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MISSOURI PUBLIC SERVICE COMMISSION

MISSOURI GAS ENERGY

CASE NO. GR-2009-0355

REBUTTAL TESTIMONY OF

FRANK J. HANLEY, PRINCIPAL & DIRECTOR
AUS CONSULTANTS

SEPTEMBER 2009

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I. INTRODUCTION

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

A. My name is Frank J. Hanley and I am Principal and Director of AUS Consultants. My business address is 155 Gaither Drive, Suite A, Mount. Laurel, New Jersey 08054.

Q. ARE YOU THE SAME FRANK J. HANLEY WHO PREVIOUSLY FILED DIRECT TESTIMONY IN THIS PROCEEDING BEFORE THE MISSOURI PUBLIC SERVICE COMMISSION ("COMMISSION")?

A. Yes, I am.

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A. The purpose of this testimony is to provide Missouri Gas Energy's ("MGE" or "the Company") cost of common equity on a more contemporaneous basis as there have been significant changes in the capital markets over the nearly seven months since the common equity cost rate described in my direct testimony was determined. I also rebut certain aspects of the direct testimonies of the Office of the Public Counsel ("OPC") Witness Daniel J. Lawton and that portion of the Missouri Public Service Commission Staff ("Staff") Report relating to cost of capital sponsored by Staff Witness David Murray. In this regard, I address the deficiencies in the

recommended common equity cost rates proposed by Messrs. Lawton and Murray. In particular, I explain why both witnesses erred in their conclusions of common equity cost rate and as relates to impact on common equity cost rate attributable to the Company's Straight Fixed Variable ("SFV") rate design. I also explain why Mr. Lawton's reliance on Southern Union Company's ("SUG") capital structure is incorrect and why Mr. Murray's short-term debt cost rate is understated. My rebuttal testimony is organized by witness.

Q. HAVE YOU PREPARED SCHEDULES IN SUPPORT OF THIS TESTIMONY?

A. Yes, I have. I have prepared 10 Schedules which have been marked for identification as Schedules FJH-21 through FJH-30, which is a continuation of the numbering from my direct testimony.

II. SUMMARY

Q. PLEASE SUMMARIZE YOUR REBUTTAL TESTIMONY.

A. Due to the significant changes in the capital markets over the approximately seven months that have elapsed since my original common equity cost rate (ROE) recommendation was formulated, I deemed it appropriate to provide an updated study which is more reflective of current and prospective capital market conditions. As a result of my updated study, I conclude that a proper common equity cost rate

for MGE in this case is 10.50%, which is lower than the 11.25% determined early in 2009. Again, I explain why no downward adjustment to common equity cost rate is warranted attributable to MGE's SFV rate design, namely because the proxy companies overwhelmingly have decoupling mechanisms in place.

Q. PLEASE LIST THE ISSUES YOU WILL ADDRESS CONCERNING MR. LAWTON'S TESTIMONY.

A. My testimony will address the following issues related to OPC Witness Lawton:

- I will explain why Mr. Lawton's suggested downward adjustment to common equity cost rate attributable to the Company's SFV rate design is unfounded and without merit.
- I will explain why Mr. Lawton's inclusion of three companies in his proxy group is incorrect.
- I will explain why Mr. Lawton's sole reliance on the DCF method to determine his recommended common equity cost rate is incorrect even though he utilized, albeit incorrectly, the risk premium and Capital Asset Pricing Model (CAPM) methods as checks.
- I will explain why Mr. Lawton's constant DCF conclusion of common equity cost rate is understated due to the improper and illogical utilization of sustainable growth rates.

- I will point out the logical flaws in Mr. Lawton's application of the risk premium model including his failure to recognize that there exists an inverse relationship between equity risk premia and interest rate levels.
- I will show that a properly calculated equity risk premium common equity cost rate based on his own data results in an average common equity cost rate of 11.24%.
- I will examine certain errors in Mr. Lawton's application of the CAPM, and I will show that properly calculated CAPM and Empirical Capital Asset Pricing Model (ECAPM) cost rates of his proxy companies less three companies inappropriately included are 10.44% and 11.21%, respectively for a cost rate of 10.83%.
- I will explain why Mr. Lawton's adoption of SUG's capital structure is incorrect and how its use results in a significant understatement of MGE's common equity cost rate.
- I will explain why Mr. Lawton's financial metrics test is flawed and does not confirm that his recommended ROE is appropriate.

Q. PLEASE SPEAK TO MR. MURRAY'S TESTIMONY.

A. My testimony will address the following issues related to Staff Witness Murray:

- I will explain why Mr. Murray's sole reliance on the DCF method to determine his recommended common equity cost rate range is incorrect, even though he utilized, albeit incorrectly, the CAPM method, as a check.
- I will explain why Mr. Murray's use of the lower half of his range of recommended ROE is based on an erroneous premise.
- I will explain why Mr. Murray's adoption of a short-term debt cost rate of 0.89% is grossly understated and inappropriate to utilize in this case based upon current market information.
- I will explain why Mr. Murray's use in the CAPM check of geometric mean returns is incorrect.
- I will explain why Mr. Murray's CAPM analyses are incorrect and result in a gross understatement of common equity cost rate; and also why his failure to include the ECAPM exacerbates the understatement. Moreover, I will show that properly calculated CAPM/ECAPM cost rates based on his proxy group of seven companies are 10.44% and 11.21%, respectively, for an average cost rate of 10.83%.
- I will explain why Mr. Murray's review of overall rates of return in order to check the reasonableness of his total cost of capital demonstrates only that his recommended range of common equity cost rate is substantially understated.

III. UPDATED COST OF COMMON EQUITY CAPITAL

Q. YOU PREVIOUSLY REFERRED TO YOUR UPDATED STUDY OF COST OF COMMON EQUITY CAPITAL. ARE YOU NOW PRESENTING THAT UPDATED STUDY AND RECOMMENDATION?

A. Yes, I am. My updated study is contained in Schedule FJH-21 which consists of 55 pages.

Q. PLEASE EXPLAIN SCHEDULE FJH-21.

A. I prepared an updated cost of common equity study in order to reflect the significant passage of time, nearly seven months, and changing capital market conditions since the preparation of my direct testimony. For convenience of presentation within this testimony, I have consolidated the most relevant pages from Schedules FJH-1 through FJH-20, which accompanied my direct testimony. They are all shown within Schedule FJH-21 which, as mentioned previously, includes 55 pages. Each updated page contains a reference to the relevant page within Schedules FJH-1 through FJH-20.

As my updated study utilizes the same methodologies explained in detail in my direct testimony, there is no need to again provide all of the explanations and rationale, but for one exception. When I prepared my direct testimony, the stock market was near the 2008-2009 low and the potential for capital appreciation was

considerable. As a result, in the application of the risk premium and CAPM/ECAPM models I gave only 20% weight to the huge potential market appreciation in order to estimate what I considered to be more of a norm at that time. As discussed *infra*, since early March, the market as measured by the Dow Jones Industrial Average (DJI) increased by 46.71% between March 9 and September 11, 2009. This huge increase means that with the recession ending, the potential for capital market appreciation has declined dramatically. Consequently, in this update I gave more weight (40%) to the capital appreciation potential than I did originally because, in my opinion, it is a better representation of the norm expected by investors. Under more normal conditions, I believe investors would give equal weight to long-term historical market risk premia and expected market risk premia. Under current conditions, I give 60% weight to historical appreciation and 40% weight to the Value Line forecasted appreciation potential.

Q. WHAT IS THE RESULT OF YOUR UPDATE?

A. As a result, as indicated *supra*, my updated recommended common equity cost rate is 10.50%, as shown on page 1 of Schedule FJH-21. Absent the Company's existing SFV rate design common equity cost rate should be no less than 10.75% because the proxy gas distribution companies overwhelmingly have protection from the vagaries of weather and declining usage per customer. Consequently, a common

equity cost rate derived from market data of those gas distribution companies already reflects any risk reducing benefits derived from such rate mechanisms.

Q. HAS THE COMMISSION PREVIOUSLY RECOGNIZED THIS PRINCIPLE?

A. Yes. This Commission has previously recognized the foregoing principle, namely if the proxy companies have similar mechanisms, no downward adjustment to ROE is warranted, but absent such a mechanism, an upward adjustment may be appropriate (see for example, 28-30 of Report and Order issued January 27, 2009, Case No. ER-2008-0318 re: Union Electric Company d/b/a Ameren UE).

Q. DO YOU HAVE ANY OTHER COMMENTS CONCERNING YOUR UPDATE?

A. Yes. I should also point out that at the time of preparation of my original study, 2008 actual results were not available, including those from the *Morningstar* 2009 Valuation Yearbook. Such data are now available and are incorporated in my updated study and recommendation.

IV. OPC WITNESS DANIEL LAWTON

A. Analysis of Mr. Lawton's Proposed ROE

Q. MR. LAWTON UTILIZES A PROXY GROUP OF TWELVE COMPANIES WHEREAS YOU UTILIZE A PROXY GROUP OF NINE COMPANIES. HOW DO YOU CHARACTERIZE THE THREE ADDITIONAL COMPANIES IN MR. LAWTON'S PROXY GROUP?

A. They are not appropriate to use as a proxies in this proceeding.

Q. PLEASE EXPLAIN.

A. As can be seen on Schedule FJH-22, Nicor, Inc. is one of those companies used by Mr. Lawton and it was involved in a pending merger/acquisition. Such a situation places undue pressure on market prices. Companies involved in M&A activities should be eliminated as potential proxies. The other two companies, Nisource, Inc. and UGI Corporation cannot be truly considered primarily gas distribution companies. As can be seen, in 2008, Nisource derived only 36.49% of its operating income from gas distribution operations, while UGI derived even less at 23.51%. Also shown are similarly low percentages of assets attributable to gas distribution operations. Clearly, these three companies should not be included as proxies. Their elimination from Mr. Lawton's group would leave the same nine companies which I utilize for my proxy group.

Q. AT PAGES 11-12 OF HIS DIRECT TESTIMONY, MR. LAWTON SUGGESTS THAT A 50 BASIS POINT REDUCTION IS APPROPRIATE TO ROE DUE TO THE COMPANY'S SFV RATE DESIGN. HOW DO YOU RESPOND?

A. Mr. Lawton is incorrect. His logic is convoluted.

Q. PLEASE EXPLAIN.

A. He chooses to ignore the fact that the proxy gas companies which I utilized to establish a benchmark common equity cost rate (which would also be his proxy companies after exclusion of the three companies he inappropriately included in his proxy group, as discussed *supra*) currently have nearly 85% of their revenues either wholly or partially decoupled as shown on Schedule FJH-3, page 2 of 2. This can be determined by a careful reading of the descriptions in conjunction with the notes to Schedule FJH-3, which accompanied my direct testimony, which reveals that eight of the nine proxy companies have decoupling mechanisms in place to varying degrees and all have protection from the vagaries of weather which is the largest single variant of sales and revenues. Note also that in multi-jurisdictional utilities such as AGL Resources, its largest jurisdiction is Georgia which employs SFV rate design. A decoupling mechanism is in place in New Jersey which is called

Consumer Incentive Program (CIP) for New Jersey Resources and South Jersey Industries. The CIP protects both of those companies against weather and eliminates the disincentive to promote conservation. Laclede has a rate design that mitigates against the impact of weather and recovers fixed costs more evenly during the heating season. Northwest Natural, in its largest jurisdiction (Oregon – 81%) has a WNA and a Customer Utilization Tracker (CUT) which breaks the link between earnings and usage. Piedmont Natural also has a Customer Utilization Tracker (CUT) in its largest jurisdiction, North Carolina, which takes into account weather and usage and has weather normalization in its other jurisdictions. Southwest Gas has a decoupling mechanism in California and has requested one in Nevada which also takes weather and usage into account. WGL Holdings has protection from weather and usage changes in its Maryland jurisdiction and weather protection in Virginia.

Q. WHAT IS THE SIGNIFICANCE OF THIS?

A. While it is difficult to classify the full range of decoupling mechanisms by the degree and effectiveness with which they reduce equity risk, they should not be ignored. Mr. Lawton, however, does just this – he completely disregards the fact that the proxy companies overwhelmingly have decoupling mechanisms which take weather and usage changes into account. Consequently, under the Efficient Market

Hypothesis (EMH) those benefits are reflected by investors in the market prices they pay for securities. Thus, common equity cost rates derived therefrom already reflect their risk-reducing benefits. However, if MGE did not have its SFV rate design, its risk would be greater than the proxy companies and an upward adjustment of 25 basis points would be necessary.

Q. AT PAGE 11 OF HIS DIRECT TESTIMONY, MR. LAWTON MAKES REFERENCE TO REGULATORS THAT HAVE EMPLOYED A FIFTY BASIS POINT REDUCTION TO EQUITY RETURNS FOR SIMILAR DECOUPLING PROPOSALS. DO YOU HAVE ANY COMMENT?

A. Yes. Mr. Lawton does not identify the source of his fifty basis point reference. I am aware of one circumstance where a fifty basis point reduction was taken as a result of decoupling. That was in a case involving Baltimore Gas and Electric Company before the Maryland Public Service Commission. (Case No. 8829, Order No. 76260, dated June 19, 2000) In that case, the cost rate of common equity capital was reduced by fifty basis points for the implementation of Rider 8 (a decoupling mechanism which accounts for changes in weather and other factors which affect gas usage). I should point out that in 1999 and early 2000 no gas distribution proxy companies had decoupling mechanisms in place. However, in Baltimore Gas & Electric Company's next gas distribution rate case in 2005, the Maryland

Commission did away with the equity cost rate reduction because the impact of same was reflected in the proxy companies utilized to establish common equity cost rate (Baltimore Gas & Electric Company, in Case No. 9036, Order No. 80460, Dated December 21, 2005). The Maryland Commission's rationale is analogous to this Commission's rationale regarding fuel adjustment clause as discussed *supra* in re Union Electric in Case No. ER-2008-0318 at pp. 28-30.

The circumstances where the Maryland Public Service Commission declined to make a reduction in the allowed ROE as a result of the decoupling mechanism is also analogous to the instant circumstance where overwhelmingly the proxy companies enjoy the benefits of decoupling. In Case No. 9036 the Maryland Commission Staff Witness testified that no reduction in the Company's return on equity was recommended because "the proxy group data analyzed already incorporates the reduction in risk for weather or conservation mitigation." As a result, the Maryland Commission stated in its Order:

> Based on the reasons provided by Staff and the Company, the Commission declines to order a specific adjustment for Rider 8.

Q. AT PAGE 13 OF HIS DIRECT TESTIMONY, MR. LAWTON DISCUSSES STANDARD & POOR'S (S&P) METHODOLOGY BY WHICH HE CLAIMS HE CAN MEASURE THE IMPACT OF A REDUCED RISK ASSOCIATED WITH DECOUPLING. PLEASE COMMENT.

A. First, the so-called numerical risk profiles which Mr. Lawton utilizes were superseded by an entirely different matrix in November 2007. The exact date of the publication of the matrix that superseded the matrix relied upon by Mr. Lawton is shown at pages 11 through 13 of Schedule FJH-2 and that November 30, 2007 matrix has been superseded by yet a new matrix which expands the November 30, 2007 matrix. The new matrix of May 27, 2009 is shown at pages 15 through 20 of Schedule FJH-21.

Second, Mr. Lawton's financial integrity analysis is a self-serving presentation. As indicated *supra*, on pages 15 through 20 of Schedule FJH-21, I have included S&P's entire write-up from its RatingsDirect dated May 27, 2009 describing its Criteria Methodology: Business Risk/Financial Risk Matrix. Expanded. S&P indicates clearly, as shown on page 16 of Schedule FJH-21, that the old matrix/metrics are not to be used when it states:

> *This article amends and supersedes* the criteria as published in Corporate Ratings Criteria, page 21, and the articles listed in the 'related articles' section at the end of this report.
> (Emphasis added)

Moreover, at pages 18 and 19 of Schedule FJH-21, S&P states:

> Still, *it is essential to realize that the financial benchmarks are guidelines, neither gospel nor guarantees. ...Moreover, our assessment of financial risk is not as simplistic as looking at a few ratios.* It encompasses:
>
> - a view of accounting and disclosure practices;

- a view of corporate governance, financial policies, and risk tolerance;
- the degree of capital intensity, flexibility regarding capital expenditures and other cash needs, including acquisitions and shareholder distributions; and
- various aspects of liquidity – including the risk of refinancing near-term securities

(Emphasis added).

Q. WHAT DO YOU CONCLUDE FROM THIS?

A. In view of the foregoing, especially his inappropriate use of superseded financial metrics and reliance upon the ratios of a single period, Mr. Lawton's financial metrics calculation based upon one unit of a superseded matrix provides no basis of support for his common equity cost rate recommendation.

Q. AT PAGE 14 OF HIS DIRECT TESTIMONY, MR. LAWTON REFERS TO A RECENT DECISION OF THE CONNECTICUT DEPARTMENT OF PUBLIC UTILITY CONTROL (DPUC). HE ALLUDES TO A STATEMENT THAT THE DPUC WOULD REQUIRE A 100 BASIS POINTS REDUCTION IN ROE TO PROVIDE CUSTOMERS WITH WEATHER-ONLY COMPENSATION. HOW DO YOU RESPOND?

A. His depiction is not accurate.

Q. PLEASE EXPLAIN.

A. First of all, Mr. Lawton does not reveal that in Docket No. 08-12-06, Connecticut Natural Gas Corporation, the DPUC denied Connecticut Natural Gas' requested decoupling mechanism. Moreover, the following facts apply: 1) there were only two cost of equity witnesses in the case, i.e., for Connecticut Natural Gas Corp. and the Office of Consumer Counsel (OCC); 2) the Connecticut Natural Gas witness testified that decoupling had no effect on ROE; 3) the OCC witness was not in favor of decoupling but did testify that if the Department approved the decoupling mechanism, it would reflect a 25 basis point reduction in the allowed ROE. However, no attempt was made by the OCC witness to measure the extent to which decoupling mechanisms were recognized by investors in the prices paid for the common stocks of the proxy gas companies he utilized; 4) the reference to 100 basis points was claimed in a brief by the Attorney General who offered no expert witness on the subject of the cost rate of common equity capital. In view of the foregoing, Mr. Lawton's reference to that Connecticut decision is inaccurate and misleading.

Q. DOES MR. LAWTON ARRIVE AT HIS RECOMMENDED ROE BASED SOLELY UPON APPLICATION OF THE DCF METHOD?

A. Yes. I believe it is quite clear that he does. He states at pages 18-19 of his direct testimony that "I employ the Discounted Cash Flow ("DCF") methodology for

estimating the cost of equity...." He refers at lines 5-7 of page 19 to the CAPM and Risk Premium Models and states that they are "often used to check the reasonableness of the DCF results."

Q. IS THE USE OF A SINGLE METHOD TO ESTIMATE THE COST OF COMMON EQUITY CAPITAL CONSISTENT WITH THE FINANCIAL LITERATURE AND THE EMH UPON WHICH THE DCF METHOD IS PREDICATED?

A. No. A review of my direct testimony at pages 26-32 will reveal that the financial literature is quite clear and that the EMH requires the assumption that investors rely upon multiple cost of common equity models. Consequently, rate of return analysts should use multiple cost of common equity models as primary methods in arriving at recommended cost of common equity capital. Mr. Lawton did not do this.

Q. AT THE BOTTOM OF PAGE 24 OF HIS DIRECT TESTIMONY, MR. LAWTON DISCUSSES THE ECONOMIC SLOWDOWN AND SUGGESTS THAT CAPITAL COSTS ARE BACK TO PRE-FINANCIAL CRISIS LEVELS. DOES THAT MEAN THAT THERE IS LITTLE EXPECTATION OF CAPITAL APPRECIATION ON THE PART OF INVESTORS?

A. Not at all. As discussed *supra*, bottom of investment grade long-term debt of utilities, i.e., rated Baa is still more costly than prior to the financial crisis. Moreover, in the past six to seven months, there has been a tremendous increase in capital appreciation which will temper future expectations as discussed *supra*. The rate of increase will decline, but will not be insignificant. For example, during 2009 the Dow Jones Industrial Average (DJI) went from a low of 6,547.05 on March 9th to a close of 9,605.41 on September 11, a 46.71% increase in value in just six months. This is totally consistent with Dr. Roger Ibbotson who indicated that when markets pull out of calamities, they often have their highest returns (page 56 of Hanley direct testimony). Dr. Ibbotson also points out that there is greater risk in the market now due to investor perceptions. Greater risk equals investors' greater expected return for the commitment of capital.

Q. AT PAGE 24 OF HIS DIRECT TESTIMONY, MR. LAWTON STATES THAT BBB RATED BONDS ARE BACK TO THE PRE-CREDIT/LIQUIDITY CRISIS LEVELS. IS HE CORRECT RELATIVE TO BAA OR BBB RATED *PUBLIC UTILITY* BONDS?

A. No. It is true for corporate debt but not for public utility debt as shown in Schedule FJH-23.

Q. PLEASE EXPLAIN SCHEDULE FJH-23.

A. Schedule FJH-23 consists of seven pages. Page 1 graphically shows the yield spread between Moody's A and Baa rated public utility bonds between January 1989 and August 2009. As can be seen, the yield spread has increased dramatically. Although it has receded significantly from the high of nearly 178 basis points in November 2008, in August 2009 it was still about two times greater than the historical average of 33 basis points, or 65 basis points as can be gleaned from page 7 of Schedule FJH-23. The widened spread indicates that the risk associated with Baa/BBB rate public utility bonds is still greater than the historical average.

Q. AT THE BOTTOM OF PAGE 26 OF HIS TESTIMONY, MR. LAWTON STATES THAT IT IS NOT SOUND RATEMAKING TO ESTABLISH REVENUE REQUIREMENTS AND RATES ON ATYPICAL OR ABNORMAL EVENTS. PLEASE COMMENT.

A. I completely agree. That is precisely why, in my direct testimony, I tempered down the relative weight given to potential market appreciation and also, albeit to a lesser extent, for the reason provided *supra* in my update. However, with regard to the yield spread between utility bonds rated A versus Baa, I have utilized a normalized spread of only 54 basis points. Consequently, my cost of equity capital has been normalized.

Q. DO YOU HAVE ANY COMMENTS WITH REGARD TO MR. LAWTON'S UTILIZATION OF THE SUSTAINABLE GROWTH METHOD IN HIS DCF ANALYSIS?

A. Yes. Mr. Lawton discusses the sustainable growth method at the bottom of page 32 and top of page 33 of his testimony. His sustainable growth calculations are shown in Schedule (DJL-7). His sustainable long-term growth rate calculations are based entirely upon historical and projected data from Value Line. Value Line's forecast data go out three to five years. If one believes that three to five year analysts' forecast growth rates in earnings per share (EPS) are not sustainable, how can one rely on an estimate based on those same forecasts as being sustainable for an indefinite period such as 150 years (stage 2 in his two-stage growth DCF as shown on Schedule DJL-9)? In addition to the element of circularity it does not make sense to derive individual estimates of growth in dividends, book values and retention ratios all derived from the analysts' forecasts of growth in EPS. Rather than making numerous calculations based upon derivatives of the analysts' forecasts of EPS, it makes more sense to rely upon the analysts' direct forecasts of the growth rates in EPS, which is the largest single driver of market prices.

Q. IS THERE AUTHORITY FOR YOUR POSITION IN THE FINANCIAL LITERATURE?

A. Yes. Myron Gordon, who first introduced the DCF model adapted for utility ratemaking, came to recognize long after his book, *The Cost of Capital to a Public Utility* was published in 1974, that the growth component of his original "Gordon Model" which relied upon the sustainable growth method had a serious limitation. Dr. Gordon, in a presentation on March 27, 1990 (some 16 years after the publication of his 1974 book), before the Institute for Quantitative Research In Finance, in Palm Beach, Florida, entitled, "*The Pricing of Common Stocks*," stated that analysts' growth rate projections were superior to the sustainable growth method:

> The most serious limitation of the Gordon Model is the assumption that the dividend expectation can be represented with just two parameters, D and br ... We have seen that earnings and growth estimates by security analysts were found by Malkiel and Cragg to be superior to data obtained from financial statements for the explanation of variation in price among common stocks. That is, better estimates are obtained for the coefficient of the various explanatory variables. *...estimates by security analysts available from sources such as IBES are far superior to the data available to Malkiel and Cragg. Secondly, the estimates by security analysts must be superior to the estimates derived solely from financial statements.*
> (Emphasis added.)

Q. AT PAGES 36-38, AND AS EVIDENT FROM TABLE 6 ON PAGE 38 OF HIS DIRECT TESTIMONY, MR. LAWTON RELIES UPON THE GEOMETRIC

MEAN OF TOTAL RETURNS ON LARGE COMPANY STOCKS FOR THE PERIOD 1926-2008. HOW DO YOU RESPOND?

A. His use of total return on bonds and the geometric mean is not appropriate.

Q. PLEASE EXPLAIN.

A. Pages 43 through 47 of Schedule FJH-21 are five pages from the *Morningstar* 2009 Valuation Yearbook. The discussion on page 44 explains clearly why the income return must be used when estimating equity risk premium. While relying upon *Morningstar*, Mr. Lawton ignored *Morningstar*'s advice to utilize the income return. *Morningstar* states:

> The income return is defined as the portion of the total return that results from the 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... *The income return is thus used in the estimation of the equity risk premium because it represents the truly riskless portion of the return.* (Emphasis added).

Q. IS THERE ANOTHER REASON WHY MR. LAWTON'S USE OF TOTAL RETURN ON BONDS IS INCORRECT?

A. Yes. In the ratemaking paradigm only the income return, that is, yield, is relevant in establishing the cost of capital. The paradigm holds that the bonds are to be

outstanding for their life and any changes in their value are only relevant to the bondholders trading in secondary markets.

In view of the foregoing, Mr. Lawton's use of total return is inappropriate and understates the historical equity risk premium.

Q. WHY IS MR. LAWTON'S USE OF THE GEOMETRIC MEAN NOT APPROPRIATE?

A. Pages 45 and 46 of Schedule FJH-21 contain *Morningstar*'s explanation of why the arithmetic mean is the appropriate mean to utilize when estimating future cash flows, that is, the cost of capital. Simply stated, only the arithmetic mean will appropriately reflect the volatility in the market in a manner meaningful to investors looking forward because both the cost of capital and ratemaking are prospective. In contrast, the geometric mean artificially smoothes out that projected volatility.

Q. PLEASE EXPLAIN.

A. Investors are constantly buying and selling stocks. Potential investors require insight into the degree of risk they will experience before they can determine whether to purchase the common stock of a firm and the price they are willing to pay. Such insight is critical because the degree of risk mandates the rate of return required in

accordance with the basic financial precept of risk and return, i.e., greater risk means a greater required rate of return and vice versa.

The financial literature is clear that business risk is measured by the variability of expected pretax returns, i.e., the probability distribution of returns.[1] Weston & Brigham[2] define the riskiness of an asset thusly:

> The riskiness of an asset is defined in terms of the *likely variability of future returns from the asset.*
> (Emphasis added.)

Jeremy J. Siegel[3] defines risk as follows:

> Figure 2-4 displays the risk defined as the *standard deviation* of *average real annual returns* for stocks, bonds and bills based on the historical sample of nearly 200 years. *This is the measure of risk used in portfolio theory and asset allocation models.*
> (Emphasis added.)

Finally, in a note at the top of Table 1-1 on page 13 of the same text, Siegel further notes that:

> Risk = standard deviation of *arithmetic returns.*
> (Emphasis added.)

Thus, it is clear that the use of the geometric mean is incorrect when estimating the cost of capital.

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1 Eugene F. Brigham, *Fundamentals of Financial Management*, Fifth Edition, The Dryden Press, 1989, p. 639.

2 J. Fred Weston and Eugene F. Brigham, *Essentials of Managerial Finance*, Third Edition, The Dryden Press, 1974, p. 272.

3 Jeremy J. Siegel, *Stocks for the Long Run – The Definitive Guide to Financial Market Returns for Long-Term Investment Strategies*, McGraw-Hill, Third Edition, 2002, p. 32.

Q. HAVE YOU GRAPHICALLY ILLUSTRATED WHY THE ARITHMETIC MEAN IS APPROPRIATE TO USE WHEN ESTIMATING THE COST OF CAPITAL?

A. Yes. I have prepared Schedule FJH-24 which consists of three pages. Page 1 charts the returns on large company stocks for each year, 1926 through 2008 from *Morningstar's* 2009 Valuation Yearbook. It is clear from looking at the distinct bell-shaped pattern that the returns are random. Page 2 shows the returns by year and further confirms that they are random. Only the arithmetic mean of a random distribution of returns considers all of the returns in the distribution. The arithmetic mean takes into account the standard deviation or likely variance which may be experienced in the future when estimating the cost of equity capital based on random historical returns. In contrast, page 3 of Schedule FJH-24 demonstrates that when the geometric mean is calculated, only two of the returns are considered, namely the initial and terminal years, which, in this case, are 1926 and 2008. Based upon only those two years, a *constant* rate of return is calculated, i.e., the geometric average. That *constant* return, when represented graphically, is a flat line over the entire 1926 to 2008 time period which is quite different from the volatile random returns which generate the probability distribution shown on page 1 and the volatility demonstrated on page 2 of Schedule FJH-24.

In view of all the foregoing, it should be clear that only the arithmetic mean of historical risk premia takes the standard deviation of returns, which is critical to risk analysis when estimating the cost of capital, into account. The geometric mean is appropriate only when measuring historical performance and should not be used to estimate the investors' required rate of return.

Q. IS THERE ANOTHER PROBLEM WITH THE RISK PREMIUM ANALYSIS PERFORMED BY MR. LAWTON AS SUMMARIZED IN TABLE 6 ON PAGE 38 OF HIS DIRECT TESTIMONY?

A. Yes. Aside from the incorrect use of the geometric mean and the total return on long-term corporate bonds, Mr. Lawton also incorrectly assumed that a market risk premium of 5.5% is applicable to MGE or the proxy group. It should be 5.6% (11.7% market return minus income return of 6.1% on Aaa and Aa corporate bonds). A logical way to allocate the market equity risk premium is through the use of beta.

Q. DO YOU AGREE WITH THE USE OF THE TIME PERIOD UTILIZED BY MR. LAWTON IN SCHEDULE (DJL-10), THAT IS 1980 THROUGH 2008 TO ESTABLISH AN EQUITY RISK PREMIUM?

A. No. Mr. Lawton incorrectly used the period of 1980 through the first quarter of 2009 over the more appropriate long-term time period 1926-2008. As explained in more

detail below, the use of such a short time period can inadvertently pick up the effects of short-term anomalies and volatilities, and give them greater current weight than appropriate. This is why I employed the use of historical data for the longest time period possible, to 1926.

The use of a short period of time is inconsistent with his argument for long-term, sustainable growth in the DCF model. *Morningstar* states clearly that using shorter periods of time is suspect because all periods contain unusual events.

Morningstar points out how the use of a long period of time is required when they state:

> Furthermore, because an average of the realized equity risk premium is quite volatile when calculated using a short history, using a long series makes it less likely that the analyst can justify any number he or she wants ...Some analysts estimate the expected equity risk premium using a shorter, more recent time period on the basis that recent events are more likely to be repeated in the near future . . . [T]his view is suspect . . .

See, Schedule FJH-21, page 47.

Significantly, Mr. Lawton's shorter time period includes several historical events I noted on page 51 of my direct testimony as potential problematic factors in relying upon a short-term analysis. By choosing the time period 1980 through 2008, Mr. Lawton has encapsulated a period of extraordinary double-digit inflation and bond yields, the 1987 stock market crash, the collapse of the Soviet Union, the two wars with Iraq, the September 11, 2001 terrorist attacks, and other significant events.

Q. THE FOREGOING NOTWITHSTANDING, HAVE YOU PERFORMED A CALCULATION OF A RISK PREMIUM METHOD COMMON EQUITY COST RATE UTILIZING THE DATA SHOWN BY MR. LAWTON ON HIS SCHEDULE (DJL-10)?

A. Yes, I have. That information is contained in Schedule FJH-25.

Q. PLEASE EXPLAIN SCHEDULE FJH-25.

A. In Schedule FJH-25 I have utilized the indicated risk premia over Moody's Public Utility Bond yields shown by Mr. Lawton on his Schedule (DJL-10). I believe that relying upon an average equity risk premium over such a period of time to establish a proper equity risk premium is incorrect for several reasons. First, for the reasons provided by *Morningstar* and referred to *supra*; and secondly, because of a wealth of empirical evidence in the financial literature which confirms an inverse relationship between interest rates and equity risk premia. Because of the inverse relationship between interest rates and equity risk premia, I chose to utilize two different regression analyses based on Mr. Lawton's data shown on his Schedule (DJL-10) which are shown in Schedule FJH-25.

Q. PLEASE EXPLAIN.

A. The first type of regression analysis is shown on pages 1 and 2. It is based upon regressing the trend of equity risk premium in excess of the Moody's public utility bond yields shown by Mr. Lawton over time. The regression results shown on page 2 predict an equity risk premium of 4.78% over an expected Moody's Baa public utility bond yield of 6.86%.

The second type of regression analysis performed was to regress the relationship between the equity risk premia and interest rate levels shown on Mr. Lawton's Schedule (DJL-10). The graphical depiction shown on page 3 clearly confirms the inverse relationship between interest rate levels and equity risk premia. As can be determined by interpolation from the predicted results from the regression analysis on page 4, the indicated risk premium over an expected Moody's Baa Public Utility Bond yield of 6.86% is 4.14%.

In estimating the yield on Moody's Baa rated public utility bonds, I relied upon the forecast average yield of 7.05% on Baa rated corporate bonds during the six quarters ending with the fourth quarter of 2010 from the September 1, 2009 Blue Chip Financial Forecast, which is shown at page 40 of Schedule FJH-21. I then reduced that yield by the 19 basis points yield differential between Baa rated corporate bonds and Baa rated public utility bonds shown by Mr. Lawton on his Schedule (DJL-4). Column H on Schedule (DJL-4) is mislabeled in that it uses BBB but should read Baa. They are Moody's yields from Mergent Bond Record.

Q. WHAT DID YOU THEN DO?

A. I recalculated the indicated risk premium cost rates utilizing the projected average yield on Moody's Baa rated utility bonds of 6.86%. The information is summarized in Schedule FJH-26. As shown, based upon an average expected yield on Moody's Baa rated utility bonds of 6.86% and predicted equity risk premia of 4.78% and 4.14% the indicated risk premium common equity cost rates are 11.64% and 11.00% for an average indicated equity risk premium cost rate of 11.32%. As discussed *supra*, I do not agree with Mr. Lawton's approach but the foregoing is a far better indicator of a risk premium common equity cost rate than his conclusion of 9.99% shown on his Schedule (DJL-10).

Q. DO YOU AGREE WITH MR. LAWTON'S CAPM ANALYSIS AT PAGES 42-44 OF HIS TESTIMONY AND SUMMARIZED IN HIS SCHEDULE (DJL-11)?

A. No. Mr. Lawton utilizes both geometric and arithmetic mean data. As discussed *supra*, the use of geometric mean data when estimating the cost of capital is incorrect. With regard to his long-term arithmetic mean analysis, he incorrectly utilizes the total return on long-term government bonds of 6.1%. The arithmetic mean income return on long-term government bonds of 5.2% over the period 1926-

2008 should be utilized for the reasons discussed *supra*. Based only on arithmetic mean long-term historic data, the indicated market risk premium should be 6.5%, not the 5.6% claimed and utilized by Mr. Lawton. In addition, I have a problem with his use of a three-month average yield of 30-year U.S. Treasury bonds. In view of the recent global financial economic crisis, and investors' flight to quality, it is apparent that the critical levels reached in the fall of 2008 and earlier in 2009 are receding relative to higher quality debt including U.S. Treasuries. Consequently, the yield on U.S. Treasuries has risen. For example, reference to page 40 of Schedule FJH-21 reveals that the consensus forecast of the country's leading economists, as published in the September 1, 2009 Blue Chip Financial Forecast, indicates a continued rising trend so that by the fourth quarter of 2010 the average yield on 30-year U.S. Treasury bonds is expected to be 5.0%. I believe that using an average of the forecasted six quarters ending with the fourth quarter of 2010 is reasonable to utilize in a CAPM analysis. The average of those forecast yields is 4.67%, or 28 basis points higher than the 4.39% utilized by Mr. Lawton. In addition, his use of the three-month average for the yield on U.S. Treasury bonds is inconsistent with his long-term expectation by virtue of the use of sustainable growth in his application of the DCF model.

Finally, because of investor expectations and the forecast of future potential capital appreciation, a significant part of expected total market return, has not been taken into account. Such a forecast is available from Value Line.

Q. HAVE YOU CALCULATED A TOTAL MARKET RETURN THAT INVESTORS WOULD EXPECT BASED ON VALUE LINE DATA FORECAST DATA FOR THE TWO MONTHS ENDED AUGUST 2009 AND AT SEPTEMBER 11, 2009?

A. Yes. The average annual forecast over a three-to-five year period for total market return is 14.68% and when added to the forecast annual dividend yield of 2.41% a forecast total average return of 17.09% is indicated as shown in Note 2, page 51 of Schedule FJH-21. I believe investors would temper that forecast, but give it reasonable weight at this time, such as 40%, given the recession of the flight to quality mentality and rising yields on long-term government bonds as well as the recent substantial increase in the DJI as discussed *supra*.

Q. IS IT THEN FAIR TO SAY THAT ALL YOU AGREE WITH FROM MR. LAWTON'S CAPM ANALYSIS IS HIS USE OF THE VALUE LINE BETAS?

A. Yes. I believe that properly calculated CAPM and ECAPM models would yield an average cost rate of 10.83% for MGE based upon my proxy group of nine gas

distribution companies as summarized on Line no. 3, page 2 and detailed in pages 49 through 51 of Schedule FJH-21.

Q. HAVE YOU SUMMARIZED MR. LAWTON'S CONSTANT GROWTH DCF COST RATE AS WELL AS THE PROPERLY CALCULATED COMMON EQUITY COST RATES FOR THE RISK PREMIUM AND CAPM MODELS YOU DISCUSSED *SUPRA*?

A. Yes. Those cost rates, including the updated necessary adjustments to reflect MGE's greater risk vis-à-vis the proxy group of nine gas distribution companies to reflect its smaller size is reflected in the following table:

TABLE A

1. Constant Growth DCF (Median) (1)	9.82%
Adjustment for MGE's Smaller Size (2)	.19
	10.01
2. Corrected Risk Premium Analysis (3)	11.32
Adjustment for MGE's Smaller Size (2)	0.19
	11.51
3. Corrected CAPM (ECAPM)(4)	10.83
Adjustment for MGE's Smaller Size	0.19
	11.02
Average	10.85%

(1) From Schedule (DJL-8).
(2) From Schedule FJH-21, page 2, line 6.
(3) From Schedule FJH-26.
(4) From Schedule FJH-21, page 49.

Q. HOW DO YOU CHARACTERIZE MR. LAWTON'S USE OF SUG'S CAPITAL STRUCTURE, WHICH INCLUDES A 38.66% COMMON EQUITY RATIO, FOR USE IN A DETERMINATION OF COMMON EQUITY COST RATE FOR MGE IN THIS PROCEEDING?

A. It is inappropriate for the reasons set forth by me at pages 15-17 of my direct testimony. Staff Witness Murray also recognizes that the use of SUG's capital structure in this proceeding is inappropriate as explained by him at pages 7 and 20-27 of the Staff's Report. My reasoning, as well as Mr. Murray's, is self-explanatory

and need not be repeated here. Moreover, there is an additional conceptual error which exacerbates Mr. Lawton's erroneous use of SUG's capital structure.

Q. WHAT IS THE ADDITIONAL ERROR MADE BY MR. LAWTON IN CONJUNCTION WITH HIS ERRONEOUS ADOPTION OF SUG'S CAPITAL STRUCTURE?

A. It is quite clear from Mr. Lawton's testimony and supporting schedules that he relied upon his proxy group of gas distribution companies (see my disagreement with his inclusion of three companies *supra*) in formulating his recommended common equity cost rate of 10.00%. At page 49 of his direct testimony, Mr. Lawton confirms that MGE's proposed capital structure compares "quite favorably to the equity ratios in the natural gas utility industry." Mr. Lawton, despite the foregoing, erroneously applies a common equity cost rate (albeit unduly low) not to a 48% common equity ratio, but to SUG's 38.66% common equity ratio without making a financial risk adjustment. Such an adjustment would substantially increase the required ROE relative to SUG's much lower common equity ratio. His failure to do so exacerbates his already understated recommended ROE, and hence his recommended ROR.

Q. AT THE BOTTOM OF PAGE 49 OF HIS DIRECT TESTIMONY, MR. LAWTON SUGGESTS THAT MGE'S BUSINESS RISK HAS BEEN

REDUCED BY VIRTUE OF THE BENEFITS ASSOCIATED WITH DECOUPLING. PLEASE COMMENT.

A. Again, Mr. Lawton disregards the fact that most of the gas distribution companies have substantial decoupling, as set forth in detail in Schedule FJH-3 accompanying my direct testimony and explained *supra*. Moreover, as also explained *supra*, this Commission has recognized that when proxy companies substantially utilize similar-type mechanisms, no downward adjustment to ROE is warranted, while on the other hand, if a similar mechanism was not utilized by the company in question, that an upward adjustment to ROE would be warranted.[4]

Q. AT PAGES 52-53 OF HIS DIRECT TESTIMONY, MR. LAWTON DISCUSSES THE FINANCIAL RATIOS OR FINANCIAL METRICS THAT THE COMMISSION SHOULD CONSIDER. HE PURPORTS TO UTILIZE S&P METRICS AND SHOWS HIS CALCULATIONS ON HIS SCHEDULE (DJL-13). PLEASE COMMENT.

A. As discussed *supra*, Mr. Lawton utilizes metrics from a matrix that was superseded in November 2007 and again superseded by a newer matrix, the latter of which is shown at pages 15 through 20 of Schedule FJH-21.

[4] Report and Order issued January 27, 2009 re: AmerenUE in Case No. ER-2008-0318 at pp. 28-30.

In view of the foregoing, especially his inappropriate use of superseded financial metrics and reliance upon the ratios of a single period, Mr. Lawton's financial metrics analysis provides no basis for justifying his common equity cost rate recommendation.

V. STAFF WITNESS DAVID MURRAY

A. ANALYSIS OF MR. MURRAY'S PROPOSED SHORT-TERM DEBT COST RATE

Q. AT PAGE 31 OF HIS DIRECT TESTIMONY, MR. MURRAY DISCUSSES THE RATIONALE FOR HIS USE OF A SHORT-TERM DEBT COST RATE OF 0.89%. DO YOU AGREE WITH HIS RATIONALE AND COST RATE RECOMMENDED?

A. I do not. As discussed *supra* in this testimony, the flight to quality mentality attributable to the global financial crisis has receded significantly since late 2008 and early 2009. As such, the yields on government securities, including U.S. Treasuries have increased considerably. Moreover, I do not believe it appropriate for Mr. Murray to utilize a spot cost rate, which is understated for the foregoing reasons, based upon only two companies.

Q. WHAT APPROACH SHOULD BE UTILIZED?

A. A review of more recent market data for 364-day revolving credit facilities, indicates that a more appropriate short-term debt cost rate based upon a utility with a similar

credit rating to the proxy group would consist of three-month LIBOR rate plus 300 basis points plus a commitment fee of 50 basis points. This was based upon recent capital market information presented to SUG by Calyon Credit Agricole CIB. The appropriate excerpt from that report which is dated August 20, 2009, is presented as Schedule FJH-27. Since short-term debt cost rates fluctuate and because ratemaking is prospective, the use of a three-month prospective average LIBOR rate is appropriate. The Blue Chip Financial Forecast Consensus three month LIBOR rate for the six quarters ending with the fourth quarter 2010 is shown on page 40 of Schedule FJH-21. As of September 1, 2009, the six quarter average forecast three-month LIBOR rate is 0.8667%. When added to the market-required margin over the LIBOR rate of 300 basis points and a 50-basis point commitment fee, a 4.367% prospective short-term debt cost rate is indicated for a gas distribution company with a credit rating of Moody's A3.

Q. WHAT DOES ALL OF THIS DEMONSTRATE?

A. It shows that Mr. Murray's short-term debt cost rate is grossly understated.

B. ANALYSIS OF MR. MURRAY'S PROPOSED ROE

Q. MR. MURRAY INDICATES AT PAGE 6 OF THE STAFF REPORT THAT HIS RECOMMENDED RANGE OF COMMON EQUITY COST RATE WAS DERIVED BY APPLYING A SINGLE-STAGE, CONSTANT-GROWTH DCF

MODEL TO A GROUP OF COMPARABLE COMPANIES. PLEASE COMMENT.

A. As discussed *supra* with regard to OPC Witness Lawton, exclusive reliance upon any single method, including the DCF, as a primary tool in arriving at a recommendation of common equity cost rate is inconsistent with the Efficient Market Hypothesis ("EMH"). Multiple models should be used consistent with the EMH. My prior discussion need not be repeated here.

Q. AT PAGE 36 OF THE STAFF REPORT, MR. MURRAY RELIES UPON THE LOWER HALF OF HIS COST OF EQUITY RANGE BASED UPON HIS PROXY GROUP OF SEVEN COMPANIES. HOW DO YOU RESPOND?

A. His reasoning lacks merit.

Q. PLEASE EXPLAIN.

A. Mr. Murray acknowledges on page 36, at lines 11-12 that "Staff's comparable companies also have varying decoupled rate designs", yet he adopts the lower half of his range of common equity cost rate because "all have at least some degree of non-regulated operations." Mr. Murray's reasoning is specious. I have prepared Schedule FJH-28 which shows that all seven of Mr. Murray's proxy companies are included in the Edward Jones gas distribution companies group and also that all

seven are included in the Value Line natural gas utility group. As such, it is clear that investors consider these companies gas distribution utilities. Moreover, as also shown on Schedule FJH-28, the average of the seven companies in 2008 had 73.45% of its net operating income derived from gas distribution operations and 82.87% of its total assets were devoted to gas distribution operations. The median data for the same two indicators are 67.99% of net operating income derived from gas distribution operations and 79.44% of total assets devoted to gas distribution operations.

Q. HAS THIS COMMISSION LOOKED AT THIS CONCEPTUAL ISSUE PREVIOUSLY?

A. Yes. This Commission stated in the AmerenUE Report and Order issued January 27, 2009, at pp. 29-30:

> As indicated, most of the companies included in the proxy groups used by the analysts to estimate an appropriate return on equity for Ameren UE already operate under a fuel adjustment clause. That means the analysts are measuring and evaluating Ameren UE against companies with a level of risk that takes into account their use of a fuel adjustment clause. Therefore, while an upward adjustment may have been appropriate if a fuel adjustment clause were not allowed, no corresponding reduction is necessary because a fuel adjustment clause will be in place.

Q. HOW DOES THE COMMISSION'S RATIONALE IN THE AMERENUE CASE RELATE TO THE MGE CASE?

A. Since Mr. Murray acknowledges that his comparable companies have varying decoupled rate designs, supported by my Schedule FJH-3 and as described *supra* in this testimony, it is clear that the current situation for MGE is analogous to the Ameren UE and the fuel adjustment clause situation. In view of the foregoing, Mr. Murray's reaching to the lower half of his substandard range of common equity cost rate exacerbates his understated recommendation, is inappropriate and should be rejected by this Commission.

Q. PLEASE COMMENT UPON MR. MURRAY'S APPLICATION OF THE CAPM.

A. As with OPC Witness Lawton, about the only thing I agree with Mr. Murray's application of the CAPM is his use of the Value Line betas.

Q. DO YOU DISAGREE WITH MR. MURRAY'S UTILIZATION OF A RISK-FREE RATE OF 4.41%?

A. Yes.

Q. PLEASE EXPLAIN.

A. Ratemaking is prospective, as is the cost of capital. As discussed *supra*, with the decline in the impact of the flight to quality attributable to the global financial crisis, yields on U.S. government securities have been increasing. As contained in my updated CAPM analyses and discussed *supra* with regard to Mr. Lawton's CAPM analysis, the use of the average expected yield on long-term U.S. Treasury Bonds for the six quarters ending with the fourth quarter of 2010 is 4.67%, a full 26 basis points higher than the risk-free rate utilized by Mr. Murray.

Q. MR. MURRAY UTILIZED AN ARITHMETIC AVERAGE MARKET RISK PREMIUM FROM MORNINGSTAR OVER THE PERIOD 1926-2008 OF 5.60%. HOW DO YOU CHARACTERIZE HIS USE OF A 5.60% MARKET RISK PREMIUM?

A. It is not appropriate

Q. WHY?

A. It is based upon the total return upon long-term government bonds. In other words, he derives his 5.60% by subtracting from total market returns of 11.7% the total returns on long-term government bonds of 6.1%. For the reasons described in my direct testimony and *supra* in this testimony and explained fully by Morningstar at page 44 of Schedule FJH-21, the use of only the income return is appropriate when

estimating the cost of capital. The income return on long-term government bonds over the period 1926-2008 was 5.2% which means that the arithmetic mean equity risk premium utilized by Mr. Murray is understated by 90 basis points (or 0.9%). It should be 6.50% (11.7% - 5.2%).

Q. MR. MURRAY ALSO UTILIZED THE GEOMETRIC AVERAGE RISK PREMIUM FROM THE MORNINGSTAR DATA IN HIS CAPM ANALYSIS. HOW DO YOU DESCRIBE THE USE OF THE GEOMETRIC MEAN WHEN ESTIMATING THE COST OF CAPITAL?

A. It is not appropriate. I have discussed the inappropriate use of the geometric mean in my direct testimony and *supra* in this testimony. That discussion need not be repeated here.

Q. MR. MURRAY FAILED TO TAKE INTO ACCOUNT ANTICIPATED MARKET APPRECIATION IN CALCULATING RISK PREMIUM. PLEASE RESPOND.

A. It is not appropriate to exclude consideration of expected capital appreciation.

Q. WHY?

A. Mr. Murray relies upon the DCF method. The DCF method is expectational and reflects investors' expectation of growth in market price. As discussed at pages 56-57 of my direct testimony and *supra* in this testimony, investors have reason to expect high returns coming off of the adverse impact of the global financial crisis. Dr. Roger Ibbotson affirms this (pp. 56-57 of my direct testimony) and actual market performance in 2009 to date from the low reached in early March 2009 also affirms this to be true. In addition, as discussed *supra*, it is reasonable to give substantial weight to expected market appreciation and I have currently given 40% weight to such in contrast to only 20% weight when my direct testimony was prepared.

Q. ARE THERE OTHER ISSUES WITH REGARD TO MR. MURRAY'S APPLICATION OF A CAPM ANALYSIS?

A. Yes. Mr. Murray failed to also take into account the ECAPM. The ECAPM is discussed at pages 61-63 of my direct testimony. It is supported by an abundance of empirical studies. Mr. Murray failed to take a proper calculation of the ECAPM into account.

Q. HAVE YOU PREPARED AN ANALYSIS OF PROPERLY-COMPUTED CAPM/ECAPM COST RATES BASED UPON MR. MURRAY'S PROXY GROUP OF SEVEN COMPANIES?

A. Yes, I have. That information is shown on Schedule FJH-29, which consists of two pages. The analysis remedies the flaws in Mr. Murray's analysis discussed *supra*. As shown on page 1 of Schedule FJH-29, the median CAPM result is 10.44%, while the median ECAPM result is 11.21%, resulting in an average of the traditional and ECAPM models of 10.83%.

Q. YOU PREVIOUSLY DISCUSSED WHY MR. MURRAY'S REACHING TO THE LOW HALF OF HIS DCF RANGE OF COMMON EQUITY COST RATE IS INAPPROPRIATE. WHAT IS THE MIDPOINT OF HIS RANGE?

A. It is 9.75%. I also notice that in arriving at his range, as shown on Schedule 15 of Appendix 2 of the Staff Report, that if Mr. Murray had utilized the range of growth rates indicated in Schedules 11-1 through 11-3 as well as 12 and 13 of Appendix 2, his range of growth rate would be from 4.62% to 6.48% with a midpoint of 5.55%. If 5.55% growth is added to Mr. Murray's actual projected dividend yield of 4.52% as shown on Schedule 15, the indicated DCF cost rate would be 10.07%.

Q. WHAT WOULD THE INDICATED COMMON EQUITY COST RATE BE WITH A DCF COST RATE OF 10.07% AS DISCUSSED ABOVE AND A PROPERLY-COMPUTED CAPM/ECAPM COST RATE OF 10.83%?

A. It would be 10.45% which is very close to my updated 10.50% common equity cost rate based upon my proxy group of nine gas distribution companies.

Q. AT PAGE 40 OF THE STAFF REPORT, MR. MURRAY DISCUSSES THE MISSOURI STATE EMPLOYEES' RETIREMENT SYSTEM (MOSER). HE SUGGESTS BECAUSE MOSER'S EXPECTED RETURNS FOR LARGE CAPITALIZATION DOMESTIC EQUITIES IS ONLY 8.50% THIS JUSTIFIES HIS RECOMMENDED ROE. DOES IT?

A. No. The use of an expected return on pension fund assets has no relevance to the establishment of a common equity cost rate relative to a single asset, such as MGE's rate base. The projected return on pension fund assets reflects the risk-reducing benefits of a diverse portfolio. Also, the fiduciary responsibility of maintaining a pension fund requires a level of conservatism in portfolio management. In addition, while not indicated in the response to MGE's DR0274 to Mr. Murray, I suspect that the MOSER fund investment horizon is of relatively short duration as opposed to the infinite investment horizon implicit in the standard DCF model. Of course, MGE's rate base represents a very small number compared to large capitalization domestic equities. Consequently, a very substantial size premium would be required. Moreover, the 8.50% is undoubtedly a projected geometric mean, whereas when estimating the cost of capital only the arithmetic mean is appropriate. For the

foregoing reasons, no reliance should be placed upon MOSER's expected return on large capitalization domestic equities.

Q. AT PAGES 41-42 OF THE STAFF REPORT, MR. MURRAY DISCUSSES THE SIGNIFICANCE OF ALLOWED ROE AND ALLOWED OVERALL RATES OF RETURN (ROR). DO THEY SUPPORT HIS RECOMMENDED RANGE OF ROE AND ROR?

A. No. All of the allowed ROEs are greater, ranging from 10.11% to 10.49% as shown at lines 6 through 12 on page 41 of the Staff Report. As to ROR, I have prepared Schedule FJH-30 in order to demonstrate that even the high end of Mr. Murray's recommended range does not support his recommendation. For example, shown at the top of Schedule FJH-30 is Mr. Murray's recommended overall rate of return of 7.45% based upon the high end of his range of 9.75% ROE. In the three "reasonableness checks" below that calculation I have utilized Mr. Murray's recommended hypothetical capital structure ratios, long- and short-term debt cost rates. Based upon the low ROR of 8.01% shown on page 42 of the Staff Report, a 10.83% common equity cost rate is indicated relative to a common equity ratio of 51.06%. Based on the high ROR shown of 8.78%, a 12.34% common equity cost rate is indicated relative to a 51.06% common equity ratio. Similarly, based on the average of all quarterly awarded RORs shown on the same page 42 of 8.32%, an

indicated common equity cost rate of 11.44% relative to a common equity ratio of 51.06% is indicated.

Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?

A. Yes, it does.