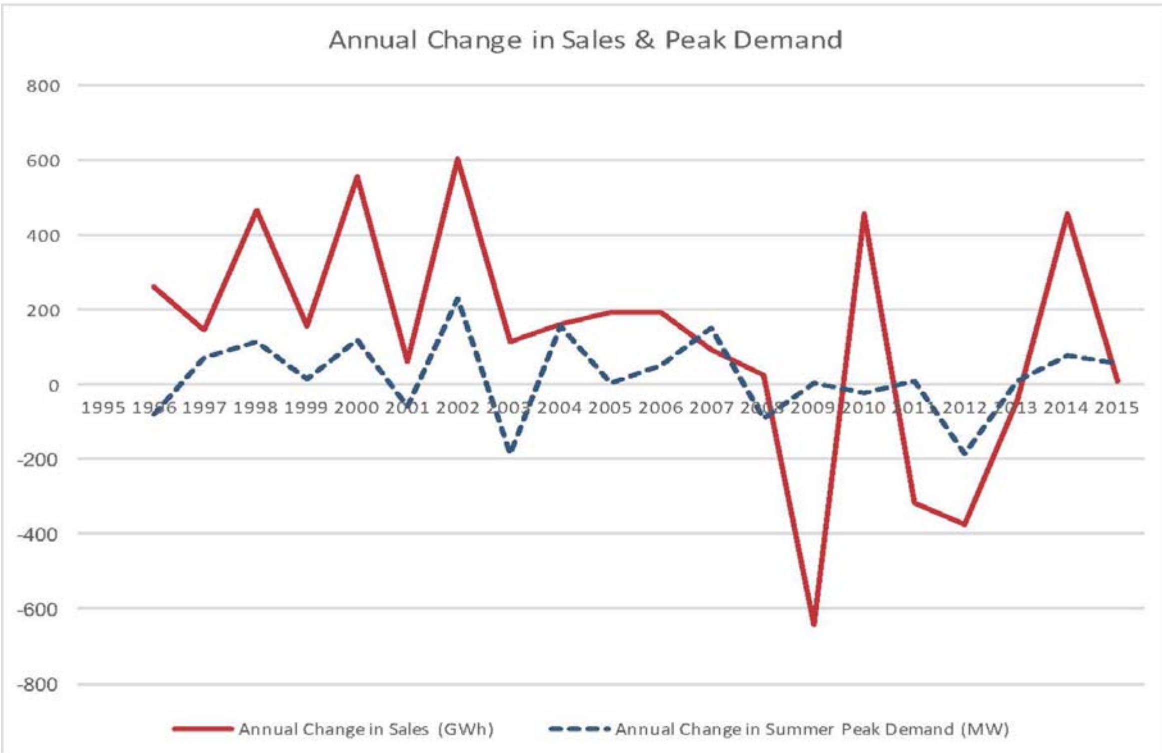
Q. Is there a broader context that explains the Company's effort to impose such regressive and unjustified residential rate changes?

A. The Company finds itself in a similar situation as many electric utilities in the United States and around the world. The Company is operating under a business model that brings profitability and shareholder wealth only with relatively constant increases in throughput—sales of kilowatt hours.

Q. What have been the long-term trends in energy sales and demand for the Company?

A. Based on data in the Company's 10-year site plans, the real volatility problem is in changes in energy sales and demand over the past 20 years. Figure KRR-8 shows that while there were major changes in and around the economic recession in 2008, the Company has long been impacted by severe volatility in energy and demand.

Figure KRR-8: Year over Year Changes in Retail Sales and Peak Summer Demand



Source: Gulf Power Company 10-years Plans for 2005, 2010, 2016.

Q. Given this volatility, is it reasonable for the Company to attempt to stabilize its revenues through the implementation of a massive increase in fixed customer charges and a shifting of fixed demand-related costs to the customer component of costs?

A. No. It is understandable that the Company would try to fix its larger problems with rate restructuring, but it is not reasonable. The sales and demand volatility that the Company faces can only be addressed by focusing on the root causes of that volatility, and not upon the revenue flow symptoms.

Q. Where should the Company commit its focus, in order to address the root causes of its sales and demand volatility?

A. The Company should be working with customers to improve overall load factor through deep dive energy efficiency and demand reduction programs. The Company should expand its efforts beyond the few thousands of customers it identifies as potential participants in its expanded DSM programs and seek transformational change in the way its customers use energy. Punitive rate restructuring that gives customers no real control over a large fraction of their bills is counterproductive to this transformation. The evidence does not demonstrate a significant residential intra-class subsidy problem. A simple review of the facts does show that the Company has a serious sales and demand volatility problem. On behalf of the public interest and the Company's shareholders, the Company should address the core causes of its problems and not just propose a rate design band aid.

CONCLUSION

Q. What are your findings regarding the Company fixed customer charge proposals?

A. My findings are summarized as follows:

- The Company's proposal to expand the scope of fixed customer charges for residential rate classes to include demand charges is at odds with long-established principles of regulatory ratemaking practice.
- The Company has offered a deeply flawed and unsubstantiated argument in an effort to justify an unprecedented request to increase fixed customer charges for residential rate classes.
- The Company has selected cost classification and allocation methods that result in unreasonably high customer costs for residential customers.
- The Company has proposed a low-income subsidy program and enhanced energy efficiency programs that do not meaningfully address the many problems that would be created by the proposed residential rate restructuring.

- The Company has failed to adequately consider the adverse impacts that its proposed fixed customer charges would have on low income customers, economic efficiency, energy efficiency, conservation, and renewable energy.

Q. How would you describe the Company proposal in broad economic terms?

A. The Company seeks the Commission's assistance in monopoly rent-seeking. That is, the Company wants to increase its wealth via guaranteed returns granted by the Commission through fixed customer charges that flow from a series of cost classification and allocation proposals.

Q. Why does it matter that the Company has not justified its rate design proposals regarding fixed customer charges?

A. The decisions about how to allocate class costs to rates through rate design involve important concerns relating to affordability, price signals, and congruence with state energy policy. The Company's foundation for its residential rate proposals is inadequate in light of the significant repercussions for customers and the State generally, and it is therefore neither just nor reasonable. In my opinion, the Company's proposals fail to meet the legal and regulatory burden the Company faces, and should be disapproved.

RECOMMENDATIONS

Q. What are your recommendations to the Commission?

A. Based on my review of the evidence in this case, I make several recommendations:

- The Commission should not approve the Company's proposal to increase fixed customer charges applicable to Residential customers, and should direct that any approved revenue requirement associated with those proposed rate changes be allocated to the volumetric energy charges.
- The Commission should not approve the Company's use of the minimum system

approach for classifying customer costs and should direct the Company to employ an approach that assigns to the customer cost category those costs that vary solely or predominantly with changes in the customer count.

- The Commission should not approve the Company's proposal to use a 1NCP allocator for demand-related distribution costs, and should direct the Company to evaluate allocators that use many more hours in the non-coincident peak of customer classes or groups.

Q. Does this conclude your testimony?

A. Yes.

(Transcript continues in sequence with Volume 5.)

STATE OF FLORIDA)
: CERTIFICATE OF REPORTER
COUNTY OF LEON)

I, LINDA BOLES, CRR, RPR, Official Commission Reporter, do hereby certify that the foregoing proceeding was heard at the time and place herein stated.

IT IS FURTHER CERTIFIED that I stenographically reported the said proceedings; that the same has been transcribed under my direct supervision; and that this transcript constitutes a true transcription of my notes of said proceedings.

I FURTHER CERTIFY that I am not a relative, employee, attorney, or counsel of any of the parties, nor am I a relative or employee of any of the parties' attorney or counsel connected with the action, nor am I financially interested in the action.

DATED THIS 22nd day of March, 2017.

Linda Boles

LINDA BOLES, CRR, RPR
Official FPSC Hearings Reporter
Office of Commission Clerk
(850)413-6734