Exhibit No:	
Issue:	**ROE**
Witness:	**Pauline M. Ahern, CRRA**
Type of Exhibit:	**Surrebuttal Testimony**
Sponsoring Party:	**Laclede Gas Company (LAC), Missouri Gas Energy (MGE)**
Case Nos.:	**GR-2017-0215** **GR-2017-0216**
Date Prepared:	**November 21, 2017**

LACLEDE GAS COMPANY
MISSOURI GAS ENERGY

GR-2017-0215
GR-2017-0216

SURREBUTTAL TESTIMONY

OF

PAULINE M. AHERN, CRRA

NOVEMBER 2017

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INTRODUCTION

Q. PLEASE STATE YOUR NAME, AND BUSINESS ADDRESS.

A. My name is Pauline M. Ahern. I am an Executive Director of ScottMadden, Inc. My business address is 1900 West Park Road, Suite 250, Westborough, MA 01581. My mailing address is 3000 Atrium Way, Suite 241, Mount Laurel, NJ 08054.

Q. ARE YOU THE SAME PAULINE M. AHERN WHO PREVIOUSLY SUBMITTED DIRECT AND REBUTTAL TESTIMONIES TO THE MISSOURI PUBLIC SERVICE COMMISSION ("MOPSC" OR "THE COMMISSION") IN THESE PROCEEDINGS?

A. Yes, I am.

PURPOSE OF TESTIMONY

Q. WHAT IS THE PURPOSE OF THIS TESTIMONY?

A. The purpose of this testimony is to respond to the rebuttal testimonies of MOPSC Staff Witness David Murray ("Mr. Murray"), as well as the rebuttal testimony of the Office of Public Counsel ("OPC")/Missouri Industrial Energy Consumers ("MIEC") Witness Mr. Michael P. Gorman ("Mr. Gorman"). Specifically, I will address Mr. Murray's criticisms of my common equity cost rate analysis. I will also address criticisms of Mr. Gorman relative to my discussion of the appropriate ratemaking capital structure for Laclede Gas Company ("LGC") and Missouri Gas Energy ("MGE") (collectively "the Companies") well as my recommended common

equity cost rate. In addition, because I may not have addressed each comment by Mr. Murray and Mr. Gorman relative to my rebuttal testimony, it should not be inferred that I am in agreement with those additional comments. Finally, I will provide comments relative to the Companies' requested Revenue Stabilization Mechanism ("RSM") and the upward trend in the authorized returns on equity being granted by state utility commissions in other jurisdictions.

Q. HAVE YOU PREPARED SCHEDULES IN SUPPORT OF YOUR SURREBUTTAL TESTIMONY?

A. Yes, I have. They have been marked for identification as Schedule PMA-SR1 and Schedule PMA-SR2.

RESPONSE TO MOPSC STAFF WITNESS DAVID MURRAY'S REBUTTAL TESTIMONY

Common Equity Cost Rate

Discounted Cash Flow ("DCF")

Q. MR. MURRAY CLAIMS THAT YOU STATE THAT YOUR "DCF RESULTS ARE NOT RELIABLE BECAUSE UTILITY STOCK PRICES ARE TRADING AT HIGH MULTIPLES TO THEIR BOOK VALUES" AND THAT YOU DISMISS "LOWER DCF COST OF

ESTIMATES IN SETTING A UTILITY'S ALLOWED ROE."[1] PLEASE COMMENT.

A. First, I did not dismiss "lower DCF cost estimates" in developing my recommendation. Had I done so, my estimation of a recommended return on common equity ("ROE") for MGE and LAC based upon my Natural Gas Proxy Group (before adjustment for flotation costs and business risk), would have been 10.20%, rather than 10.00%. After adjustment, my recommended ROE would have been 10.57%, rounded to 10.55%, rather than 10.35%. Clearly, I did not dismiss the results of my DCF analysis.

I also never claimed that my DCF results were not "reliable." The only time I used the word "reliable" in either my direct or rebuttal testimonies was in reference to the "provision of safe, adequate and reliable natural gas service."[2] However, I did state that "[t]he DCF model has a tendency to mis-specify the investor required common equity return rate when the market value of common stock differs significantly from its book value"[3] and "the 'simplified' or constant-growth DCF model has a tendency to mis-specify the investor required common equity return rate when the market value of common stock differs significantly from its book value."[4] I also demonstrated the extent to which the DCF mis-specifies, in this instance understates, the investor required return when applied to book value, concluding that "it

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1 Rebuttal Testimony of David Murray (hereinafter "*Murray*") at 11, lines 6 – 10 & 12, lines 1 – 2.

2 Direct Testimony of Pauline M. Ahern (hereinafter "*Ahern Direct*") at 53, line 19.

3 *Ahern Direct* at 22, lines 1 – 2.

would be inappropriate to give any greater weight to the DCF analysis than I already have in deriving my multi-model return on equity recommendation."[5]

In addition, I am not alone in suggesting that the DCF mis-specifies the investor required return on common equity when market-to-book ratios differ from unity. My rebuttal testimony cited several academicians who provide corroboration:

- Phillips:[6]

> [T]he DCF model "suggests a degree of precision which is in fact not present" and leaves "wide room for controversy and argument about the level of K".

- Morin:[7]

> The inability of the DCF model to account for changes in relative market valuation, discussed below, is a vivid example of the potential shortcomings of the DCF model when applied to a given company.
>
> No one individual method provides the necessary level of precision for determining a fair return, but each method provides useful evidence to facilitate the exercise of informed judgment.

- Morin, citing Myers:[8]

> Use more than one model when you can. Because estimating the opportunity cost of capital is difficult, only a fool, throws away useful information. That means you should not use any one model or measure mechanically and exclusively.

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4 Rebuttal Testimony of Pauline M. Ahern (hereinafter "*Ahern Rebuttal*") at 50, lines 20 – 22.
5 *Ahern Direct* at 26, lines 7 – 8.
6 *Ahern Rebuttal* at 21, lines 19 – 24.
7 *Ahern Rebuttal* at 22, lines 14 – 17 & 21 – 23.

- Brigham and Gapenski:[9]

> People experienced in estimating equity capital costs recognize that both careful analysis and some very fine judgments are required. It would be nice to pretend that these judgments are unnecessary and to specify an easy, precise way of determining the exact cost of equity capital. Unfortunately, this is not possible.

- Brigham and Daves:[10]

> Recent surveys found that the CAPM approach is by far the most widely used method. Although most firms use more than one method, almost 74 percent of respondents in one survey, and 85 percent in the other, used the CAPM.[12] (footnote omitted)
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> * * *
>
> Approximately 16 percent now use the DCF approach, down from 31 percent in 1982.

Q. MR. MURRAY ALSO CLAIMS[11] THAT "[U]TILITY STOCK MARKET VALUES ARE HIGH IN THE CURRENT MACROECONOMIC ENVIRONMENT DUE TO THE FACT THAT THE COST OF CAPITAL IS LOW." PLEASE COMMENT.

A. The market values of utility common stocks are high in the current macroeconomic environment because interest rates are low. The cost of capital as estimated by market-based financial models appear low because of these high market valuations in conjunction with current and expected

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8 *Ahern Rebuttal* at 23, lines 4 – 7.
9 *Ahern Rebuttal* at 23, lines 33 – 37.
10 *Ahern Rebuttal* at 24, lines 1 – 11.
11 *Murray Rebuttal* at 11, lines 8 – 10.

historically lower interest rates. The DCF model is affected by lower than usual dividend yields, while risk premium models, such as the Capital Asset Pricing Model ("CAPM") are affected by low interest rates as one of their components. These models only produce estimates of the cost of common equity, because the cost of common equity, i.e. the investor required return on common equity is not directly observable in the market.

Q. PLEASE EXPLAIN.

A. The currently low interest rate environment has been and continues to be engineered by central bank intervention, notwithstanding the Federal Reserve's ("Fed") initiating quantitative easing and beginning to raise its benchmark Federal Funds ("Fed Funds") rate. This central bank engineering has led some analysts to the conclusion that current capital costs are low and will continue to be so. This conclusion only holds true under the hypothesis of Perfectly Competitive Capital Markets ("PCCM") and the classical valuation framework which, under normal economic and capital market conditions, underpin the traditional cost of common equity models.[12] PCCM are capital markets in which no single trader, or "market-mover", would have the power to change the prices of goods or services, including bond and common stock securities. In other words, under the PCCM hypothesis, no single trader would have a significant effect on market prices.

Classic valuation theory assumes that investors trade securities rationally at prices reflecting their perceptions of value. Although the Fed

has always had the ability to set benchmark interest rates, it has been maintaining below normal interest rates in an attempt to stimulate continued economic and capital market recovery. Therefore, it is reasonable to conclude that the Fed, and other central banks are acting as market-movers, which has a significant effect on the market prices of both bonds and stocks in all markets where a central bank is maintaining historically low interest rates. The presence of market-movers, such as the Fed, in current capital markets runs counter to the PCCM, which is the foundation of the traditional cost of common equity models. The engineering of interest rates directly has affected and continues to affect the measurement of the cost of common equity.

Q. **

[12] Discounted Cash Flow., Risk Premium and Capital Asset Pricing Models.
[13] *Murray Rebuttal* at 14, line 3 to 15, line 2.

Predicted Risk Premium Model ("PRPM")

[14] Spire, Inc.'s November 19, 2014, Strategy Committee Meeting ("Strategy Committee") at 33.
[15] Strategy Committee at 33.
[16] Strategy Committee at 43.
[17] Strategy Committee at 33.
[18] Spire's DCF results as shown on Schedule PMA-D3 at 1

Q. **

[19] Mr. Murray does not identify the PwC report or the date of its publication. However, in reviewing the valuation analyses provided in response to MPSC Data Request 0191, the only report which including a 7.2% cost of common equity was the September 16, 2016, *Spire Inc.* | Impairment Analysis for Goodwill for Laclede Gas Company ("PwC – 9/16/16").

[20] *Murray Rebuttal* at 16, line 15.

[21] PwC – 9/16/16 at 17

[22] PwC – 9/16/16 Exhibits at 4.

[redacted]

[23] PwC – 9/16/16 at 36.

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Q. DO YOU HAVE ANY OTHER COMMENTS REGARDING MR. MURRAY'S DISCUSSION[25] OF YOU PRPM ANALYSIS?

A. Yes. It is clear that Mr. Murray neither understands the PRPM nor the academic publication process.

As previously discussed, [26]the PRPM derived equity risk premium is based on work published in the Journal of Regulatory Economics[27] and The Electricity Journal[28], which was developed from the work of Robert F. Engle, who shared the Nobel Prize in Economics in 2003, "for methods of analyzing economic time series with time-varying volatility (referred to as "ARCH", or autoregressive conditional heteroskedasticity). [29] Engle found volatility in market prices, returns, and equity risk premiums to change over time, and to be related from one period to the next. In addition, Engle discovered that volatility (usually measured by variance) in prices and returns clusters over time, making it highly predictable and useful in predicting future levels of risk and risk premiums.

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24 PwC – 9/16/16 at 22

25 *Murray Rebuttal* at 21, line 4 to 23, line 5.

26 *Ahern Direct* at 27, lines 9 – 15.

27 Pauline M. Ahern, Frank J. Hanley and Richard A. Michelfelder, Ph.D., *New Approach for Estimating the Equity Risk Premium for Public Utilities*, The Journal of Regulatory Economics, December 2011 (online publication August 2011), 40:261-278.

28 *Comparative Evaluation of the Predictive Risk Premium Model™, the Discounted Cash Flow Model and the Capital Asset Pricing Model*, Pauline M. Ahern, Richard A. Michelfelder, Ph.D., Rutgers University, Dylan W. D'Ascendis, and Frank J. Hanley, The Electricity Journal, May, 2013.

29 Source: www.nobelprize.org

The PRPM estimates the risk/return relationship as the predicted equity risk premium is generated by the prediction of volatility. The PRPM therefore is not based on an estimate of investor behavior, but on the evaluation of the actual results of that behavior, *i.e.*, the variance of historical equity risk premiums. Consequently, the equity risk premiums derived using the PRPM provide valuable and statistically robust insight into equity risk premium levels, and the cost of capital at any given point in time.

A New Approach for Estimating the Equity Risk Premium for Public Utilities empirically tested and applied a recently developed general consumption-based asset pricing model that estimates the risk-return relationship directly from asset pricing data (*i.e.*, common stock prices) and, when estimated with recently developed time series methods, produces a prediction of the equity risk premium that is driven by its predicted volatility. The predicted risk premium is then added to a risk-free rate of return to provide an estimate of the cost of equity. The model predicted two forms of the equity risk premium: the risk premium net of the risk-free rate, and the equity-to-debt risk premium (equity risk premium net of the relevant bond yield for the subject company's stock). Either can be applied to predict the cost of equity for a public utility. Although the model is tested and applied to public utilities for rate of return regulation, it can be used to estimate the cost of capital for any stock.

Unlike the traditional models for estimating the cost of equity, *i.e.*, Capital Asset Pricing Model ("CAPM"), Risk Premium Model ("RPM:") and Discounted Cash Flow Model ("DCF"), the Predictive Risk Premium Model PRPM rests on minimal assumptions and restrictions. Therefore, the PRPM requires considerably less judgment in it application than do other methods.

The PRPM does assume that when making their investment pricing decisions, investors will behave as they always have behaved. In addition, the PRPM is based on the economic, not financial, theory of investment decision making. That is, the model assumes investors seek to maximize the utility of the return on their investment in terms of dollars, not its magnitude in terms of percent.

As Engle discovered in his Nobel prize-winning research, the volatility of asset returns/risk premiums changes over time and is related to itself from one period to another. This characteristic is termed "ARCH" or Autoregressive Conditional Heteroskedasticity. That is, the volatility of asset prices/returns/risk premiums cluster over time and that high/low periods of volatility can be used to predict asset risk premiums, including common equity risk premiums for individual companies, indices, or the market as a whole. The PRPM therefore estimates the risk/return relationship directly, providing projections of the conditional equity risk premium on an asset based upon its relation to its prediction conditional volatility.

The first step in estimating the predicted equity risk premium is to estimate the PRPM, *i.e.*, GARCH, coefficients wherein predicted variances are calculated monthly for each security Moreover, the GARCH methodology is available in various statistical packages such as EViews©, SAS©, RATS, S-Plus and JMulti, which are not cost-prohibitive and provide instructions for using the various statistical methodologies in their software. Second, either the average predicted variances over the entire period over which the analysis was conducted can be calculated or averaged with the spot (last predicted variance), or the spot predicted variance alone is multiplied by the PRPM or GARCH coefficient for each security. Third, the product of the predicted variance multiplied by the GARCH coefficient is annualized, producing a security-specific PRPM derived equity risk premium. The PRPM derived equity risk premium then is added to an estimate of the relative bond yield (*e.g.*, a risk-free rate or corporate bond yield), producing a PRPM-derived cost of equity.

The benefits of the PRPM for ratemaking is that it reduces the need for subjective judgment. The only subjective judgment required in applying the model is the choice of the time period over which premium is estimated; and whether to use the average, spot or combination of average and spot predicted variances to estimate the risk premium. Note, however that, the co-authors of *A New Approach for Estimating the Equity Risk Premium for*

Public Utilities concluded that long-term average predicted variances and risk premiums are more stable than spot predicted variances and risk premiums.

Additional benefits are that the PRPM estimates the risk/return relationship directly because it does not rely upon a theoretical estimate of how investors behave in making their investment pricing decisions. Rather, the PRPM measures the actual pattern of that risk/return relationship, by using the results/outcomes of investor behavior, *i.e.*, market prices, in its estimation. Further, because it is statistically unbiased and based on the results of actual investor decisions, the PRPM provides an unbiased, prospective estimate of the cost of equity. Lastly, the PRPM produces reasonable and stable results.

Q. WHY DO YOU SAY THE MR. MURRAY DOES NOT UNDERSTAND THE ACADEMIC PUBLICATION PROCESS?

A. Mr. Murray's discussion of my response to Staff Data Request No. 431[30] makes it clear that he has no understanding of the academic publication process.

First, my response to Staff Data Request No. 431 did not say I "was not aware of any peer review" but rather that I do not have those reviews. The reviews were not retained as they requested minor changes / edits to the articles.

Second, even if I were not aware of any peer review, that does not mean I did not request one. Nor is it necessary for authors of such articles to

request peer reviews, because academic publications generally, and The Journal of Regulatory Economics and The Electricity Journal, specifically, require such peer reviews. The journals assign the reviewers, whose identity is not known to the authors, to review articles for submission to those academic journals. Once the reviewers have conducted their reviews of submitted articles, the reviews are provided to the authors to consider when revising the articles and re-submitting for further review. Alternatively, the peer review may recommend at the outset that the article(s) be rejected for publication. In the case of the two articles in question here, the peer reviews were positive, containing only minor revisions and edits.

Thus, it is clear that Mr. Murray has mischaracterized my response to Staff Data Request No. 431 and does not understand the academic peer review and publication process.

Q. RELATIVE TO YOUR PRPM ANALYSIS, MR. MURRAY ALSO CLAIMS THAT ITS "RESULTS ARE AT DIRECT ODDS WITH THE LONG-STANDING AND WIDELY-USED BETA COEFFICIENTS USED BY INVESTORS AND FINANCIAL PRACTITIONERS WHEN ESTIMATING THE COST OF EQUITY USING THE CAPM."[31] PLEASE COMMENT.

A. The CAPM and the PRPM are two different analytical processes. The CAPM is a specific form of the general risk premium plus bond yield model,

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30 *Murray Rebuttal* at 21, lines 8 – 17.

31 *Murray Rebuttal* at 22, lines 19 – 21.

which assumes that investors hold perfectly diversified portfolios and thus the only relevant risk to the cost of common equity is systematic or market risk affecting all common stocks and measured by beta. As such, the CAPM estimates how investors behave through the use of the CAPM model. The PRPM is an equity risk premium methodology using the previously discussed GARCH methodology. The GARCH methodology does not rely upon an assumption of how investors behave, e.g., holding perfectly diversified portfolios. In reality, some investors do hold such portfolios, e.g. an S&P 500 index fund, some do not, e.g., such as a money market fund, and some only hold a limited number of individual stocks. As previously discussed, the GARCH methodology, by using equity risk premiums which result from actual market prices, e.g., actual investor behavior as opposed to estimated, does not rely upon a theoretical estimate, such as a CAPM estimate, of how investors behave in making their investment pricing decision, but on their actual investment pricing decisions, i.e., market prices.

Therefore, any comparison between the cost of equity estimated using the CAPM and the PRPM is a comparison of apples and oranges. In fact, the PRPM does not estimate a cost of equity, but rather an equity risk premium to be used in either a CAPM or risk premium plus bond yield analysis.

Flotation Cost Adjustment

Q. PLEASE RESPOND TO MR. MURRAY'S RECOMMENDED REJECTION OF A FLOTATION COST ADJUSTMENT.[32]

A. Regardless of the reasons for Spire's issuance of common stock, the fact remains, as discussed in previous detail, the Companies' shareholder is entitled to receive recovery of its flotation costs just as the Companies are entitled to receive recovery of debt issuance expenses, since "there is no other mechanism in the ratemaking paradigm with which such costs can be recovered."[33] citing my direct testimony which cited literature which is clear that such costs are not reflected in the market prices paid by investors and therefor are not reflected in the cost of common equity models used by the rate of return witnesses in this proceeding, Mr. Murray, Mr. Gorman and myself.[34]

Business Risk Adjustment

Q. MR. MURRAY ASSERTS THAT YOUR BUSINESS RISK ADJUSTMENT SHOULD BE REJECTED BECAUSE IT IS "NOT BASED ON AN ANALYSIS OF THE REGULATED UTILITY INDUSTRY."[35] PLEASE COMMENT.

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32 *Murray Rebuttal* at 17, lines 1 - 19
33 *Ahern Direct* at 48, lines 3 – 5.
34 *Ahern Rebuttal* at 42, lines 5 – 7.
35 *Murray Rebuttal* at 18, lines 3 – 7.

A. As discussed previously,[36] since no proxy group is identical in risk to any single entity an assessment of relative risk between the Natural Gas Proxy Gropu and the Companies must be made to determine whether any adjustments to the Natural Gas Proxy Group's indicated common equity cost rate are necessary. Since size is a risk factor which must be taken into account, all else equal, the smaller collective size of the Companies relative to the group must be taken into account when arriving at a recommended return on common equity for the Companies.

While it is true that the size premium study is based upon all of the stocks in the New York Stock Exchange ("NYSE"), the American Stock Exchange ("AMEX") and the Nasdaq National Market ("Nasdaq"), all of the natural gas distribution utilities in all of the proxy groups used by Mr. Murray, Mr. Gorman and myself are traded on one of those exchanges. Therefore, they were included in the size premium study. Furthermore, my comparison of size premiums to determine a spread between the premiums were based upon the deciles in which the average market capitalization of my Natural Gas Proxy Group fell and in which the Companies collective estimated market capitalization fell. Hence, my size premium comparison was not between the Companies and the NYSE, AMEX and NASDAQ. Mr. Murray's criticism is invalid and without support.

[36] *Ahern Direct* at 4, lines 3 – 20.

Q. * * _____

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Projected Risk-Free Rate

Q. MR. MURRAY DOES NOT AGREE WITH YOUR USE OF A PROJECTED RISK-FREE RATE.[37] PLEASE COMMENT.

A. As discussed previously,[38] both the determination of the cost of capital and ratemaking are prospective in nature. Therefore, events that affect the future, impact market activity, volatility and investor expectations and are therefore relevant to the determination of the cost of common equity. Consequently, any comments regarding the fact that the prospective bond yield exceeds current observable bond yields are irrelevant. Market prices are a function of investors' expectations of the future, including analysts' expectations. Thus, the MOPSC should rely upon forecasted interest rates in both an RPM and a Capital Asset Pricing Model ("CAPM") analysis.

Income versus Total Return on Long-Term U.S. Treasury Bonds

[37] *Murray Rebuttal* at 23, lines 7 – 10.

[38] *Ahern Rebuttal* at 25, line 4, 28, lines 19 – 22, and 68, line 20

Q. MR. MURRAY CLAIMS THAT BY USING THE INCOME RETURN ON LONG-TERM U.S. TREASURY BONDS, YOU HAVE UPWARDLY BIASED THE ESTIMATED EQUITY RISK PREMIUM IN YOUR PRPM ANALYSIS.[39] PLEASE COMMENT.

A. My rebuttal testimony detailed why it is appropriate to use the income return on long-term U.S. government bonds for cost of capital purposes.[40]

To reiterate Duff & Phelps, 2017 SBBI Yearbook | Stocks, Bonds, Bills, and Inflation | U.S. Capital Markets Performance by Asset Class 1926 – 2016 ("SBBI – 2017")[41] which corroborates the use of the income returns on U.S. long-term government bonds when they state:

> Another point to keep in mind when calculating the equity risk premium is that the income return on the appropriate-horizon Treasury security, rather than the total return, is used in the calculation. The total return is comprised of three return components: the income return, the capital appreciation return, and the reinvestment return. The income return is defined as the portion of the total return that results from a periodic cash flow or, in this case, the bond coupon payment. The capital appreciation return results from the price change of a bond over a specific period. Bond prices generally change in reaction to unexpected fluctuations in yields. Reinvestment return is the return on a given month's investment income when reinvested into the same asset class in the subsequent months of the year. *The income return is thus used in the estimation of the equity risk premium because it represents the truly riskless portion of the return*.[2] (footnote omitted) (italics added)

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39 *Murray Rebuttal* at 23, lines 13 – 20.

40 *Ahern Rebuttal* at 29, line 30 to 30, line 22.

41 Duff & Phelps, 2017 SBBI Yearbook | Stocks, Bonds, Bills, and Inflation | U.S. Capital Markets Performance by Asset Class 1926 – 2016, Wiley 2017, at 10-22.

Additionally, in an article entitled "Equity Risk Premium Article"[42] Annin and Falaschetti state:

> Yields have been rising generally over the period 1926-1996 causing negative capital appreciation on the long-term bond series. This negative return is due to the risk of unanticipated yield changes. Any anticipated changes in yields will already be priced by the market into the bond. Therefore, the total return on the bond series does not represent the riskless rate of return. It includes the effects of unanticipated interest rate changes. The income return better represents the riskless rate of return since an investor can hold a bond to maturity and be certain of obtaining the income return and return of principal with no capital loss.

Hence, it is appropriate to use the income return and not the total return on long-term U.S. government bonds as the risk-free rate for cost of capital purposes.

Q. DO YOU AGREE THAT USING THE INCOME RETURN ON LONG-TERM U.S. GOVERNMENT BONDS UPWARDLY BIASES THE PRPM DERIVED MARKET EQUITY RISK PREMIUM?

A. No. Mr. Murray asserts that I should have used the total return on long-term U.S. government bonds in estimating the equity risk premium using the PRPM methodology, to capture the effect of price changes on bonds. To test that assertion, I estimated PRPM derived market equity risk premiums using the total return as well as the income return on long-term U.S. government bonds for 1926-2016. The results are shown on Schedule PMA-SR1. As shown, the PRPM derived market equity risk premium using total returns is 8.55%, while the market equity risk premium using income returns is 7.35%, more than 100 basis points

[42] "Equity Risk Premium Article", Michael Annin, CFA and Dominic Falaschetti, CFA,

lower. Therefore, it is the use of total returns on long-term U.S. government bonds which upwardly biases the market equity risk premium, because the total return does not reflect the truly risk-free portion of the return on long-term U.S. government bonds.

This is corroborated when the standard deviations of the total returns and the income returns on long-term U.S. government bonds are compared. SBBI – 2017 reports that the standard deviation of the total return on long-term U.S. government bonds over 1926 – 2016 was 9.9%, while only 2.6% for the income return.[43] It is logical that when the total return on large company common stocks with a 19.9% standard deviation[44] is combined with the total return on long-term U.S. government bonds with a standard deviation of 9.9%, that the resultant market equity risk premium will be more volatile than the market equity risk premium derived using the total return on those large company common stocks and the income return on long-term U.S. government bonds with its lower 2.6% standard deviation.

In view of the foregoing, Mr. Murray is incorrect that my PRPM methodology "results in an upward bias in the estimated required risk premium"[45]

Q. MR. MURRAY ALSO DISCUSSED ARITHMETIC VERSUS GEOMETRIC EQUITY RISK PREMIUMS.[46] PLEASE COMMENT.

Ibbotson Associates.

43 SBBI – 2017 at 6-17.

44 SBBI – 2017 at 6-17.

45 *Murray Rebuttal* at 23, lines 17 – 18.

46 *Murray Rebuttal* at 23, line 21 to 24, line 20

A. My rebuttal testimony clearly demonstrated that the arithmetic mean, and not the geometric mean is appropriate for cost of capital purposes.[47] Therefore I will not repeat that discussion here.

RESPONSE TO OPC/MIEC WITNESS MICHAEL P. GORMAN'S REBUTTAL TESTIMONY

Capital Structure

Q. PLEASE COMMENT UPON MR. GORMAN'S DISCUSSION OF YOUR SUPPORT FOR THE COMPANIES' PROPOSED CAPITAL STRUCTURE.

A. Mr. Gorman implies that I have not shown the Companies' proposed capital structure "to be reasonable for ratemaking purposes."[48] Mr. Gorman is incorrect. My rebuttal testimony demonstrated that the Companies' proposed capital structure is independent of its corporate parent, Spire, as any issuance of debt by LAC/MGE, which must be approved by the MOPSC, is issued to outside investors and is secured by the assets of LAC/MGE alone.[49] In addition, my rebuttal testimony also demonstrated that the proposed capital structure represents the actual dollars financing the Companies' respective jurisdictional rate bases, where Spire's capital structure includes both debt and common equity financing the rate bases of Alabama Gas Corporation ("Alagasco") and the acquired subsidiaries of EnergySouth as well as Spire

47 *Ahern Rebuttal* at 30, line 25 to 34, line 7 and Schedule PMA-R9.
48 Rebuttal Testimony of Michael P. Gorman's (hereinafter *"Gorman Rebuttal")* at 8, line 19 to 9, line 20.
49 *Ahern Rebuttal* at 4, lines 5 – 18.

Marketing's and the currently being developed Spire STL Pipeline operations and assets.[50] My rebuttal testimony also demonstrates that the proper comparison of capital structures is between the Companies' proposed capital structures and the actual, not allowed, capital structures of other natural gas companies, such as those relied upon by each rate of return witness in this proceeding.[51] Also, the inclusion of short-term debt in the ratemaking capital structure is not appropriate as discussed by Company Witness Glenn Buck ("Mr. Buck") in his rebuttal testimony.

Proposed Size Adjustment Adder

Q. PLEASE COMMENT UPON MR. GORMAN'S DISCUSSION OF YOUR PROPOSED SIZE ADJUSTMENT ADDER.

A. Mr. Gorman's criticisms are invalid and unfounded. Mr. Gorman suggests that by using the income returns I am biasing the resultant risk premiums because I am not recognizing the return volatility realized by changes in bond prices. To recognize the return volatility realized by changes in bond prices renders the use of 30-year U.S. Treasury bonds risky and not risk-free.

Mr. Gorman claims that such an adjustment is unreasonable[52] and contains "fundamental errors and flaws" in its "quantitative estimate and logic."[53] First, Mr. Gorman is correct that the Companies are not publicly traded. However, all the rate of return witnesses in this proceeding, Mr.

50 *Ahern Rebuttal* at 6, line 12 to 7, line 10.
51 *Ahern Rebuttal* at 9, line 12 to 10, line 13.
52 *Gorman Rebuttal* at 20, line 5 to 21, line 11.
53 *Gorman Rebuttal* at 20, lines 5 – 6.

Murray, Mr. Gorman and myself, have relied upon the market data of proxy groups of natural gas distribution utilities to estimate an appropriate ROE for the Companies. The proxy groups' average market-to-book ratios are based upon the same market data used to estimate those ROEs. Therefore, it is both logical and reasonable, and not "purely conjecture," to estimate the Companies' respective market capitalizations based upon the proxy groups' average market-to-book ratios.

Second, Mr. Gorman is incorrect that the "service agreement and costs related to this affiliate transaction mitigate Laclede/MGE's stand-alone investment risk."[54] The stand-alone investment risk of the Companies is not mitigated by the service agreement. Rather, it is the effect of the Companies' stand-alone investment risk on ratepayers which is mitigated through lower costs passed on through lower than otherwise rates. If the Companies were stand-alone entities without such an agreement, their collective investment risk would remain the same, as the collective risk of their respective operations and rate bases would be the same, but the associated costs would be higher. Hence, it is the effect of the Companies' greater investment risk due to their small collective size relative to the proxy groups, and not their collective investment risk itself, which is mitigated.

Third, Mr. Gorman asserts that when using the Duff & Phelps size premium, one must include the Duff & Phelps industry risk premium as well. Since the Companies are being compared to utilities in the same industry, it

would be inappropriate to apply an industry risk premium, since there is no difference in relative industry risk. Since the Companies are smaller, in terms of estimated market capitalization, than the natural gas distribution utilities in all of the proxy groups, used by Mr. Murray, Mr. Gorman and myself, a relative risk adjustment based upon size still needs to be added. Moreover, Duff & Phelps specifically state the following relative to industry risk premiums:[55]

> Industry risk premium[s] should not be used within the context of the CAPM or any other method of cost of capital estimation that already has beta, because by doing so you will be double-counting beta risk.

Hence, Mr. Gorman is incorrect to recommend the rejection of a business risk adjustment based upon the Companies' smaller collective size relative to the proxy groups.

Flotation Cost Adjustment

Q. MR. GORMAN ALSO REJECTS YOUR FLOTATION COST ADJUSTMENT.[56] PLEASE COMMENT.

A. Mr. Gorman claims that I have not considered "that not all common equity for Laclede/MGE American [sic] is derived from public stock issuances."[57] It is not necessary to consider all of the common equity outstanding, which

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54 *Gorman Rebuttal* at 20, line 11 to 21, line 11.
55 Duff & Phelps, 2017 Valuation Handbook | U.S. Guide to Cost of Capital | Market Results Through 1926 – 2016, Wiley 2017 at 5-19.
56 *Gorman Rebuttal* at 22, line 8 to 23, line 19.
57 *Gorman Rebuttal* at 22, line 23 to 23, line 1

includes common stock, paid-in-capital and retained earnings, because common stock issuance expenses relate solely to the amount of common stock being issued at any given time. Therefore, it is entirely appropriate to estimate a flotation cost adjustment based upon common stock issuance costs as a percentage of a specific issuance of common stock. It is not appropriate to relate those issuance costs to all common equity, including retained earnings. Thus, a flotation cost adjustment of 16 basis points is entirely correct.

Mr. Gorman also states that my flotation cost adjustment justifies rejection of a small company size premium.[58] While the Companies' common stock is not publicly traded and my flotation cost adjustment is based upon Spire's access to equity markets, Spire, the Companies' shareholder is entitled to receive recovery of its flotation costs just as the Companies are entitled to receive recovery of debt issuance expenses, since "there is no other mechanism in the ratemaking paradigm with which such costs can be recovered."[59]

In view of the foregoing, Mr. Gorman's recommendation that my flotation and business risk adjustments not be adopted by the MOPSC should be rejected.

Discounted Cash Flow ("DCF")

[58] *Gorman Rebuttal* at 23, lines 10 – 16.
[59] *Ahern Direct* at 48, lines 3 – 5.

Q. DO YOU AGREE WITH MR. GORMAN THAT THERE HAS NOT BEEN A DRAMATIC RISE IN INTEREST RATES AND CAPITAL COSTS?

A. Yes. That phrase will be deleted from my prepared direct testimony at hearings. Note that the phrase does not appear in my rebuttal testimony, to which Mr. Gorman's surrebuttal testimony purports to respond.

I also acknowledge that capital costs, as measured by the results of financial models, such as the DCF, RPM and CAPM, indicate that common equity costs are also low. However, as discussed above, this is a result of the currently low interest rate environment engineered by the Fed.

Q. EXPLAIN, ONCE AGAIN, YOUR POSITION RELATIVE TO THE RESULTS OF THE DCF MODEL.

A. As discussed above, I do not reject the results of the DCF model as unreasonable or uninformative to the estimation of an ROE applicable to the Companies. That being said, the DCF has always had a tendency to mis-specify the investor required return on common equity in a rate setting, where the ROE derived from market-based models, such as the DCF, RPM and CAPM, is applied to a book value rate base and capital structure to determine rates. Because market-to-book values have a general tendency to differ from unity, or 1, the DCF will understate the investor required ROE when applied to a book value when market-to-book ratios exceed unity and overstate the investor required ROE when applied to a book value when market-to-book

ratios are less then unity. Nor do I recommend rejecting the DCF results in this instance, but rather that this tendency be kept in mind when recommending or authorizing a regulatory ROE. In addition, this tendency of the DCF can be mitigated through the use of multiple properly applied market-based cost of common equity models.

Q. DO YOU HAVE ANY COMMENT RELATIVE TO MR. GORMAN'S DISCUSSION OF THE BOND-LIKE NATURE OF NATURAL GAS UTILITY DIVIDEND YIELDS?

A. Mr. Gorman's discussion is irrelevant to the estimation of an appropriate ROE for the Companies. Given that capital markets and the economy are currently in a low interest rate environment engineered by the U.S. Federal Reserve Bank ("Fed") which "has used its balance sheet most recently to maintain downward pressure on long-term interest rates, to support the mortgage markets, and to help create or maintain accommodative financial conditions."[60] In doing so, "Securities Held Outright" on the Federal Reserve's balance sheet increased from approximately $490 billion at the beginning of October 2008 to approximately $4.25 trillion by September 2017. To put that increase in context, the securities held by the Federal Reserve increased from approximately 3.31% of Gross Domestic Product ("GDP") in October 2008 to approximately 22.10% of GDP in the third

[60] Federal Reserve Bank of New York, Domestic Open Market Operations Report During 2016, April 2017 (revised May 2017) at 5.

quarter of 2017.[61] The Fed therefore has significant sources of capital market liquidity.

On September 20, 2017, the Fed announced that it will "initiate the balance sheet normalization program described in the June 2017 Addendum to the Committee's Policy Normalization Principles and Plans."[62] Those "Principles and Plans" call for reducing the reinvestment of principal payments received from its holdings of Treasury securities by up to $30 billion per month, and mortgage-backed securities by up to $20 billion per month.[63] The Fed noted following the October 31 / November 1 2017 meeting of the Federal Open Market Committee ("FOMC") that "[t]he balance sheet normalization program initiated in October 2017 is proceeding."[64] At the same time, the Fed maintained the Fed Funds rate at 1% - 1 ¼%, noting that the "rate is likely to remain, for some time, below levels that are expected to prevail in the longer run."[65] However, current market data indicate an approximately 97% likelihood of further rate increases by the end of 2017.[66]

Risk Premium Model ("RPM")

61 Source: Bureau of Economic Analysis, Federal Reserve System.
62 Federal Reserve Press Release, September 20, 2017.
63 Federal Reserve *Addendum to the Policy Normalization Principles and Plans As adopted effective June 14, 2017*
64 Federal Reserve Press Release, November 1, 2017.
65 Federal Reserve Press Release, November 1, 2017.
66 http://www.cmegroup.com/trading/interest-rates/countdown-to-fomc.html/

Q. MR. GORMAN OBJECTS TO USING THE INCOME RETURN ON U.S. TREASURY BONDS IN YOUR THE PREDICTIVE RISK PREMIUM MODEL ("PRPM") ANALYSIS.[67] PLEASE COMMENT.

A. Both my rebuttal and surrebuttal testimony has detailed why it is appropriate to use the income return on long-term U.S. government bonds for cost of capital purposes, so I will not repeat that discussion here. Therefore, Mr. Gorman's criticisms are invalid and unfounded. Mr. Gorman suggests that by using the income returns I am biasing the resultant risk premiums because I am not recognizing the return volatility realized by changes in bond prices. To recognize the return volatility realized by changes in bond prices renders the use of 30-year U.S. Treasury bonds risky and not risk-free.

Q. MR. GORMAN STATES THAT YOUR "METHOD OF MEASURING [THE] RISK PREMIUM AND ITS VOLATILITY IS FLAWED AND BIASES THE RISK PREMIUM UP AND DISTORTS ITS VOLATILITY.[68] DO YOU AGREE?

A. No. Mr. Gorman asserts that I should have used the total return on long-term U.S. government bonds in estimating the equity risk premium using the PRPM methodology, because "[w]ithout recognizing capital gains and losses, stock return volatility and bond return volatility would be muted significantly."[69] He also states that I therefore have "significantly understated the return volatility of

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67 *Gorman Rebuttal* at 28, lines 3 – 18.
68 *Gorman Rebuttal* at 28, lines 4 – 6.
69 *Gorman Rebuttal* at 28, lines 8 – 9.

investing in bonds, and inflated the equity risk premium."[70] Mr. Gorman is correct relative to the fact that using the income return on long-term U.S. government bonds, which does not reflect capital gains and losses, mutes volatility. That is precisely the point of a risk-free rate. However, he is incorrect that using the income return on long-term U.S. government bonds inflates the equity risk premium.

Q. PLEASE EXPLAIN.

A. First, if the return volatility is "significantly understated" in the equity risk premium, consistent with financial principle[71] of risk and return, the equity risk premium should be lower using the income return on long-term U.S. government bonds and not "inflated" as asserted by Mr. Gorman.

To test Mr. Gorman's assertion that my PRPM derived market equity risk premium is "inflated" through the use of the income return on long-term U.S. government bonds, I estimated PRPM derived market equity risk premiums using the total return as well as the income return on long-term U.S. government bonds for 1926-2016. The results are shown on Schedule PMA-SR1. As shown, the PRPM derived market equity risk premium using total returns is 8.55%, while the market equity risk premium using income returns is 7.35%, more than 100 basis points lower. Therefore, it is the use of total returns on long-term U.S. government bonds which "inflates" the market equity risk premium, because the

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70 *Gorman Rebuttal* at 28, lines 16 – 17.

71 The basic financial principle of risk and return states that investors will require a greater return for bearing greater risk. Since risk is measured by volatility, the greater the volatility, the greater the risk. Hence, with greater volatility, investors will require a greater return.

total return does not reflect the truly risk-free portion of the return on long-term U.S. government bonds.

This is corroborated when the standard deviations of the total returns and the income returns on long-term U.S. government bonds are compared. SBBI – 2017 reports that the standard deviation of the total return on long-term U.S. government bonds over 1926 – 2016 was 9.9%, while only 2.6% for the income return.[72] It is logical that when the total return on large company common stocks with a 19.9% standard deviation[73] is combined with the total return on long-term U.S. government bonds with a standard deviation of 9.9%, that the resultant market equity risk premium will be more volatile than the market equity risk premium derived using the total return on those large company common stocks and the income return on long-term U.S. government bonds with its lower 2.6% standard deviation.

In view of the foregoing, Mr. Gorman is incorrect that my PRPM methodology "does not reflect an accurate measurement of a market equity risk premium."[74]

Q. MR. GORMAN CRITICIZES YOUR USE OF PROJECTED YIELDS IN YOUR ESTIMATION OF A RPM DERIVED COST OF COMMON EQUITY. PLEASE COMMENT.

A. Mr. Gorman's takes issue with my reliance upon projected bond yields. I have previously discussed,[75] that because both the determination of the cost

[72] SBBI – 2017 at 6-17.
[73] SBBI – 2017 at 6-17.

of capital and ratemaking are prospective in nature, it is necessary to use projected interest rates when estimating the ROE with the RPM and CAPM. Therefore, I will not repeat that discussion here.

Capital Asset Pricing Model ("CAPM")

Q. MR. GORMAN TAKES ISSUE WITH YOUR EMPIRICAL CAPM ANALYSIS ("ECAPM").[76] PLEASE COMMENT.

A. Mr. Gorman's issue arises from confusing the adjustment of beta with the ECAPM. As previously discussed in my rebuttal testimony and my direct testimony, there is considerable academic and regulatory support for the use of the ECAPM. As explained previously[77] it is essential to take into account the reality that the empirical Security Market Line ("SML") described by the traditional CAPM is not as steeply sloped as the predicted SML.

Mr. Gorman claims[78] that the use of the ECAPM "is a redundant CAPM return adjustment and overstates a fair return for Laclede/MGE." In view of this comment, my rebuttal testimony does bear repeating here. Using adjusted betas in a CAPM analysis is not equivalent to the ECAPM. Betas are adjusted because of the regression tendency of betas to converge toward 1.0 over time, i.e., over successive calculations of beta. As discussed previously, numerous studies have determined that the SML described by the

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74 *Gorman Rebuttal* at 28, lines 17 – 18.
75 *Ahern Rebuttal* at 25, line 4, 28, lines 19 – 22, and 68, line 20
76 *Gorman Rebuttal* at 30, line 3 to 31, line 19.
77 *Ahern Direct* at 38, lines 12 – 35 and *Ahern Rebuttal* at 35, line 18 to 37, line 11.
78 *Gorman Rebuttal* at 30, lines 21 – 22.

CAPM formula at any given moment in time is not as steeply sloped as the predicted SML. In corroboration, Morin[79] states:

> Some have argued that the use of the ECAPM is inconsistent with the use of adjusted betas, such as those supplied by Value Line and Bloomberg. This is because the reason for using the ECAPM is to allow for the tendency of betas to regress toward the mean value of 1.00 over time, and, since Value Line betas are already adjusted for such trend [sic], an ECAPM analysis results in double-counting. This argument is erroneous. Fundamentally, the ECAPM is not an adjustment, increase or decrease, in beta. This is obvious from the fact that the expected return on high beta securities is actually lower than that produced by the CAPM estimate. The ECAPM is a formal recognition that the observed risk-return tradeoff is flatter than predicted by the CAPM based on myriad empirical evidence. The ECAPM and the use of adjusted betas comprised two separate features of asset pricing. Even if a company's beta is estimated accurately, the CAPM still understates the return for low-beta stocks. Even if the ECAPM is used, the return for low-beta securities is understated if the betas are understated. Referring back to Figure 6-1, the ECAPM is a return (vertical axis) adjustment and not a beta (horizontal axis) adjustment. Both adjustments are necessary.

Moreover, the slope of the SML should not be confused with beta. As noted by Eugene F. Brigham, finance professor emeritus and the author of many financial textbooks states[80] :

> The slope of the SML reflects the degree of risk aversion in the economy – the greater the average investor's aversion to risk, then (1) the steeper is the slope of the line, (2) the greater is the risk premium for any risky asset, and (3) the higher is the required rate of return on risky assets.
>
> Students sometimes confuse beta with the slope of the SML. This is a mistake. As we saw earlier in connection with Figure 6-8, and as is developed further in Appendix 6A, beta does

[79] Morin, Roger A., New Regulatory Finance, (Public Utilities Reports 2006) at 191.

[80] Brigham, Eugene F., Financial Management – Theory and Practice, 4th Ed. (The Dryden Press, 1985) at 203.

> represent the slope of a line, but not the Security Market Line. This confusion arises partly because the SML equation is generally written, in this book and throughout the finance literature, as ki = RF + bi(kM – RF), and in this form bi looks like the slope coefficient and (kM – RF) the variable. It would perhaps be less confusing if the second term were written (kM – RF)bi, but this is not generally done.

Thus, the ECAPM is a return adjustment which accounts for this reality and is not an adjustment to beta which is an x-axis adjustment accounting for regression bias. Hence, the use of adjusted betas is not equivalent to the ECAPM. Mr. Gorman's "concerns" are unfounded, unsupported and meaningless.

Non-Regulated Companies Analyses

Q. MR. GORMAN DISCUSSES HIS ISSUES WITH YOUR NON-PRICE REGULATED COMPANY ANALYSIS. PLEASE COMMENT.

A. Mr. Gorman claims that I have "not proved that these companies are risk comparable to Laclede/MGE" and that "[w]hile these companies may have comparable beta estimates" I have not "shown that they face comparable business and operating risk to a low-risk regulated gas utility company."[81] Once again, Mr. Gorman is incorrect.

Mr. Gorman mischaracterizes my selection criteria for the non-price regulated companies, as beta was not the only selection criterion used. I also used a second selection criterion, namely, the residual standard error of the regression which gave rise to those betas. Combining beta, a measure of

[81] *Gorman Rebuttal* at 32, lines 19 – 21.

systematic risk, with the residual standard error of the regression, which is a measure of non-systematic risk, results in selection criteria based upon total comparable risk, i.e., systematic plus non-systematic / business plus financial risk.

Hence, Mr. Gorman's statement that the non-price regulated companies cannot serve as proxies for Laclede/MGE is incorrect. These selection criteria are derived from the "corresponding risk" standard of the landmark cases of the U.S. Supreme Court. Therefore, they are consistent with the *Hope*[82] and *Bluefield*[83] doctrines that the return to the equity investor should be commensurate with returns on investments in other firms having corresponding risks.

Consequently, because the non-price regulated companies are comparable in total risk, the costs of common equity derived from the application of the DCF, RPM, and CAPM are indeed relevant to the determination of an appropriate cost of common equity for MGE. Once again, Mr. Gorman's criticisms are unfounded and should be disregarded.

Final Comments

Q. HAVE YOU REVIEWED THE REBUTTAL TESTIMONY OF OPC WITNESS DR. MARKE AT PAGE 8 RELATIVE TO THE COMPANIES REQUESTED RSM?

A. Yes.

82 Federal Power Commission v. Hope Natural Gas Co., 320 U.S. 591 (1944).

83 *Bluefield Water Works Improvement Co. v. Public Serv. Comm'n*, 262 U.S. 679 (1922).

Q. DO YOU HAVE ANY COMMENT?

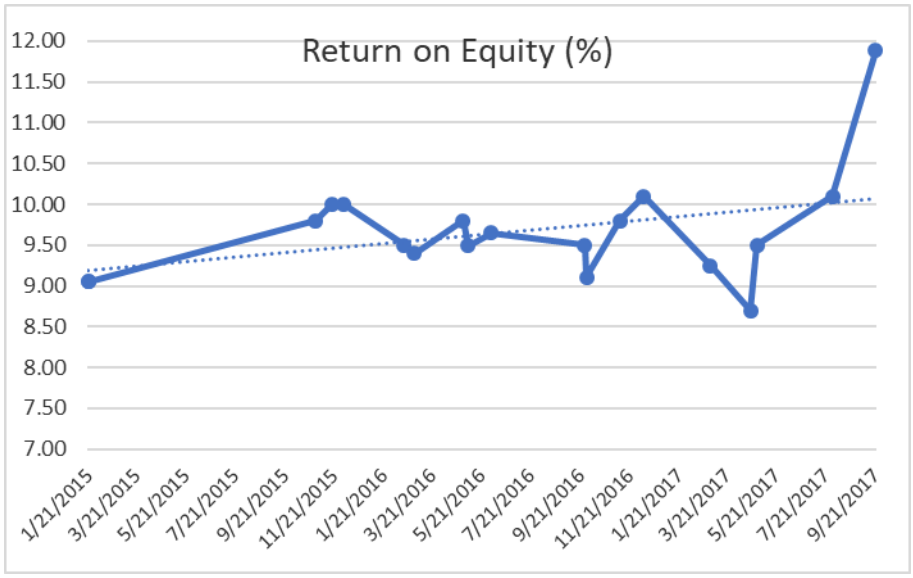
A. Yes. First, as can be gleaned from Schedule PMR-SR2, the majority of the operating subsidiaries of my Natural Gas Proxy Group operate under an RSM. Therefore, any investor perception of risk related to an RSM is already reflected in the market data of the group and hence any common equity cost rate derived from that data. Therefore, should the MOPSC approve the Companies' proposed RSM, there is no need for a reduced authorized ROE as a result.

Second, logic mandates that if any party perceives that an RSM reduces investment risk, recommending a reduction in the authorized ROE if an RSM is approved, the corollary is that is an RSM is not authorized, there must be an increase in the authorized ROE.

Q. WHAT HAS BEEN THE TREND IN RECENTLY AUTHORIZED ROES FOR NATURAL GAS DISTRIBUTION COMPANIES?

A. As shown in Chart 1 below; from 2015 through 2017, to date, there has been a general upward trend in fully litigated authorized ROEs for natural gas distribution companies which, in my opinion, should be reflected in the authorized ROE for the Companies in this proceeding.

Chart 1
Authorized ROES for Natural Gas Distribution Companies (Litigated) for the Years 2015, 2016 & 2017, to date.



Source of Information: SNL Energy

Q. DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY?

A. Yes, it does.

LAC / MGE

Market Predicted Risk Premium Based Upon Total Returns and Income Returns on Long-Term U.S. Government Bond - 1926 - 2016

Avg Pred. Variance	0.003233	0.002818
Spot Variance	0.002627	0.001211
GARCH Coefficient	2.339107	2.926420
Predicted RP Based on Avg	9.46%	10.36%
Predicted RP Based on Spot	7.63%	4.33%
Predicted RP	8.55%	7.35%

Source of Information:

2017 SBBI Yearbook | Stocks, Bonds, Bills, and Inflation | U.S. Capital Markets Performance by Asset Class 1926 - 2016, Duff & Phelps

LAC / MGE

Summary of Decoupling and Weather Normalizaion Mechanisms for the Proxy Group of Seven Natural Gas Companies

Proxy Group of Seven Natural Gas Companies	State	Decoupling/Rate Stabilization	Weather Normalization	Mechanism Name
Atmos Energy Corporation				
	KS	Partial	Yes	Weather Normalization Adjustment (WNA)
	KY	Partial	Yes	Weather Normalization Adjustment (WNA)
	LA	Partial	No	Rate Stabilization Clause (RSC)
	LA	Partial	Yes (Dec-Mar)	Weather Normalization Adjustment (WNA)
	MS	Partial	Yes (Nov-Apr)	Weather Normalization Adjustment (WNA)
	TN	Partial	Yes (Oct-Apr)	Weather Normalization Adjustment (WNA)
	TX	Partial	Yes (Oct-May)	Weather Normalization Adjustment (WNA)
Cheseapeake Utilities Corporation				
	DE	No	No	
	FL	No	No	
	FL	No	No	
New Jersey Resources Corporation				
	NJ	Full	No	Conservation Incentive Program (CIP)
Northwest Natural Gas Company				
	OR	Partial	No	Partial Decoupling Mechanism (PDM)
	OR	Partial	Yes (Dec -May)	Weather Adjusted Rate Mechanism (WARM)
	WA	No	No	
South Jersey Industries, Inc.				
	NJ	Full	Yes	Temperature Adjustment Clause (TAC)
	NJ	Full	No	Conservation Incentive Program (CIP)
Southwest Gas Holdings, Inc.				
	CA	Full	No	Fixed Cost Adjustment Mechanism (FCAM)
	NV	Full	No	General Revenues Adjustment Provision (GRAP)
	AZ	Partial	No	Delivery Charge Adjustment (DCA)
Spire, Inc.				
	MO	No	No	
	MO	No	No	
	AL	Partial	Yes	Temperature Adjustment Rider (TAR)
	AL	Partial	No	Rate Stabilization and Equilization Factors (RSE)

Source of Information: Company Annual Forms 10K

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Laclede Gas Company's Request to Increase its Revenues for Gas Service	)))	File No. GR-2017-0215
In the Matter of Laclede Gas Company d/b/a Missouri Gas Energy's Request to Increase its Revenues for Gas Service	)))	File No. GR-2017-0216

AFFIDAVIT

STATE OF NEW JERSEY)
) SS.
CITY OF MARLTON)

Pauline M. Ahern, of lawful age, being first duly sworn, deposes and states:

1. My name is Pauline M. Ahern. I am an Executive Director of ScottMadden, Inc. My business address is 1900 West Park Road, Suite 250, Westborough, MA 01581. My mailing address is 3000 Atrium Way, Suite 241, Mount Laurel, NJ 08054.

2. Attached hereto and made a part hereof for all purposes is my surrebuttal testimony on behalf of Laclede Gas Company and MGE.

3. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct to the best of my knowledge and belief.

Pauline M. Ahern

Sworn to and subscribed
before me this
___day of_____, 20___

Subscribed and sworn to before me this NOV. 20, 2017.

LAURA C. GLATZ
NOTARY PUBLIC OF NEW JERSEY
Comm. # 50061711
My Commission Expires 6/5/2022

Notary Public

LAURA C. GLATZ NOTARY PUBLIC NEW JERSEY