Exhibit No.:	_____
Issue:	Fair Rate of Return
Witness:	Frank J. Hanley
Type of Exhibit:	Direct
Sponsoring Party:	Missouri Gas Energy
Case No.:	GR-2009-_____
Date Testimony Prepared:	_____

MISSOURI PUBLIC SERVICE COMMISSION

MISSOURI GAS ENERGY

CASE NO. GR-2009-_____

DIRECT TESTIMONY OF

FRANK J. HANLEY, PRESIDENT
AUS CONSULTANTS - UTILITY SERVICES

MARCH 2009

DM-R-12

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DIRECT TESTIMONY OF FRANK J. HANLEY

CASE NO. GR-2009-_____

MARCH 2009

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. PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND PROFESSIONAL EXPERIENCE.

A. I have testified as an expert witness on rate of return and related financial issues before 33 state public utility commissions including the Missouri Public Service Commission ("the Commission"), the District of Columbia Public Service Commission, the Public Services Commission of the Territory of the U.S. Virgin Islands, and the Federal Energy Regulatory Commission. I have also testified before local and county regulatory bodies, an arbitration panel, a U.S. Bankruptcy Court, the U.S. Tax Court and a state district court. I have appeared on behalf of investor-owned companies, municipalities, and state public utility commissions. The details of these appearances, as well as my educational background, are shown in Appendix A supplementing this testimony.

DIRECT TESTIMONY OF FRANK J. HANLEY

CASE NO. GR-2009-_____

MARCH 2009

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to provide evidence on behalf of Missouri Gas Energy ("MGE" or "the Company") in the form of a study of the fair rate of return which it should be afforded an opportunity to earn on its rate base.

Q. WHAT IS YOUR RECOMMENDED FAIR RATE OF RETURN AND ITS COMPONENT COSTS?

A. It is 8.434% and it is based upon a hypothetical capital structure comprised of 52.00% total debt and 48.00% common equity capital. The details are summarized as follows:

Type of Capital	Ratios	Cost Rate	Weighted Cost Rate
Long-Term Debt	41.06%	6.080%	2.496%
Short-Term Debt	10.94	4.920	0.538
Total Debt	52.00%		
Common Equity	48.00%	11.250%	5.400%
Total	100.00%		8.434%

The foregoing is my recommendation. In the Commission's Report and Order in the most recent MGE rate case, Case No. GR-2006-0422 dated March 22, 2007 the Commission decided to utilize the capital structure of Southern Union Company ("SUG") to establish the allowed fair rate of return. I present only as an alternative (albeit improper) a fair rate of return utilizing SUG's capital structure and component costs which is 9.752% as follows:

Based on Southern Union Company's Capital Structure
at December 31, 2008

Type of Capital	Ratios	Cost Rate	Weighted Cost Rate
Long-Term Debt	56.16%	6.258%	3.514%
Short-Term Debt	3.26	5.920	0.193
Preferred Equity	1.92	7.758	0.149
Common Equity	38.66	15.250	5.896
Total	100.00%		9.752%

Q. HAVE YOU CAUSED TO BE PREPARED A SERIES OF DOCUMENTS WHICH SUPPORTS YOUR RECOMMENDATION?

A. Yes, they have been marked for identification as Schedules FJH-1 through FJH-20 and are attached to my testimony.

II. EXECUTIVE SUMMARY

Q. PLEASE SUMMARIZE YOUR TESTIMONY.

A. MGE is somewhat more risky than the average gas distribution company ("LDC") due to its smaller size. MGE is a division of SUG. Consequently, MGE has no common stock which is traded. For reasons which I discuss in detail infra, SUG is in no way representative of a gas distribution company and thus, its capital structure and related component capital costs are unrelated to an LDC. Consequently, I observed market evidence of common equity cost rate of a proxy group of nine similar risk LDCs for insight into a capital structure and related ratios as well as the component costs of debt and common equity capital appropriate for use in establishing a fair rate of return for MGE. The use of other firms of comparable risk as proxies is consistent with the principles of fair rate of return established in the Hope[1] and Bluefield[2] cases and adds reliability to the exercise of informed expert judgment in arriving at a recommendation of common equity cost rate. I also evaluate and rely upon the market data of a proxy group of similar risk LDCs and adjust those results for the risk differential vis-à-vis MGE attributable to MGE's

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

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

smaller size. The proxy group consists of nine LDCs. The bases of selection of the companies in the proxy group are described infra. While the proxy group is reasonably comparable to MGE, it is necessary, however, to adjust for the added business risk attributable to MGE's smaller size as it is not possible to compile a proxy group precisely comparable to MGE. A proxy group which is similar in risk is not the same as identical in risk. Consequently, an adjustment is necessary in order for the proxy group's cost rate to be applicable to MGE. In forming my opinions, as indicated in my testimony, I have utilized information and statements contained in published treatises and periodicals and other facts of the type reasonably relied on by experts in the field.

In arriving at my recommendation of common equity cost rate(s) of 11.25%, based on the proxy group and a hypothetical common equity ratio of 48.00%, I utilize four well-tested market-based cost of common equity models, namely the Discounted Cash Flow Model ("DCF"), the Risk Premium Model ("RPM"), the Capital Asset Pricing Model ("CAPM"), and the Comparable Earnings Model ("CEM") applied to the proxy group. As an alternative, which I do not recommend, I apply the same four models to SUG using SUG's market data and capital structure which includes 38.66% common equity and arrive at a common equity cost rate of 15.25%. All four

of the cost of common equity models are market-based, because they are predicated upon the Efficient Market Hypothesis ("EMH"). The prudence of relying upon multiple market-based models in arriving at a conclusion of common equity cost rate is affirmed in the financial literature. In this instance, I place no reliance upon the results of my CEM analysis based on the proxy group because it is an extreme high-side outlier when compared to the results derived from application of the DCF, RPM and CAPM models. At the same time, however, the financial literature encourages reliance upon multiple models as no single cost of common equity estimation model is so theoretically superior or precise that it should be used to the exclusion of all other models. Therefore, I rely upon the results of the remaining three models, the DCF, RPM, and CAPM in reaching my recommended common equity cost rate for my primary recommendation which is 11.25% based upon the proxy group of nine LDCs. I also use the average capital structure of this group which includes approximately 48.00% common equity capital as the basis for the hypothetical capital structure applicable to MGE.

SUG's capital structure represents its collective operations, has what Standard & Poor's ("S&P") considered an "aggressive" level of financial risk and for the reasons explained in detail infra is not at all representative of how an LDC is financed.

Consequently, if SUG's capital structure is utilized, it must be in conjunction with SUG's capital costs, including the cost of common equity capital.

I have also taken into account that MGE has Straight Fixed Variable rate design ("SFV") for its residential customer class. Consequently, it is important to ascertain to what extent the proxy LDCs have similar mechanisms in place, i.e., those that decouple the impact of weather and/or declining per customer usage on their operating margins and hence earnings per share ("EPS"). I determined, based on the data shown on Schedule FJH-3, that approximately 84.5% on average of the proxy group's revenues are partially or fully decoupled. Consequently, a common equity cost rate derived from my proxy group of nine LDCs (the basis of selection will be described infra) is reflective of a similar level of risk reduction for MGE as a result of its SFV rate design. Thus there is a quid pro quo vis-à-vis the proxy group of nine LDCs and no adjustment to common equity cost rate derived from the proxy group is needed as a result of MGE's SFV rate design.

III. GENERAL PRINCIPLES

Q. WHAT GENERAL PRINCIPLES HAVE YOU CONSIDERED IN ARRIVING AT YOUR RECOMMENDED COMMON EQUITY COST RATE?

A. In unregulated industries where the total price of a delivered product or service is not regulated, competition is the principal determinant in establishing the price. Traditionally, in the case of public utilities, regulation acts as a substitute for the competition of the marketplace. Analyses based on companies whose securities are actively traded are therefore imperative when estimating common equity cost rate. The common equity cost rate determined should be adequate to fulfill investors' requirements and assure that the utility will be able to fulfill its obligations to its customers. A utility's obligation to serve requires a level of earnings sufficient to maintain the integrity of presently invested capital and permit the attraction of needed new capital at a reasonable cost in competition with all other comparable-risk seekers of capital. These standards for a fair rate of return have been established by the U.S. Supreme Court in the Hope and Bluefield cases cited supra.

IV. BUSINESS RISK

Q. PLEASE DEFINE BUSINESS RISK.

A. Business risk is a collective term encompassing all of the diversifiable risks of an enterprise except financial risk.

Q. IS BUSINESS RISK IMPORTANT TO THE DETERMINATION OF A FAIR RATE OF RETURN?

A. Yes. Business risk is important to the determination of a fair rate of return because the greater the level of risk, the greater the rate of return demanded by investors consistent with the basic financial precept of risk and return.

Q. DOES THE SIZE OF AN ENTERPRISE AFFECT THE LEVEL OF BUSINESS RISK PERCEIVED BY INVESTORS?

A. Yes. It is well-established in the financial literature, and well noted by investors, that the size of an enterprise affects the level of its business risk. I have included information on size and risk which is shown on pages 2 through 17 of Schedule FJH-1.

Q. PLEASE EXPLAIN WHY SIZE HAS A BEARING ON BUSINESS RISK.

A. Smaller companies are less capable of coping with significant events which affect sales, revenues and earnings.

The loss of revenues from a few larger customers, for example, would have a greater effect on a small company than on a much larger company with a larger customer base. Consequently, size is an important factor which affects business risk and hence common equity cost rate.

Q. WHAT DOES THIS MEAN FOR MGE?

A. MGE's cost of capital must reflect the impact of the Company's size on common equity cost rate because MGE is smaller than the average company in the proxy group based upon market capitalization as shown below:

	Market Capitalization of Common Equity Investment (1) ($ Millions)	Times Greater Than MGE (1)
Proxy Group of Nine Value Line LDCs	1,588.999	2.3x
Southern Union Company	1,725.432	5.8

(1) From Schedule FJH-1, page 3.

As shown above, the proxy group is 2.3 times larger than MGE's estimated market capitalization of $681.129 million (based upon the market-to-book ratio of the proxy group of 174.7%), while SUG is 5.8 times larger than MGE's estimated market capitalization of $298.652 million (based upon SUG's market-to-book ratio of 76.6%), as shown on page 4 of Schedule FJH-1. In each instance, I assumed that if MGE's common stock were traded, it would trade at the average market/book ratio of the proxy group or SUG on February 13, 2009. SUG's market/book ratio differential vis-à-vis the proxy group of LDCs is yet additional evidence of why SUG is not a proper proxy to use in establishing a fair rate of return for MGE, both

as to capital structure and the cost rates for each component of same. The details are shown on pages 3 and 4 of Schedule FJH-1.

Q. WHAT OTHER EVIDENCE EXISTS THAT SUPPORTS THE POSITION THAT SIZE IMPACTS RISK?

A. Conventional wisdom, supported by the financial literature and actual returns over time, confirms that smaller companies tend to be more risky causing investors to expect greater returns to compensate them for that greater risk. Moreover, Eugene F. Fama and Kenneth R. French, distinguished professors of Finance, Graduate School of Business at the University of Chicago and Tuck School of Business of Dartmouth College, respectively, developed an improved capital asset pricing model. Their "three-factor" model is discussed in their paper entitled, "The Capital Asset Pricing Model: Theory and Evidence" which was published in The Journal of Economic Perspectives, Volume 18, Number 3 – Summer 2004 – at pages 25-46. Their model includes company size as one of the critical three factors.

Q. CAN YOU PROVIDE ANOTHER EXAMPLE FROM THE FINANCIAL LITERATURE WHICH AFFIRMS A RELATIONSHIP BETWEEN SIZE AND RISK AND HENCE COMMON EQUITY COST RATE?

A. Yes. Brigham[3] states:

> A number of researchers have observed that portfolios of small-firms have earned consistently higher average returns than those of large-firms stocks; this is called the "small-firm effect." *On the surface, it would seem to be advantageous to the small firms to provide average returns in the stock market that are higher than those of larger firms. In reality, it is bad news for the small firm; what the small-firm effect means is that the capital market demands higher returns on stocks of small firms than on otherwise similar stocks of the large firms.* (Emphasis added)

In addition, as shown on page 6 of Schedule FJH-1, Morningstar states:

> *One of the most remarkable discoveries of modern finance is that of a relationship between firm size and return. The relationship cuts across the entire size spectrum but is most evident among smaller companies, which have higher returns on average than larger ones.* (Emphasis added)

Q. HAVE YOU ESTIMATED THE IMPACT OF MGE'S SMALLER SIZE VIS-À-VIS THE PROXY GROUP AND SUG ON ITS COMMON EQUITY COST RATE?

A. Yes.

Q. WHAT IS THAT IMPACT?

A. Based on my analyses, an upward adjustment is necessary to be made to the common equity cost rate derived from the proxy group to account for MGE's smaller size.

[3] Eugene F. Brigham, Fundamentals of Financial Management, Fifth Edition, The Dryden Press, 1989, p. 623.

The results of my analyses are summarized on page 3 of Schedule FJH-1, and are based upon the data on pages 4 through 17 of the same schedule.

Q. WHAT IS THE MAGNITUDE OF THE ADJUSTMENT?

A. The results indicate that upward adjustments of 0.60% are indicated based on the proxy group and 2.59% based on SUG. However, as discussed infra, I adopt adjustments of only 0.15% and 0.65% applicable to the proxy group and SUG, respectively, in order to be extremely conservative and yet still recognize the reality that MGE's smaller size justifies a higher common equity cost rate in comparison to the significantly larger proxy group and, alternatively, to SUG.

V. FINANCIAL RISK

Q. PLEASE DEFINE FINANCIAL RISK.

A. Financial risk is the additional risk created by the introduction of debt into the capital structure.

Q. WHAT IS ITS RELATIONSHIP TO THE DETERMINATION OF A FAIR RATE OF RETURN?

A. S&P's corporate bond rating criteria is contained in Schedule FJH-2. Pages 10 through 13 of the schedule contain S&P's matrix for rating U.S. Utilities. S&P's approach reflects the inclusion of utility ratings into a framework shared across all

corporate sectors. The Business Risk/Financial Risk matrix is shown in Table 1 on page 11 of Schedule FJH-2. In Table 2, shown on page 12 of the schedule, S&P shows its financial metrics for utilities. Notwithstanding the table of financial metrics, S&P states on page 12, "Note that even after we assign a company a business risk and financial risk, the committee does not arrive by rote at a rating based on the matrix. The matrix is a guide – it is not intended to convey precision in the ratings process or reduce the decision to plotting intersections on a graph."

Q. CAN BOND RATINGS BE USED AS A MEASURE OF INVESTMENT RISK?

A. Yes, bond ratings are a good measure of investment risk.

Q. PLEASE EXPLAIN.

A. Similar bond ratings reflect similar combined business and financial risks. Although the specific business or financial risks may differ between companies, the same bond rating indicates that the combined risks are similar because the bond rating reflects a company's diversifiable business and financial risks. Risk distinctions within a bond rating category are recognized by a plus or minus. For example, within the A category, a S&P rating can be A+, A, or A-. Similarly, Moody's ratings within the A

category are distinguished by rating gradations of A1, A2 and A3. Moreover, additional risk distinction is reflected by S&P in the assignment of a business risk profile of which there are five, as shown in Table 1 on Schedule FJH-2, page 11. S&P expressly states that the bond rating process encompasses a qualitative analysis of business and financial risks (see pages 3 through 9 of Schedule FJH-2). Although there is no perfect proxy by which one can differentiate common equity risk between companies, the bond rating provides excellent insight because it is the result of a thorough and comprehensive analysis of all diversifiable investment risks.

VI. IMPROPRIETY OF USING SUG AS A PROXY FOR MGE

Q. YOU PREVIOUSLY STATED THAT IT WAS IMPROPER TO UTILIZE SUG AS A PROXY TO ESTABLISH A FAIR RATE OF RETURN FOR MGE. PLEASE EXPLAIN WHY.

A. SUG is not an LDC. In order to demonstrate how inappropriate it would be to utilize SUG's capital structure and its cost of capital in establishing a fair rate of return applicable to MGE, I have prepared Schedule FJH-4, which consists of 11 pages. On page 1, I have shown on a comparative basis, the Standard Industrial Classification code ("S.I.C.") and its related description as well as the percentage of total operating income derived from LDC operations and the percentage of gas

distribution assets to total assets for each of the nine companies in my proxy group of LDCs and for SUG.

Q. WHAT CONCLUSIONS DO YOU REACH FROM THIS?

A. It is clear that SUG is considered primarily a natural gas transmission company, while MGE itself and the companies in the proxy group are clearly considered gas distribution companies. It is even more evident by the percentages of net operating income derived from gas distribution operations and the percentage of total assets devoted to gas distribution operations. The average company in the proxy group had 78.39% and 87.00% of its net operating income and total assets devoted to natural gas distribution operations, respectively. In extreme contrast, SUG derived only 13.39% of its operating income from its gas distribution operations and just 14.02% of its assets were devoted to its gas distribution operations. On pages 3 through 5 of Schedule FJH-4, I have shown the most recent ranking by S&P of U.S. natural gas distributors and integrated gas companies. It should be noted that SUG is not listed in this grouping, either as a gas distributor or an integrated gas company. Also, at pages 8 through 10, I have shown S&P's RatingsDirect which contains issuer ranking of U.S. midstream energy companies as of the same date. Please note that on page 9 of Schedule FJH-4 (original page 3) that SUG is listed thereon, i.e., as a U.S. Midstream Energy Company. In addition, another indication as shown on page

1 of Schedule FJH-4, is that the average and median beta (a measure of volatility to the whole market) of the proxy group is 0.70, while SUG's beta is much higher at 1.10, indicating an entirely different and more risky profile than an LDC.

VII. PROXY GROUP

Q. YOU PREVIOUSLY MENTIONED THAT YOU ALSO OBSERVE THE MARKET DATA FOR A PROXY GROUP OF NINE LDCS IN ORDER TO GAIN INSIGHT INTO CAPITAL STRUCTURE, DEBT AND COMMON EQUITY COST RATES FOR MGE. PLEASE EXPLAIN HOW YOU SELECTED THE PROXY GROUP.

A. The basis of selection was to include those LDCs which 1) are included in the Value Line Natural Gas Utility Group (Standard Edition); 2) have Value Line five-year projections of growth rate in EPS; 3) have a Value Line beta; 4) have not cut or omitted their cash common stock dividends during the five calendar years ending 2008 or through the time of the preparation of this testimony; 5) derived 60% or greater of both net operating income and assets from regulated gas operations; and 6) at the time of the preparation of this testimony, had not publicly announced their involvement in any merger or acquisition activity. Nine companies met all of the foregoing criteria and their financial profile is summarized in Schedule FJH-5.

Q. PLEASE DESCRIBE SCHEDULE FJH-5.

A. Schedule FJH-5 consists of four pages. Page 1 contains average comparative and financial statistics for the years 2004 through 2008. Page 2 contains notes relevant to page 1, as well as the selection criteria of the nine individual companies in the proxy group as discussed supra and the identity of each company. Page 3 contains the capital structure ratios based upon total capital employed 2004 through 2008 and average for the five years. Page 4 contains the same total capital ratios by quarter for the five calendar quarters ending with the fourth quarter 2008, i.e., December 31, 2008 and the average of all five quarters. I believe the most meaningful period to use is the most recent five quarters ending December 31, 2008. The data are shown by quarter and average for the five quarters then ended on page 4 of Schedule FJH-5. As shown, the average is 40.84% long-term debt, 10.86% short-term debt, 0.25% preferred stock and 48.00% common equity. Since the percentage of preferred stock is almost nil, it is reasonable to assume a total debt ratio of 52.00% and a common equity ratio of 48.00%.

VIII. SUG FINANCIAL DATA

Q. PLEASE DISCUSS SCHEDULE FJH-6 .

A. Schedule FJH-6 contains five-year financial summary data for SUG and is shown only for informational purposes. As discussed supra, I offer a cost of capital conclusion based on SUG as an alternative only because it was utilized by the Commission in its Report and Order issued March 23, 2007 in Case No. GR-2006-0422. For the reasons discussed supra, there is no basis upon which investors could in any way consider SUG as a price regulated LDC or a proxy for one. Thus, they would not rely upon it to establish a fair rate of return for MGE.

Q. IN ADDITION TO THE REASONS YOU HAVE SPECIFIED SUPRA, IS THERE A BASIC FINANCIAL PRECEPT WHICH CONFIRMS THAT INVESTORS WOULD NOT LOOK TO SUG FOR INSIGHT AS TO CAPITAL STRUCTURE AND COST OF CAPITAL AS PROXY FOR MGE?

A. Yes. There is an abundance of financial literature which indicates that the risk relates to where capital is invested. In the instant matter, it is in MGE's rate base. Since MGE has no stock which is traded, investors would look to similar risk enterprises to see how MGE should be financed as well as for an indication of its cost of capital. For example, Schedule FJH-7, which consists of five pages, is an excerpt from Principles of Corporate Finance, Fifth Edition, by Richard A. Brealey

and Stewart C. Myers. In discussing capital budgeting and risk at pages 3 and 4 of 5, the authors state:

> *But the company cost of capital rule can also get a firm into trouble if the new projects are more or less risky than its existing business. Each project should be evaluated at its own opportunity cost of capital*. This is a clear implication of the value-addivity principle introduced in Chapter 7. For a firm composed of assets A and B, the firm value is Firm Value = PV (AB) = PV (A) + PV(B) = sum of separate asset values. Here PV(A) and PV(B) are valued just as if they were mini-firms in which stockholders could invest directly …If the firm considers investing in a third project C, it should also value C as if C were a mini-firm. That is, the firm should discount the cash flows of C at the expected rate of return that investors would demand to make a separate investment in C. *The true cost of capital depends on the use to which the capital is put.* (Emphasis in original text)

Q. SINCE MGE IS A DIVISION OF SUG, DO YOU HAVE AN EXAMPLE FROM THE FINANCIAL LITERATURE WHICH AFFIRMS THE ABOVE PROPOSITION SET FORTH BY BREALEY AND MYERS?

A. Yes. I have prepared Schedule FJH-8, which consists of 5 pages. It is an excerpt from Intermediate Financial Management by Eugene F. Brigham and Philip R. Daves. In discussing the divisional cost of capital, they make it quite clear that divisions with different risks require different rates of return which are commensurate with their individual risks. In the example set forth on page 3 of Schedule FJH-8 between the bakery division and the café division of Starlight

Sandwich Shops, an analogy can be made to SUG, wherein the bakery division would equate to MGE and SUG's other operations would equate to the more risky chain of cafes. In discussing the example of Huron Steel Company at pages 3 through 5 regarding companies that use debt financing, the authors state:

> When debt financing is used, the division's cost of equity must be combined with the division's cost of debt and target capital structure to obtain the division's overall cost of capital.

Q. HOW DOES THIS RELATE TO MGE?

A. Since MGE has no debt of its own outstanding, its debt cost as well as its equity cost must relate to its risk. That level of risk is best estimated by observing a group of similar risk enterprises, namely a proxy group of LDCs such as my proxy group of nine LDCs. That is why the capital structure, and related ratios assumed for MGE, as well as the cost rates of the component parts of such capital structure, should be derived from that proxy group of nine LDCs.

Q. SINCE YOU RECOMMEND A 52.00% TOTAL DEBT RATIO FOR MGE, HOW DO YOU DETERMINE THE RELATIVE PROPORTIONS OF LONG- AND SHORT-TERM DEBT?

A. I reviewed the capital structure of each company in the proxy group for the five quarters ending December 2008 and observed that short-term debt was utilized by

most every company in the proxy group all of the time. Thus, it is appropriate to include short-term debt in the capital structure. I relied upon the average of the capital structure ratios for the proxy group for those five quarters and utilized the average of those ratios as shown in Note 1 on Schedule FJH-1, page 1. As shown, long-term debt on average over the five quarters was 78.96% of total debt, while short-term debt represented 21.04% of total debt. Applying those percentages to the 52.00% total debt ratio resulted in a long-term debt ratio of 41.06% and a short-term debt ratio of 10.94%. I believe those ratios represent a proper balance between long- and short-term debt.

On page 1 of Schedule FJH-1, I have also shown SUG's capital structure and related ratios which are 56.16% long-term debt, 3.26% short-term debt, 1.92% preferred equity and 38.66% common equity. Those ratios are not indicative of a company whose principal business is gas distribution and should not be utilized to determine a fair rate of return for MGE.

IX. DEBT COST RATES

Q. PLEASE EXPLAIN THE BASIS OF THE LONG-TERM DEBT COST RATE OF 6.08% WHICH YOU RECOMMEND FOR MGE BASED UPON YOUR

PROXY GROUP.

A. The basis of my long-term debt cost rate of 6.08% is contained in Schedule FJH-9, which consists of ten pages. Page 1 contains a summary of the basis of the cost rate. Pages 2 through 10 contain the basis of the composite long-term debt interest cost rate for each company in the proxy group of nine LDCs. The calculations were made based on the information contained in the 2008 annual Form 10-K to the SEC. As shown on page 1, the composite interest cost rate for the proxy group was 5.93%. By definition, the composite interest cost rates do not represent the full cost of raising long-term debt capital. There are always issuance costs associated with raising the capital. Because the information is not available to calculate an effective cost rate which includes issuance costs for the companies in the group, I have included an estimated increment of 0.15%, or 15 basis points, which in my experience is a reasonable estimate. Consequently, the composite effective cost rate of long-term debt capital is 6.08% based upon the average inherent cost of 5.93% plus an allowance of 0.15% for issuance costs. I believe the cost rate of 6.08% is reasonable for use in a cost of capital determination.

Q. ALTHOUGH YOU SHOW AN OVERALL COST OF CAPITAL BASED ON SUG ONLY AS AN ALTERNATIVE, WHAT IS SUG'S LONG-TERM DEBT

COST RATE?

A. It is 6.258% at December 31, 2008 as shown on Schedule FJH-1, page 1. It was provided to me by SUG and it reflects the effect of costs associated with issuance.

Q. HOW DID YOU ESTIMATE THE SHORT-TERM DEBT COST RATE OF 4.92% FOR THE PROXY GROUP WHICH YOU UTILIZE IN YOUR OVERALL COST OF CAPITAL DETERMINATION?

A. The precise basis of the cost of raising short-term debt capital for each of the proxy companies is not available. Based upon a general review of the market, it seems that with a proxy group average bond rating of Moody's Baa1, that a rate equivalent to 250 basis points over a three-month LIBOR rate plus an up front fee of 100 basis points is appropriate. Consequently, I use an average for the forecast rates for the three-month LIBOR from Blue Chip Financial Forecasts for the six quarters ended with the second quarter of 2010 derived from page 7 of Schedule FJH-15 of 1.42% plus 350 basis points (1.42% + 2.50% + 1.00%) for a forward-looking short-term debt cost rate of 4.92%.

Q. HOW DID YOU ESTIMATE A SHORT-TERM DEBT COST RATE FOR SUG?

A. I utilized the same approach as with the proxy group described supra. However, since SUG's bond rating is Moody's Baa3 and S&P BBB-, the bottom of investment grade, its cost will be greater than that for the proxy group. Recent market evidence points to 350 basis points over the three-month LIBOR rate plus a 100 basis points up front fee. This equates to a forward-looking short-term debt cost rate for SUG of 5.92% as explained in Note 6 on page 1 of Schedule FJH-1.

X. COMMON EQUITY COST RATE MODELS

A. The Efficient Market Hypothesis (EMH)

Q. ARE THE MODELS YOU UTILIZE TO ESTIMATE COMMON EQUITY COST RATES MARKET-BASED?

A. Yes. The DCF model is market-based as current market prices are employed. The Risk Premium Model ("RPM") is market-based as the current and expected bond ratings and yields reflect the market's assessment of risk. To the extent betas are used to determine equity risk premium, the market's assessment is reflected because betas are derived from regression analyses of market prices. Also, actual market risk premia are employed in my application of the RPM. The Capital Asset Pricing Model ("CAPM") model is market-based for much the same reason as the RPM except that the yield on U.S. Government Treasury Bonds is used in lieu of

company-specific bond yields. My application of the Comparable Earnings Model ("CEM") is also market-based because the selection process of comparable risk domestic, non-price regulated, companies is based upon statistics which result from regression analyses of market prices. All of the models are, therefore, based upon the EMH.

Q. PLEASE DESCRIBE THE CONCEPTUAL BASIS OF THE EMH.

A. The EMH is the cornerstone of modern investment theory. It was pioneered by Eugene F. Fama[4] in 1970. An efficient market is one in which security prices at all times reflect all the relevant information at that time. An efficient market implies that prices adjust instantaneously to the arrival of new information and that the prices therefore reflect the intrinsic fundamental economic value of a security.[5]

The essential components of the EMH are:

1) Investors are rational and will invest in assets which provide the highest expected return for a particular level of risk.

2) Current market prices reflect all publicly available information.

[4] Fama, Eugene F., "Efficient Capital Markets: A Review of Theory and Empirical Work", Journal of Finance, May 1970, pp. 383-417.

[5] Morin, Roger A., "New Regulatory Finance", Public Utilities Reports, Inc., 2006, pp. 279-281.

3) Returns are independent in that today's market returns are unrelated to yesterday's returns as that information has already been processed.

4) The markets follow a random walk, i.e., the probability distribution of expected returns approximates the normal bell curve.

Brealey and Myers[6] state:

> When economists say that the security market is 'efficient', they are not talking about whether the filing is up to date or whether desktops are tidy. They mean that information is widely and cheaply available to investors and that all relevant and ascertainable information is already reflected in security prices.

There are three forms of the EMH, namely:

1) The "weak" form asserts that all past market prices and data are fully reflected in securities prices. In other words, technical analysis cannot enable an investor to "outperform the market".

2) The "semistrong" form asserts that all publicly available information is fully reflected in securities prices. In other words, fundamental analysis cannot enable an investor to "outperform the market".

3) The "strong" form asserts that all information, both public and private, is fully reflected in securities prices. In other words, even insider information cannot enable an investor to "outperform the market".

[6] Brealey, R.A. and Myers, S.C., "Principles of Corporate Finance". McGraw-Hill Publications, Inc., 1996, pp. 323-324.

The "semistrong" form is generally held as true because the illegal use of insider information can enable an investor to "beat the market" and earn excessive returns, thereby disproving the "strong" form.

Q. PLEASE EXPLAIN THE APPLICABILITY OF THE EMH TO YOUR DETERMINATION OF COMMON EQUITY COST RATE.

A. Common sense affirms the conceptual basis of the EMH as described above. In practical terms, this means that market prices paid for securities reflect all relevant information available to investors and that no degree of sophistication and/or analysis can enable investors to consistently outperform the market. Consequently, it confirms that all perceived risks are taken into account by investors in the prices they pay which reflect information inexpensively or freely available such as bond ratings; analyses of the rating agencies and financial analysts, and the various methodologies employed to determine common equity cost rate as discussed in the academic and financial literature. Thus, in an attempt to emulate investors' actions, it is necessary to take into account the results of multiple cost of common equity models.

Q. IS THERE SPECIFIC SUPPORT IN THE ACADEMIC AND FINANCIAL LITERATURE FOR THE NEED TO RELY UPON MULTIPLE COST OF COMMON EQUITY MODELS IN ARRIVING AT A RECOMMENDED COMMON EQUITY COST RATE?

A. Yes. For example, Phillips[7] states:

> Since regulation establishes a level of authorized earnings which, in turn, implicitly influences dividends per share, estimation of the growth rate from such data is an inherently circular process. *For these reasons, the 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'.* (Emphasis added) (p. 396)

* * *

> *Despite the difficulty of measuring relative risk, the comparable earnings standard is no harder to apply than is the market-determined standard. The DCF method, to illustrate, requires a subjective determination of the growth rate the market is contemplating. Moreover, as Leventhal has argued: 'Unless the utility is permitted to earn a return comparable to that available elsewhere on similar risk, it will not be able in the long run to attract capital'.* (Emphasis added) (p. 398)

Also, Morin[8] states:

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[7] Charles F. Phillips, Jr., The Regulation of Public Utilities – Theory and Practice, 1993, Public Utility Reports, Inc., Arlington, VA, p. 396, 398.

[8] Roger A. Morin, Regulatory Finance – Utilities' Cost of Capital, 1994, Public Utilities Reports, Inc., Arlington, VA, pp. 231-232, 239-240.

Each methodology requires the exercise of considerable judgment on the reasonableness of the assumptions underlying the methodology and on the reasonableness of the proxies used to validate a theory. *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.* Similarly, the inability of the CAPM to account for variables that affect security returns other than beta tarnishes its use. (Emphasis added)

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 an informed judgment. Reliance on any single method or preset formula is inappropriate when dealing with investor expectations because of possible measurement difficulties and vagaries in individual companies' market data. (Emphasis added) (Morin, p. 428)

* * *

The financial literature supports the use of multiple methods. Professor Eugene Brigham, a widely respected scholar and finance academician, asserts:[1](footnote omitted)

> Three methods typically are used: (1) the Capital Asset Pricing Model (CAPM), (2) the discounted cash flow (DCF) method, and (3) the bond-yield-plus-risk-premium approach. These methods are not mutually exclusive – no method dominates the others, and all are subject to error when used in practice. Therefore, when faced with the task of estimating a company's cost of equity, we generally use all three methods and then choose among them on the basis of our confidence in the data used for each in the specific case at hand. (Morin, p. 430)

Another prominent finance scholar, Professor Stewart Myers, in an early pioneering article on regulatory finance, stated:[2](footnote omitted)

> 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. Beta is helpful as one tool in a kit, to be used in parallel with DCF models or other techniques for interpreting capital market data. (Morin, p. 430)

Reliance on multiple tests recognizes that no single methodology produces a precise definitive estimate of the cost of equity. As stated in Bonbright, Danielsen, and Kamerschen (1988), '*no single or group test or technique is conclusive*.' Only a fool discards relevant evidence. (Emphasis in original) (Morin, p. 430)

* * *

While it is certainly appropriate to use the DCF methodology to estimate the cost of equity, there is no proof that the DCF produces a more accurate estimate of the cost of equity than other methodologies. Sole reliance on the DCF model ignores the capital market evidence and financial theory formalized in the CAPM and other risk premium methods. The DCF model is one of many tools to be employed in conjunction with other methods to estimate the cost of equity. *It is not a superior methodology that supplants other financial theory and market evidence. The broad usage of the DCF methodology in regulatory proceedings in contrast to its virtual disappearance in academic textbooks does not make it superior to other methods. The same is true of the Risk Premium and CAPM methodologies.* (Emphasis added) (Morin, p. 431)

Thus, the EMH requires the assumption that investors rely upon multiple cost of common equity estimation models.

B. Discounted Cash Flow Model (DCF)

1. Theoretical Basis

Q. WHAT IS THE THEORETICAL BASIS OF THE DCF MODEL?

A. DCF theory is based upon finding the present value of an expected future stream of net cash flows during the investment holding period discounted at the cost of capital, or the capitalization rate. The theory suggests that an investor buys a stock for an expected total return rate to be derived from cash flows in the form of dividends received plus appreciation in market price, i.e., the expected growth rate. Thus, the dividend yield on market price plus a growth rate equals the capitalization rate. The capitalization rate is the total return rate expected by investors.

Q. PLEASE COMMENT ON THE APPLICABILITY OF THE DCF MODEL IN ESTABLISHING THE COST RATE OF COMMON EQUITY CAPITAL.

A. As discussed supra, it is necessary to determine a common equity cost rate applicable to MGE which is based upon the proxy group which have been adjusted upward to reflect MGE's greater business risk attributable to its smaller size. My

assumption is that, aside from the size effect for MGE's smaller size which is not reflected in common equity cost rate derived from the proxy group (or SUG as an alternative), that the bond rating would be the equivalent of the average of Baa1 of the proxy group.

The DCF model has a tendency to mis-specify investors' required return rate when the market value of common stock differs significantly from its book value, as will be discussed infra in detail. Market values and book values of common stocks are seldom at unity. For example, the average market values of the proxy group have been in excess of their book values. So has MGE's, but much less so. As shown on page 4 of Schedule FJH-1, on February 13, 2009, the common stocks of the nine companies in the proxy group sold, on average, at 174.7% of their book values, while SUG's common stock sold below its book value, i.e., at just 76.6% of its book value.

A market-based DCF cost rate will result in a total annual dollar return on book common equity equal to the total annual dollar return expected by investors only when market and book values are equal. A DCF cost rate produces an investor-required return on the market value or price paid. The application of a market value

cost rate applied to a lower book value results in a lower dollar return than required by investors. There are many macroeconomic factors which influence market values. Regulatory actions can influence market values but cannot control them according to Bonbright (infra), which is affirmed by common sense.

2. Applicability of a Market-Based Common Equity Cost Rate to a Book Value Rate Base

Q. ARE THE MARKET PRICES OF PUBLIC UTILITIES' STOCKS INFLUENCED BY FACTORS WHICH ARE BEYOND THE INFLUENCE OF THE REGULATORY PROCESS?

A. Yes. For example, Phillips[9] states:

> *Many question the assumption that market price should equal book value, believing that 'the earnings of utilities should be sufficiently high to achieve market-to-book ratios which are consistent with those prevailing for stocks of unregulated companies*.' (Emphasis added)

In addition, Bonbright[10] states:

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[9] Id., p. 395.

[10] James C. Bonbright, Albert L. Danielsen and David R. Kamerschen, Principles of Public Utility Rates, 1998, Public Utilities Reports, Inc., Arlington, VA, p. 334.

> *In the first place, commissions cannot forecast, except within wide limits, the effect their rate orders will have on the market prices of the stocks of the companies they regulate. In the second place, whatever the initial market prices may be, they are sure to change not only with the changing prospects for earnings, but with the changing outlook of an inherently volatile stock market. In short, market prices are beyond the control, though not beyond the influence of rate regulation*. (Emphasis added)

Q. ASSUMING THAT MARKET PRICES ARE BEYOND THE CONTROL OF RATE REGULATION, DOES A DCF COST RATE REFLECT INVESTORS' REQUIRED RATE OF RETURN WHEN APPLIED TO A BOOK VALUE WHICH DIFFERS FROM ITS MARKET VALUE?

A. No. Under the DCF model, the rate of return investors require is related to the price paid for a stock. Thus, market price is the basis upon which investors formulate their required rate of return. A regulated utility (under the traditional rate base/rate of return paradigm) is limited to earning on its net book value (depreciated original cost) rate base. Market values diverge from book values for many reasons unrelated to allowed and/or achieved rates of earnings on book common equity ("ROEs"). Thus, when market values depart from book values, a market-based DCF cost rate applied to the book value of common equity will not reflect investors' expected common equity cost rate based on market prices. This is true because there are many macroeconomic factors which influence the demand for, and hence the market

prices of, common stocks in addition to company-specific earnings per share ("EPS") and dividends per share ("DPS"). Consequently, a market-based DCF cost rate applied to the book value per share will either overstate investors' required common equity cost rate when market value is less than book value or understate investors' required common equity cost rate when market value is above book value. In the late 1970's and early 1980's, when interest rates were extraordinarily high and the market-to-book ratios of utilities were below unity, the DCF model overstated investors' required common equity cost rate.

In recent years, as well as currently, with relatively low interest rates and utility market-to-book ratios consistently averaging well above one, the DCF model typically understates investors' required common equity cost rate. Those conditions emphasize the need to rely upon multiple cost of common equity models consistent with the EMH as discussed supra.

Q. HOW DOES A MARKET-BASED DCF COST RATE EITHER UNDERSTATE OR OVERSTATE INVESTORS' REQUIRED RATE OF RETURN?

A. The problem of understatement or overstatement of cost rate arises when a market-based DCF cost rate is applied to a book value per share of common equity which is less or greater than the market value, respectively. The examples on Schedule FJH-10 show how a significantly different book value results in either an understatement or overstatement of investors' required return rate which is based on market price, which is their investment. The hypothetical illustration on Schedule FJH-10 demonstrates that the expected market-based rate of return is either under-achieved or over-achieved. In the first hypothetical example (refer to columns 1 and 2), market price is 80% in excess of its book value and investors expect a total return rate of 10.00% on market price, based on a growth rate of 6.50% and a dividend yield of 3.50%. It is shown that when the 10.00% return rate is applied to the book value, which is only 55.54% of the market value, or $13.33, the opportunity for total annual return is only $1.333 on book value (10.00% x $13.33) and not $2.40 (10.00% return on $24 market value). With an annual dividend of $0.84, there is an opportunity to earn only $0.493 in growth which is just 2.05% on the $24 market price in contrast to the 6.50% growth rate expected by investors and subsumed in the market price paid. Conversely, if market value is less than book value (refer to columns 1 and 3 of Schedule FJH-10), a market-based DCF cost rate when applied

to a greater book value will result in an overstatement of investors' required rate of return on market price.

Q. HAVE ANY REGULATORY BODIES ADDRESSED THIS SITUATION?

A. Yes. Several examples of state regulatory commissions which have expressly addressed this problem are as follows:

The Pennsylvania Public Utility Commission has recognized this tendency by utilizing an adjusted DCF cost rate. It did so in re: Aqua Pennsylvania Water Company (R-00038805) in its Order entered August 8, 2004 and also in Pennsylvania Power & Light Company (R-00049255) in its Order entered December 22, 2004. In that Order, the PA PUC stated:

> We find it reasonable that a financial risk adjustment, as proposed by PPL, is necessary to compensate PPL for the mismatched application of a market-based cost of common equity to a book value common equity ratio. *The adjustment is necessary because the DCF method produces the investor-required return based on the current market price, not the return on the book value capitalization.* (Emphasis added)
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> * * *

The Indiana Utility Regulatory Commission (IURC) has recognized the tendency of the DCF model to understate the cost of equity when market value exceeds book value[11] when it stated:

> In determining a common equity cost rate, we must again recognize the tendency of the traditional DCF model, . . . to understate the cost of common equity. As the Commission stated in Indiana-Mich. Power Co. (BPU 8/24/90), Cause No. 38728, 116 PUR 4th 1, 17-18, *"the unadjusted DCF result is almost always well below what any informed financial analyst would regard as defensible, and therefore, requires an upward adjustment based largely on the expert witness's judgement."* (Emphasis added)

The Iowa Utilities Board (IUB) has recognized the tendency of the DCF model to understate investors' expected cost of common equity capital when market values are significantly above their book values. In its June 17, 1994 Final Decision and Order in Re U.S. West Communications, Docket No. RPU-93-9 the IUB stated:[12]

> While the Board has relied in the past on the DCF model, in *Iowa Electric Light and Power Company*, Docket No. RPU-89-9, "Final Decision and Order" (October 15, 1990), the Board stated: '[T]he DCF model may understate the return on equity in some circumstances. This is particularly true when the market is relatively volatile and the company in question has a market-to-book ratio in excess of one." Those conditions exist in this case and the Board will not rely on the

[11] Re: Indiana-American Water Company, Inc., Cause No. 39595, 150 PUR4th at 167-168.

[12] Re: U.S. West Communications, Inc., Docket No. RPU-93-9, 152 PUR4th at 459.

DCF return. (Consumer Advocate Ex. 367, See Tr. 2208, 2250, 2277, 2283-2284). *The DCF approach underestimates the cost of equity needed to assure capital attraction during this time of market uncertainty and volatility. The board will, therefore, give preference to the risk premium approach.* (Emphasis added)

3. Application of the DCF Model

a. Dividend Yield

Q. WHAT ARE THE RESULTS OF YOUR APPLICATION OF THE DCF MODEL?

A. As shown on Schedule FJH-11, the DCF cost rates range from 7.93% to 11.62% and average 9.82% for the nine companies in the proxy group. I rely upon the median cost rate of the group which is also 9.82%.

Q. WHAT ARE THE BASES FOR THE UNADJUSTED DIVIDEND YIELDS SHOWN IN COLUMN 1 OF SCHEDULE FJH-11?

A. The recent volatility of the stock market confirms that spot prices should not be relied on exclusively. Conversely, reliance on too long a historical period would not be representative of the future. Consequently, I rely on an average of recent spot dividend yield at February 13, 2009 and an average of dividend yields for December 2008 and January 2009 as shown by company/group on Schedule FJH-12.

b. Discrete Adjustment of Dividend Yield

Q. PLEASE EXPLAIN THE ADJUSTMENTS FOR DISCRETE GROWTH IN DIVIDENDS AS SHOWN IN COLUMN 2 OF SCHEDULE FJH-11.

A. Due to the fact that dividends are paid quarterly, or periodically, as opposed to continuously (daily), an adjustment must be made. This is often referred to as the discrete, or the Gordon Periodic, version of the DCF model.

Since companies tend to increase their quarterly dividend at different times of the year, a reasonable assumption is to reflect one-half the annual dividend growth rate in the D_1 expression, or $D_{1/2}$. This is a conservative approach so as not to overstate the dividend yield which should be representative of the next twelve-month period. Therefore, the actual average dividend yields in Column 1 on Schedule FJH-11, have been adjusted upward to reflect one-half the growth rates in Column 4 on the same Schedule. The resultant average adjusted dividend yield for the proxy group is 4.06% and the median adjusted dividend yield is 3.72% as shown in Column 3 of Schedule FJH-11. SUG's adjusted dividend yield is 4.69%. The details of the unadjusted dividend yields by company for the proxy group and SUG are shown on Schedule FJH-12.

c. DCF Growth Rates

Q. PLEASE EXPLAIN THE BASIS OF THE GROWTH RATES WHICH YOU USE IN YOUR APPLICATION OF THE DCF MODEL, AS SHOWN IN COLUMN 4 OF SCHEDULE FJH-11.

A. It is shown on Schedule FJH-13 that, on average, individuals own about 48% of the common shares of the companies in the proxy group, while the median is about 42%, and only about 25% of the shares of SUG. I believe that individual investors are very likely to rely on information provided by securities analysts whose forecasts provide meaningful insight into prospective growth in per share value than reliance on historical accounting measures of growth. Analysts' forecasts, which incorporate historical information, are readily available from Value Line and other sources such as Reuters. The Reuters estimates are readily available on the internet. In many instances the Reuters estimate is the mean of a number of estimates. While investors are influenced by short-term earnings growth such as forecasts for the next 12 months, I believe that they are much more influenced by longer term five-year forecasts. The use of five-year forecasts (the longest period available) is more consistent with the long-term investment horizon implicit in common stocks than single 12 month growth rates. EPS growth rate expectations, although they do not fully account for changes in market value, are the most significant of all accounting

measures of value. It should be clear, even to the casual market observer, that the market reacts favorably when EPS expectations are met or exceeded and unfavorably when they are not.

In view of the foregoing, I rely upon the average projected long-term growth rate in EPS from Value Line and Reuters as shown on page 1 of Schedule FJH-14 by company and group as well as for SUG. I considered all of the growth rates from a low of 3.75% to a high of 7.90% for the proxy group and included them in the calculation of DCF cost rates as shown in column 4 on Schedule FJH-11 as well as SUG's growth rate of 9.05%. Pages 2 through 11 of Schedule FJH-14 contain the most recent Value Line Investment Survey for all nine companies in the proxy group and SUG.

4. Conclusion of DCF Cost Rate

Q. PLEASE SUMMARIZE YOUR CONCLUSION OF DCF COST RATE FOR THE PROXY GROUP, AND SUG AS AN ALTERNATIVE.

A. The DCF cost rates are shown in column 5 on Schedule FJH-11. As can be seen, for the proxy group they range from 7.93% to 11.62%. The average and median for the group is 9.82% and I rely upon the median. Also shown in Column 5 is SUG's DCF

cost rate of 13.74%.

C. The Risk Premium Model (RPM)

1. Theoretical Basis

Q. PLEASE DESCRIBE THE THEORETICAL BASIS OF THE RPM.

A. The RPM is based upon the theory that the cost of common equity capital is greater than the prospective company-specific cost rate for long-term debt capital. In other words, it is the expected cost rate for long-term debt capital plus a premium to compensate common shareholders for the added risk of being unsecured and last-in-line in any claim on the corporation's assets and earnings.

Q. COULD IT BE SAID THAT THE RPM IS ANOTHER FORM OF THE CAPM?

A. Yes, but there is a very significant distinction between the two models. The RPM and CAPM both add a "risk premium" to an interest rate. However, the beta approach to the determination of an equity risk premium in the RPM should not be confused with the CAPM. Beta is a measure of systematic, non-diversifiable, market risk which is usually a much smaller percentage of total investment risk, the sum of both diversifiable and non-diversifiable risks. Diversifiable, i.e., unsystematic or

company-specific, risks are reflected in the RPM because the prospective company-specific long-term bond yield is the result of a bond rating process which includes an assessment of all diversifiable business and financial risks. This reality is verifiable by reading S&P's description of its bond rating process which is contained in Schedule FJH-2, pages 3 through 9. In contrast, the use of a U.S. Government Security as the risk-free rate of return in the CAPM, by definition, reflects no diversifiable, company-specific risk. Clearly, the RPM and CAPM are two separate and distinct cost of common equity models, a fact recognized in the financial literature.

Q. PLEASE DESCRIBE YOUR RPM ANALYSIS.

A. It is shown in Schedule FJH-15. As can be gleaned from page 1, I have estimated the projected bond yield on Moody's A rated utility bonds to be 6.49%, while the actual for the month of January 2009 was 6.39%. The average bond rating for the proxy group is Moody's Baa1 and an adjustment is required to be made in order to be reflective of its Baa1 rating as shown on page 1 of Schedule FJH-15 on line 4. The sum of the prospective bond yield and equity risk premium equals the RPM-derived common equity cost rate applicable to each.

2. Bond Yields

Q. PLEASE EXPLAIN THE BASIS OF THE EXPECTED BOND YIELDS OF 6.89% APPLICABLE TO THE PROXY GROUP AND 7.09% APPLICABLE TO SUG SHOWN ON LINE 5, PAGE 1 OF SCHEDULE FJH-15.

A. Because the cost of common equity is prospective as is the ratemaking process, the prospective yield on similarly-rated long-term debt is most appropriate. The Moody's and S&P bond ratings for the proxy group and SUG are shown on Schedule FJH-15, page 2. I relied upon the consensus forecasts of approximately 50 economists of the expected yields on Moody's Aaa rated corporate bonds for the six calendar quarters ending with the second calendar quarter of 2010 as derived from the February 1, 2009 Blue Chip Financial Forecasts as shown on page 7 of Schedule FJH-15. As shown on line 1, page 1 of Schedule FJH-15, the average expected yield on Moody's Aaa rated corporate bonds is 5.08%. It is necessary to adjust that average yield of 5.08% upward in order to be equivalent to the average Moody's Baa1 bond rating yield of the proxy group and to the Baa3 bond rating yield of SUG, which is accomplished through the adjustments on lines 2 and 4 of Schedule FJH-15, page 1, and explained in Notes 2 through 4 on the same page. Accordingly, the average prospective yield on Moody's Baa1 and Baa3 rated public utility bonds are 6.89% and 7.09%, respectively as shown on line 5, page 1 of Schedule FJH-15.

Q. HOW WOULD YOU CHARACTERIZE THE PROJECTED YIELD ON BAA3 RATED UTILITY BONDS OF 7.09% GIVEN CURRENT MARKET CONDITIONS?

A. It is quite low based on current market conditions. The yield differentials currently between utility bonds rated A and those rated Baa is 155 basis points as shown on page 4 of Schedule FJH-15. In contrast, it is shown on Schedule FJH-17 that the average yield differential for the period January 2004 through January 2009 was just 37 basis points. For the reasons discussed infra in the "Estimation of Equity Risk Premium" section as well as in the "Conclusion of Common Equity Cost Rate" section of this testimony, and in Notes 3 and 4 on page 1 of Schedule FJH-15, it is more appropriate to rely upon a normalized yield differential of just 60 basis points between utility bonds rated Baa and those rated A.

3. Estimation of the Equity Risk Premium

Q. PLEASE EXPLAIN THE BASIS OF THE EQUITY RISK PREMIUM WHICH YOU HAVE DETERMINED TO BE APPLICABLE TO THE PROXY GROUP AND SUG.

A. I evaluated the results of two different historical equity risk premium studies, as well as Value Line's forecasted total annual return on the market over the prospective yield on Aaa rated corporate bonds. These analyses are summarized on page 5 of Schedule FJH-15. As shown on line 3 of page 5, the average equity risk premiums based on both studies are 5.47% applicable to the proxy group and 7.41% applicable to SUG. The 5.47% is the average of the arithmetic mean historical and the projected market equity risk premiums allocated to the proxy group by the use of the median beta of the proxy group of 0.70 in order to indicate its equity risk premium in addition to that based upon the mean of holding period returns of the S&P Utility Index for the period 1928 through 2007 over the mean yield on Baa rated public utility bonds over the same period. Similar calculations for SUG, using its beta of 1.10% and the long-term holding period equity risk premium of the S&P Utility Index over Baa rated utility bonds indicates a 7.41% risk premium applicable to SUG.

Q. PLEASE EXPLAIN THE BASIS OF THE EQUITY RISK PREMIUMS APPLICABLE TO THE PROXY GROUP, AND SUG AS AN ALTERNATIVE, AS SHOWN ON LINE 1, PAGE 5, SCHEDULE FJH-15.

A. Equity risk premiums determined through the application of beta are meaningful because the betas were derived from regression analyses of the market prices of common stocks. The market prices of those common stocks reflect investors' expectations over a long-term future investment horizon. Consequently, beta is a meaningful measure of prospective risk relative to the market as a whole and is thus a logical means by which to allocate a relative share of total market equity risk premium to a specific company or proxy group.

Q. WHAT AVERAGE TOTAL MARKET EQUITY RISK PREMIUM DID YOU UTILIZE?

A. I utilized 9.71%, as shown on page 6, line 7 of Schedule FJH-15, which is based upon a weighting of 80% to the long-term average historical equity risk premium of 6.20% and 20% to the forecasted market equity risk premium of 23.77%, as shown on page 6, lines 3 and 6, respectively, of Schedule FJH-15.

To derive the historical market equity risk premium of 6.20%, I used the most recent Morningstar data on holding period returns for the S&P 500 Composite Index and the average historical yield on Moody's Aaa and Aa corporate bonds covering the period 1926-2007. The use of holding period returns over a very long period of time is useful in the application of the beta approach.

Q. IS THERE SUPPORT IN THE FINANCIAL LITERATURE FOR THIS APPROACH?

A. Yes. Morningstar, in its Valuation Edition – 2008 Yearbook provides sound reasoning why the use of a long-term historical time period is appropriate to estimate the expected equity risk premium. Morningstar demonstrates empirically through tests of serial correlation that equity risk premia are random. Morningstar also explains why the arbitrary use of shorter time periods distorts the results of estimated long-term average market equity risk premia. Moreover, the arbitrary use of shorter time periods is contrary to the long-term randomness of equity risk premia. Consequently, the use of the long-term average equity risk premium provides stability in contrast to the volatility associated with the arbitrary use of shorter historical time periods.

Q. ARE THERE OTHER REASONS THAT SUPPORT THIS APPROACH?

A. Yes. The use of a long-term average is consistent with the long-term investment horizon implicit in the cost of common equity capital, as exemplified by the premise of infinity in the standard DCF model used in rate regulation. Morningstar's full explanation of why the use of the long-term average equity risk premium is appropriate is provided at pages 5 through 8 of Schedule FJH-16.

Q. WHAT DO YOU CONCLUDE FROM THIS?

A. In view of the foregoing and all of Morningstar's comments contained in Schedule FJH-16, it is clear that the arbitrary selection of shorter historical periods would be highly suspect. Such periods would likely contain the 1987 stock market crash, the collapse of the Soviet Union, the two wars with Iraq, extraordinary inflation rates and other significant events. Therefore, the use of shorter historical time periods is unlikely to be representative of the amount of change which could occur over a long period of time in the future (the presumed long-term holding period for common stocks as is implicit in the various cost of common equity models). Thus, the use of a very long past period to estimate the equity risk premium is consistent with the long-term investment horizon for utilities' common stocks and is critical to proper estimation of the long-term future.

Q. WHAT MEAN SHOULD BE USED?

A. The arithmetic mean of those long-term historical total return rates on the market as a whole is the appropriate mean for use in estimating the cost of capital because it provides essential insight into the potential variance of expected returns. A full explanation by Morningstar as to why the arithmetic mean must be used when

discounting future cash flows for estimating the cost of capital is contained in pages 2 through 4 of Schedule FJH-16.

Historical total returns and equity risk premium spreads differ in size and direction over time. It is precisely for this reason that the arithmetic mean is important. It is the arithmetic mean which provides insight into the variance and standard deviation of returns. It is the prospect for, and degree of, variance which provides the insight required by investors to estimate risk when contemplating making an investment. Insight into the variance can only be obtained by the use of the arithmetic mean of historical returns. Absent valuable insight into the potential variance of returns, there can be no meaningful evaluation of prospective risk. If investors relied upon the geometric mean of historical returns, they would have no insight into the potential variance of future returns because the geometric mean relates the change over many periods to a constant rate of change, thereby obviating the year-to-year fluctuations, or variance, critical to risk analysis.

The basis of the historical market equity risk premium of 6.20% is detailed in lines 1 through 3, page 6, Schedule FJH-15.

Q. WHY DO YOU ALSO CONSIDER GIVING SOME WEIGHT TO A FORECASTED EQUITY RISK PREMIUM?

A. The long-term historical arithmetic average market equity risk premium is the most likely to be experienced over a long-term prospective period. Also, a prospective element is contained in the use of beta because beta is derived from market prices which reflect expectations of the future and is utilized in conjunction with the prospective yields on Baa1 and Baa3 rated public utility bonds. Consequently, it is also appropriate to view the potential for market price appreciation in the current market environment. Such a period of up to about five years, based upon Value Line's forecasted market appreciation and dividend yield on its market universe, is something that investors would certainly be aware of, especially since approximately 48% of investors in the proxy group are individuals, who are likely to rely upon Value Line as discussed supra. Because the potential for growth in the DCF model is market price appreciation, when estimating the equity risk premium by use of the RPM model, it is also appropriate to take the potential for market price appreciation into account to some degree.

Q. YOU STATED SUPRA THAT YOU GIVE 20% WEIGHT TO THE FORECASTED MARKET EQUITY RISK PREMIUM AND 80% WEIGHT

TO THE LONG-TERM HISTORICAL AVERAGE. PLEASE EXPLAIN WHY.

A. Because the cost of capital is expectational, it is clear that investors' expectations are influenced by, among other things, forecasts of future performance of the market as well as for specific companies and industries.

Q. CAN YOU PROVIDE AN EXAMPLE?

A. Yes. The recent financial crisis has resulted in a substantial decline in market values with a concurrent flight to safety, i.e., greater investment in U.S. government securities and better quality debt such as that rated Aaa and/or Aa in the corporate and utility sectors. On Schedule FJH-17, I have shown the yield differentials (spreads) between Moody's A and Baa rated utility bonds from January 2004 through January 2009. As can be seen, the spread averaged 37 basis points which is a norm in contrast to the recent spread of 155 basis points discussed supra and attributable to the current international financial crisis due to investors' flight to safety. As a result, currently the cost of debt capital is higher and so therefore, is the cost of common equity capital.

Q. WHAT IS THE IMPACT OF THIS FOR PURPOSES OF YOUR TESTIMONY?

A. The potential for market price appreciation is now so great (148% as indicated in Note 1 on page 3 of Schedule FJH-18 that, while some weight must be given to it, the weight must be tempered so that when combined with the long-term historical average a realistic prospect for long-term growth is obtained as opposed to the huge potential which exists for market speculators that invest on a short-term basis. Keeping in mind that for ratemaking purposes, a long-term investment horizon is assumed. Consequently, I believe that weight such as 20% must be given to the projected potential for market price appreciation because exclusive reliance upon historical data will not properly reflect the significant increase in risk which has effected both debt and common equity capital.

Q. DO YOU HAVE ANY SUPPORT FOR THIS APPROACH?

A. Yes. For example, Roger Ibbotson, the founder of Ibbotson Associates, which is a wholly-owned subsidiary of Morningstar, Inc. and Professor of Finance at the Yale School of Management, recently stated that reliance upon historical statistics such as standard deviation are not reflective of current and prospective risk.

Q. PLEASE ELABORATE.

A. In a conference call interview with Paul D. Kaplan of Morningstar on December 17, 2008[13], the following interchange occurred between Kaplan and Professor Ibbotson:

> **Kaplan**: Dr. Ibbotson, is the economy fundamentally unstable or does it self-stabilize? It is curious that economists of every stripe right now are calling for aggressive government action regardless of what theory they normally subscribe to.
>
> **Ibbotson**: The economy has lots of self-stabilizing features, and it has other features that are destabilizing. Most of the time the economy is stabilizing, but certainly, I won't argue that the situation is stable now; instead, we have discontinuities here of an extreme sort.
>
> But there are also behavioral aspects of this. *I think the risks are definitely much higher than you might think of just looking at standard deviation, not only from the mathematical aspects of other measures of risk, but also from the way people react when they have the bad result. People often have the bad result at the same time they are losing their human capital income. They're losing all of their wealth at the same time, so they tend to be much more risk-averse than standard economics would show them to be. There is a lot of risk, and there's more risk than we think.* (Emphasis added)
>
> * * *
>
> **Kaplan**: Our readers are getting a lot of questions from their clients about what they should do. What kinds of things should advisors be discussing with their clients?
>
> **Ibbotson**: *I would be saying that when markets pull out of calamities, they often have their highest returns*. We had the highest return ever in 1933 in the midst of a severe depression. You get the extreme pullout when things start to get a bit better. The markets in general move ahead of what's actually happening in the economy.

[13] Morningstar Advisor, February 2, 2009.

> *The risk premium on stocks has gone way up because of the fact that investors now recognize that there is much more risk in the market than they had recognized*. Stocks may not be done dropping, especially in light of what's happened to the financial system, and I don't know when it's going to start to straighten out, but ultimately, in the long run, stocks are a good investment. (Emphasis added)

Q. WHAT DOES THIS MEAN FOR PURPOSES OF THIS CASE?

The foregoing affirms that currently and prospectively, there is much greater risk to investors and that they require an equity risk premium commensurate with that greater risk which certainly exceeds an equity risk premium based solely on historical indicators. Consequently, I utilize a weighted market equity risk premium of 9.71% is shown on line 7, page 6 of Schedule FJH-15 and explained in Note 5 on the same page.

Application of the median beta of the proxy group of 0.70 and SUG's beta of 1.10 on line 8 to the weighted average (80% historical and 20% forecast) market equity risk premium of 9.71% on line 7 results in equity risk premiums of 6.80% for the proxy group and 10.69% for SUG as shown on line 9, page 6 of Schedule FJH-15 and on line 1, page 5 of Schedule FJH-15.

Q. PLEASE DESCRIBE THE DERIVATION OF THE EQUITY RISK PREMIUM OF 4.13% SHOWN FOR THE PROXY GROUP AND SUG ON PAGE 5, LINE 2 OF SCHEDULE FJH-15.

A. For the reasons described supra by Morningstar, I caused to be performed an analysis of the arithmetic mean of long-term historical holding period returns applicable to public utilities, i.e., the S&P Public Utility Index for the period 1928-2007, relative to the arithmetic mean yield on Moody's Baa rated public utility bonds for the same period. The use of long-term averages provides a good basis for estimating future expectations as all types of events are included, even "unusual" ones. As noted supra, the average equity risk premium was 4.13% over the yield on Baa rated utility bonds, as shown on line 3, page 5 of Schedule FJH-15.

Q. WHAT IS YOUR CONCLUSION OF THE EQUITY RISK PREMIUM APPLICABLE TO THE PROXY GROUP, AND SUG EMPLOYED AS AN ALTERNATIVE?

A. The resultant equity risk premiums are 5.47% applicable to the proxy group and 7.41% applicable to SUG as shown on page 1, line 6 and page 5, line 3 of Schedule FJH-15, which is the average of lines 1 and 2 on page 5.

4. Conclusion of RPM Cost Rate

Q. WHAT ARE THE RESULTANT RPM COST RATES APPLICABLE TO THE PROXY GROUP AND SUG?

A. As shown on Schedule FJH-15, page 1, line 7, they are 12.36% applicable to the proxy group and 14.50% applicable to SUG. Had I relied upon the actual January average yield on A rated public utility bonds of 6.39% (which is just 10 basis points lower than the forecasted yield of 6.49%), the cost rates would have been 12.26% for the proxy group and 14.40% for SUG.

D. The Capital Asset Pricing Model (CAPM)

1. Theoretical Basis

Q. IS THE CAPM WIDELY USED BY INVESTORS TO ESTIMATE COMMON EQUITY COST RATE?

A. Yes. As noted supra, the financial literature is replete with the need to rely upon multiple methods and those methods include the CAPM.

Eugene F. Brigham and Phillip R. Daves[14] state:

[14] Eugene F. Brigham and Phillip R. Daves, Intermediate Financial Management, Ninth Edition, Thomson/South-Western, 2007, pp. 332-333.

> *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, use the CAPM*. This is in sharp contrast to a 1982 survey, which found that only 30% of respondents used the CAPM. Approximately 16% now use the DCF approach, down from 31% in 1982. The bond-yield-plus-risk-premium is used primarily by companies that are not publicly traded. (Emphasis added)

Q. PLEASE EXPLAIN THE THEORETICAL BASIS OF THE CAPM.

A. The CAPM defines risk as the covariability of a security's returns with the market's returns. This covariability is measured by beta ("β"), an index measure of an individual security's variability relative to the market. A beta less than 1.0 indicates lower variability than the market and a beta greater than 1.0 indicates greater variability than the market.

The CAPM assumes that all non-market, or unsystematic, risk can be eliminated through diversification. The risk that cannot be eliminated through diversification is called market, or systematic, risk. The model presumes that investors require compensation for risks that cannot be eliminated through diversification. Systematic risks are caused by socioeconomic events that affect the returns on all assets. In essence, the model is applied by adding a risk-free rate of return to a market risk premium. This market risk premium is adjusted proportionally to

reflect the systematic risk of the individual security relative to the market as measured by beta.

The **traditional CAPM** is expressed as:

$$R_S = R_F + \beta(R_M - R_F)$$

Where R_S = Return rate on the common stock

R_F = Risk-free rate of return

R_M = Return rate on the market as a whole

β = Adjusted beta (volatility of the security relative to the market as a whole)

Numerous tests of the CAPM have confirmed its validity. These tests have measured the extent to which security returns and betas are related as predicted by the CAPM.

The **empirical CAPM ("ECAPM")**, discussed by Morin, reflects the reality that the empirical Security Market Line ("SML") described by the traditional CAPM is not

as steeply sloped as the predicted SML. An empirical study by Morin[15] indicates that the ECAPM should be expressed as:

$$K = R_F + 0.25(R_M - R_F) + 0.75\beta(R_M - R_F)$$[16]

Morin[17] further 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, 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

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15 Typical of the empirical evidence on the validity of the CAPM is a study by Morin (1989) who found that the relationship between the expected return on a security and beta over the period 1926-1984 was given by:

$$\text{Return} = 0.0829 + 0.0520\ \beta$$

Given that the risk-free rate over the estimation period was approximately 6% and that the market risk premium was 8% during the period of study, the intercept of the observed relationship between return and beta exceeds the risk-free rate by about 2%, or ¼ of 8%, and that the slope of the relationship is close to ¾ of 8%. Therefore, the empirical evidence suggests that the expected return on a security is related to its risk by the following approximation:

$$K = R_F + x(R_M - R_F) + (1 - x)\beta(R_M - R_F)$$

Where x is a fraction to a be determined empirically. The value of x that best explains the observed relationship Return = 0.0829 + 0.0520 β is between 0..25 and 0.30. If x = 0.25, the equation becomes:

$$K = R_F + 0.25(R_M - R_F) + 0.75\beta(R_M - R_F)$$

16 Id., at pp. 189-190.

17 Id., at p. 191.

> 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.

Therefore, the ECAPM is a return adjustment, i.e., a y-axis adjustment and does not increase the adjusted beta, which is an x-axis adjustment that accounts for regression bias.

As a result of the foregoing, I apply both versions of the model (CAPM and ECAPM) which are contained in Schedule FJH-18.

2. Risk-Free Rate of Return

Q. PLEASE DESCRIBE YOUR SELECTION OF A RISK-FREE RATE OF RETURN.

A. My applications of the CAPM and the ECAPM reflect a risk-free rate of 3.38%. It is based upon the average consensus forecast of the reporting economists in the February 1, 2009 issue of Blue Chip Financial Forecasts for the yields on 30-year U.S. Treasury Notes for the six quarters ending with the second calendar quarter 2010 as shown in Note 2 on page 3, Schedule FJH-18.

Q. IS THE AVERAGE PROSPECTIVE YIELD ON 30-YEAR U.S. TREASURY NOTES APPROPRIATE FOR USE AS THE RISK-FREE RATE?

A. Yes. The yield on 30-year T-Notes is almost risk-free and its term is consistent with the long-term cost of capital to public utilities measured by the yields on public utility bonds and more closely matches the long-term investment horizon inherent in utilities' common stocks. Moreover, it is consistent with the long-term investment horizon, which is presumed to be infinite, in the standard DCF model employed in proceedings such as these. In addition, Morningstar[18] states:

> A common choice for the nominal riskless rate is the yield on a U.S. Treasury Security. The ability of the U.S. government to create money to fulfill its debt obligations under virtually any scenario makes U.S. Treasury securities practically default-free. While interest rate changes cause government obligations to fluctuate in price, investors face essentially no default risk as to either coupon payment or return of principal.
>
> * * *
>
> The horizon of the chosen Treasury security should match the horizon of whatever is being valued. *When valuing a business that is being treated as a going concern, the appropriate Treasury yield should be that of a long-term Treasury bond*. Note that the horizon is a function of the investment, not the investor. If an investor plans to hold stock in a company for only five years, the yield on a five-

[18] Stocks, Bonds, Bills and Inflation: 2008 Yearbook – Valuation Edition, Morningstar, Inc., Chicago, IL, p. 59.

year Treasury note would not be appropriate since the company will continue to exist beyond those five years. (Emphasis added)

In summary, the average expected yield on 30-year Treasury Notes is the appropriate proxy for the risk-free rate in the CAPM because it is almost risk-free and has a long-term investment horizon consistent with utilities' common stocks (not individual investors) and is thus consistent with the long-term investment horizon (which is actually assumed to be infinity) in the standard DCF model.

3. Market Equity Risk Premium

Q. PLEASE EXPLAIN THE BASIS FOR YOUR ESTIMATION OF THE EXPECTED MARKET EQUITY RISK PREMIUM.

A. I estimate investors' expected total return rate which is based on the same weighting of forecasted and long-term historical return rates for the same reasons discussed supra regarding the equity risk premium position of my RPM analysis, i.e., 80% weighting to historical and 20% to forecasted, from which I subtract the risk-free rate. The result is a market equity risk premium of 10.77%, which must be allocated to the proxy group and SUG. I make the allocations of the market equity risk premium through the use of the median beta of the proxy group of 0.70 and SUG's beta of 1.10.

The basis of the projected market equity risk premium is explained in detail in Note 1 on page 3, Schedule FJH-18. The 3-5 year total market appreciation projection, when converted to an annual rate plus the market's average dividend yield equals a forecasted total annual return rate of 28.85%. The long-term historical total annual arithmetic mean return rate of 12.30% on the market is from Table 2-1 on page 28 of Stocks, Bonds, Bills and Inflation: Valuation Edition – 2008 Yearbook (Morningstar, Inc.). The relevant risk-free rate was deducted from the total market return rate. For example, from the Value Line projected total market return of 28.85%, the forecasted average risk-free (income return) rate of 3.38% was deducted indicating a forecasted market risk premium of 25.47% which was given 20% weight for the reasons discussed supra. From the arithmetic mean long-term historical total return rate of 12.30% the long-term historical income return rate on long-term U.S. Government Securities of 5.20% was deducted indicating an historical equity risk premium of 7.10% which was given 80% weight for the reasons discussed supra. Thus, the weighted market risk premium is 10.77%.

4. Conclusion of CAPM Cost Rate

Q. WHAT ARE THE RESULTS OF YOUR APPLICATIONS OF THE CAPM

AND ECAPM?

A. They are shown on page 1 of Schedule FJH-18. The average of the median CAPM and ECAPM cost rates applicable to the proxy group is 11.33% and for SUG, it is 15.10%.

E. CEM Analysis

1. Theoretical Basis

Q. PLEASE DESCRIBE THE THEORETICAL BASIS OF THE CEM.

A. The comparable earnings standard recognizes the fundamental economic concept of opportunity cost. This concept states that the cost of using any resource – land, labor and/or capital – for a specific purpose is the return that could have been earned in the next best alternative use. The opportunity cost to an investor in a utility's common stock is what that capital would yield in an alternative investment of similar risk. The opportunity cost principle is consistent with one of the fundamental principles of utility price regulation, i.e., it is intended to act as a surrogate for the competition of the marketplace.

The problem in using returns on book equity (the ROEs) of non-price regulated companies is determining whether such companies are similar in risk to the price-regulated utility.

Q. PLEASE EXPLAIN.

A. The ROEs of other similar price-regulated firms should not be relied upon because they reflect the results of regulatory awards which may not be indicative of what could have been earned in a competitive market. Moreover, to use such returns as a primary method to establish a cost of equity would be an exercise in circularity. Consequently, application of the CEM is most appropriately implemented by examining the ROEs of similar risk, domestic, non-price regulated firms.

In a more competitive environment for energy utilities, the concept of observing the rates of earnings on book equity, or net worth, of comparable non-price regulated firms has greater relevance than ever despite a long regulatory history for the use of the comparable earnings method. Moreover, the use of ROEs of comparable non-price regulated firms is appropriate because:

1) Under the rate base/rate of return paradigm, the rate of return (including the rate of return on common equity) is applied to a rate base measured at original (i.e., book) cost;

2) As discussed supra, many socioeconomic factors influence market prices other than company-specific EPS and/or DPS. Thus, when market values differ from their book values, market-based DCF cost rates either understate or overstate the rates of earnings required on book equity (i.e., the common equity financed portion of an original cost rate base); and

3) As also discussed supra, regulatory decisions can influence, but cannot control market prices.

2. Application of the CEM

Q. HOW DID YOU APPROACH YOUR CEM ANALYSIS?

A. My CEM analysis is set forth in Schedule FJH-19. Page 1 contains the relevant data for the domestic, non-price regulated, companies which are assumed comparable in total risk to the proxy group of nine LDCs. Page 2 contains data for the domestic non-price regulated companies which are comparable in total risk to SUG. Page 3 contains the notes to pages 1 and 2.

It is critical to the application of the CEM to select proxy groups of non-price regulated companies which are similar in total risk to the proxy group of nine LDCs and SUG. In each instance, the proxy group of comparable non-price regulated firms should be broad-based in order to obviate individual company-specific aberrations. Utilities should be eliminated to avoid circularity since the rates of return on their book common equity are substantially influenced by the rate determinations of their respective regulatory commissions, many of which are the result of negotiated settlements and are not truly market-based cost rates.

3. Selection of Market-Based Companies of Similar Risk

Q. IS YOUR APPLICATION OF THE CEM MARKET-BASED?

A. Yes. My application of the CEM is market-based because the selection of the comparable non-price regulated firms is based upon statistics derived from the market prices paid by investors. Specifically, I rely upon the betas and related statistics derived from Value Line regression analyses of weekly market prices over the most recent 260 weeks (five years). The bases of selection resulted in proxy groups of non-price regulated firms comparable to the utility proxy group and SUG. The average company in the proxy groups of non-price regulated companies is comparable to the average company in the utility proxy group and SUG,

respectively. Total risk is the sum of non-diversifiable market risk and diversifiable company-specific risks.

Q. WHAT CRITERIA DID YOU USE IN THE SELECTION OF THE NON-PRICE REGULATED FIRMS?

A. My criteria are as follows:

1) They must be covered by Value Line Investment Survey (Standard Edition).

2) They must be domestic, non-price regulated companies, i.e., non-utilities.

3) Their betas must lie within plus or minus two standard deviations of the average unadjusted beta of the utility proxy group and SUG, respectively.

4) The residual standard errors of the regressions must lie within plus or minus two standard deviations of the average residual standard error of the regression for the utility proxy group and SUG, respectively.

Betas are a measure of market, or systematic, risk. The standard errors of the regressions were used to measure each firm's company-specific risk (diversifiable, unsystematic risk). The standard errors of the regressions measure the extent to which events specific to a company affect its stock price. Because market prices reflect investors' perceptions of total risk, all risk which is not systematic market risk (beta) is reflected in the standard error of the regression which is a measure of total

non-systematic risk which is diversifiable. In essence, companies which have similar betas and similar standard errors of the regressions have similar total investment risk, i.e., the sum of non-diversifiable market risk and diversifiable company-specific risk. The betas and standard errors result from regression analyses of market prices which reflect all perceived risks consistent with the EMH. Consequently, the use of those regression statistics results in proxy groups of non-price regulated domestic firms which are similar in total investment risk to the utility proxy group and SUG, respectively. The use of two standard deviations captures 95.50% of the distribution of unadjusted betas and standard errors thereby assuring comparability of total risk.

Q. PLEASE DISCUSS THE RESULTS OF YOUR CEM ANALYSES.

A. After assuring comparability through the use of betas and standard errors as discussed supra, I reviewed Value Line's five-year projected ROEs for the companies in each group. I then performed a test (Student's T-Statistic) to assure that I would not rely upon any ROE(s) that were statistical outliers. There were no statistical outliers in the non-price regulated companies similar to the utility proxy group and only one in the group comparable to SUG as indicated by Note 6 on page 3 of Schedule FJH-19.

The median projected ROEs are 22.00% based upon the group comparable to the utility proxy group and 15.50% based upon the group comparable to SUG. The CEM cost rate of 22.00% is on the high side and so far outside the range of common equity cost rates indicated for the proxy group of nine LDCs through use of the DCF, RPM and CAPM/ECAPM models, i.e., 9.82% - 12.36% as shown on Schedule FJH-1, page 1, that it is not meaningful and therefore is not included in my determination of the 11.25% common equity cost rate applicable to MGE. In contrast, the median ROE of 15.50% of the non-price regulated companies comparable to SUG is barely beyond the range of SUG's cost rates based on DCF, RPM and CAPM/ECAPM models, i.e., 13.74% - 15.10%. Consequently, the CEM result based on SUG of 15.50% is included in my conclusion of common equity cost rate applicable to SUG if the Commission is again going to rely, albeit erroneously, on SUG to establish a rate of return applicable to MGE's rate base.

In view of the foregoing, I have excluded the CEM analysis result from the formulation of my recommended common equity cost rate based upon the proxy group of nine LDCs of 11.25%, but have included it in the formulation of my

alternative common equity cost rate of 15.25% based on SUG and applicable to SUG's common equity ratio of 38.66%.

XI. CONCLUSION OF COMMON EQUITY COST RATE

A. Conclusion of Common Equity Cost Rate Must be Based on the Application of Multiple Models

Q. PLEASE SUMMARIZE WHY THE CONCLUSION OF COMMON EQUITY COST RATE MUST BE BASED UPON MULTIPLE COST OF COMMON EQUITY MODELS.

A. As discussed supra, the EMH and common sense mandate the use of multiple market-based cost of common equity models. All of the models which I have utilized are market-based.

1) The DCF Model utilizes market prices paid by investors.

2) The RPM utilizes the expected market yield on company-specific long-term debt and the equity risk premium based upon an expectation of the market equity risk premium.

3) The CAPM and ECAPM utilize total market returns, and betas which result from each individual stock's market price movement relative to the market.

4) The CEM is based upon the selection of comparable risk, non-price regulated domestic companies selected through the use of statistics derived from regression analyses of market prices paid by investors. Although in this

instance, the CEM result is not meaningful related to the utility proxy but rather only when related to SUG for the reasons discussed supra.

B. Basis of Recommended Common Equity Cost Rate

Q. WHAT IS THE BASIS OF YOUR RECOMMENDED COMMON EQUITY COST RATE OF 11.25% THROUGH RELIANCE UPON THE UTILITY PROXY GROUP OF NINE LDCS?

A. I recommend a common equity cost rate of 11.25% which is applicable to a common equity ratio of 48.00%, a ratio based upon the average ratio maintained by the proxy group during the five calendar quarters ending December 31, 2008 as discussed supra. The 11.25% recommended common equity cost rate is based upon the midpoint of the lowest and highest cost rates of 9.82% and 12.36% derived from application of the DCF, RP, and CAPM/ECAPM, namely 11.09% based on the proxy group of nine LDCs. The average cost rate based upon the cost rates derived from the application of all three methods is 11.17%. The cost rate of 11.09% is the midpoint of a relatively tight range of cost rates, i.e., 9.82% - 12.36% as can be determined by reference to Page 1 of Schedule FJH-1 at Lines 1 through 3 which is then adjusted upward by 0.15% in recognition of MGE's smaller size vis-à-vis the proxy group resulting in a cost rate of 11.24%, which I round to 11.25%.

Also shown on page 1 of Schedule FJH-1, is the alternative if the Commission again chooses to rely upon SUG. SUG's cost rates range from 13.74% - 15.50%, the midpoint of which is 14.62% before a necessary adjustment to recognize MGE's smaller size. As noted, I relied upon the midpoint of each range, namely 11.09% based on the proxy group and 14.62% based on SUG.

As discussed supra, it is necessary to make an adjustment for MGE's small size vis-à-vis the proxy group and SUG if the Commission chooses to utilize SUG as a proxy for MGE. Accordingly, a conservative upward adjustment of 0.15%, or 15 basis points, is made to the proxy group cost rate for that reason and it is shown on Line 6, page 1 of Schedule FJH-1. Because SUG is so much larger than MGE, a size adjustment of 0.65%, albeit also conservative as discussed supra, is required.

As a result of the foregoing, the indicated common equity cost rates are as follows: 11.24% based upon the utility proxy group of nine LDCs and its capital structure consisting of 48.00% common equity which I have rounded to 11.25%. Also, a cost rate of 15.27%, which I round to 15.25% that is based upon SUG and related to SUG's common equity ratio of 38.66%. It would be incorrect to apply a common equity cost rate derived from the proxy group of LDCs with a 48.00% common

equity ratio to SUG and its 38.66% common equity ratio because SUG is, for the most part, involved in more risky business activities, has a lower bond rating than the proxy group of LDCs (and MGE if viewed on a stand-alone basis). Consequently, if SUG and its capital structure is utilized as a proxy for MGE, SUG's cost rates must be utilized which results in a much higher overall fair rate of return of 9.752% (versus 8.434% based upon the proxy group of nine LDCs) as shown on page 1 of Schedule FJH-1.

XII. REALITY CHECK

Q. HAVE YOU PERFORMED A REALITY CHECK TO AFFIRM THAT A COMMON EQUITY COST RATE OF 11.25% IS REASONABLE?

A. Yes, I have. It is based upon the data on Schedule FJH-20, which contains a summary of regulatory awards made to gas distribution companies during the period January 1, 2008 through February 2009, and the application of common sense, given the dramatic adverse change in the economy and the financial markets attributable to the global financial crisis. As shown, the average authorized ROE in Commission decided (litigated) cases was 10.42% relative to an average common equity ratio of 48.89%. Keep in mind that cases decided during this period were based upon data, including market data, for periods well prior thereto. Consequently, the dramatic

increase in capital costs which have occurred since the fall of 2008, and are likely to continue for some time to come, as a result of the global financial crisis are not reflected in those regulatory awards which averaged 10.42%. As shown in Schedule FJH-17 and discussed supra regarding the financial crisis and investors' concurrent flight to safety, yields on U.S. Treasury securities and higher rated corporate and utility bonds have declined dramatically at the expense of a plummeting and more costly stock market and dramatically higher yields on utility bonds rated in the Baa category. For example, the historical average spread between A and Baa rated utility bonds of 0.37% (Schedule FJH-17) has increased by about 120 basis points and has ranged between 1.50% - 1.80% in recent months as also gleaned from the data on Schedule FJH-17. If debt capital costs more, so does the cost rate of common equity capital. As a result of the global financial crisis, investors now recognize that a much greater level of risk exists. This reality is expressed profoundly and yet succinctly by Professor Roger Ibbotson, supra. Consequently, I believe that my recommended common equity cost rate of 11.25% is proper and realistically conservative.

Q. DOES THAT CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does.

APPENDIX A

PROFESSIONAL QUALIFICATIONS

OF

FRANK J. HANLEY, CRRA
PRINCIPAL & DIRECTOR
AUS CONSULTANTS

PROFESSIONAL QUALIFICATIONS OF FRANK J. HANLEY

EDUCATIONAL BACKGROUND

I am a graduate of Drexel University where I received a Bachelor of Science Degree from the College of Business Administration. The principal courses required for this Degree include accounting, economics, finance and other related courses. I am also Certified by the Society of Utility and Regulatory Financial Analysts, formerly the National Society of Rate of Return Analysts, as a Rate of Return Analyst (CRRA).

PROFESSIONAL EXPERIENCE

In 1959, I was employed by American Water Works Service Company, Inc., which is a wholly-owned subsidiary of American Water Works Company, Inc., the largest investor-owned water works operation in the United States. I was assigned to its Treasury Department in Philadelphia until 1961. During that period of time, I was heavily involved in the development of cash flow projections and negotiations with banks for the establishment of lines of credit for all of the operating and subholding companies in the system, which normally aggregated more than $100 million per year.

In 1961, I was assigned to its Accounting Department where I remained until 1963. During that two-year period, I became intimately familiar with all aspects of a service company accounting system, the nature of the services performed, and the methods of allocating costs. In 1963, I was reassigned to its Treasury Department as a Financial Analyst. My duties consisted of those previously performed, as well as the expanded responsibilities of assisting in the preparation of testimony and exhibits to be presented to various public utility commissions in regard to fair rate of

return and other financial matters. I also designed and recommended financing programs for many of American's operating subsidiaries and negotiated sales of long-term debt securities and preferred stock on their behalf either directly with institutional investors or through investment bankers. I was elected Assistant Treasurer of a number of operating subsidiaries in the Fall of 1967, just prior to accepting employment with the Communications and Technical Services Division of the Philco-Ford Corporation located in Fort Washington, Pennsylvania. While in the employ of the Philco-Ford organization, as a Senior Financial Analyst, I had responsibility for the pricing negotiations and analysis of acceptable rates of return to the corporation for all types of contract proposals with various agencies of the U.S. Government and foreign governments.

In the Summer of 1969, I accepted a position with the Financial Division of The Philadelphia National Bank. I was elected Financial Planning Officer of the bank in December 1970. While employed with The Philadelphia National Bank, my responsibilities included preparation of the annual and five-year profit plans. In the compilation of these plans, I had to perform detailed analyses and measure the various levels of profitability for each organizational unit. I also assisted correspondent banks in matters of recapitalization and merger, made recommendations and studies for their use before the various regulatory bodies having jurisdiction over them.

In September 1971, I joined AUS Consultants - Utility Services Group as Vice President. I was elected Senior Vice President in May 1975. I was elected President in September 1989. As a result of a reorganization of AUS Consultants by practice effective January 1, 2007, I am currently a Principal & Director of AUS Consultants.

EXPERT WITNESS QUALIFICATIONS

I have offered testimony as an expert witness on the subjects of fair rate of return and utility financial matters in more than 300 various cases and dockets before the following agencies and courts: before the Alaska Public Utilities Commission and its successor the Regulatory Commission of Alaska, the Arizona Corporation Commission, the Arkansas Public Service Commission, the California Public Utilities Commission, the Public Utilities Control Authority of Connecticut, the Delaware Public Service Commission, the District of Columbia Public Service Commission, the Florida Public Service Commission, Hawaii Public Utilities Commission, the Idaho Public Utilities Commission, the Illinois Commerce Commission, the Indiana Public Utility Regulatory Commission, the Iowa Utilities Board, the Public Service Commission of Kentucky, the Maryland Public Service Commission, the Massachusetts Department of Public Utilities, the Michigan Public Service Commission, the Minnesota Public Utilities Commission, the Missouri Public Service Commission, Nevada Public Utilities Commission, the New Jersey Board of Public Utilities, the New Mexico State Corporation Commission, the Public Service Commission of the State of New York, the North Carolina Utilities Commission, the Ohio Public Utilities Commission, the Oklahoma Corporation Commission, the Pennsylvania Public Utility Commission, the Rhode Island Public Utilities Commission, the Tennessee Public Service Commission, the Public Service Board of the State of Vermont, the Virginia State Corporation Commission, the Public Services Commission of the Territory of the U.S. Virgin Islands, the Washington Utilities and Transportation Commission, the Public Service Commission of West Virginia, the Wisconsin Public Service Commission, the Federal Power Commission and its

successor the Federal Energy Regulatory Commission. I have testified before the New Jersey Division of Tax Appeals and the United States Bankruptcy Court - Middle District of Pennsylvania with regard to the economic valuation of utility property. Also, I have testified before the U.S. Tax Court in Washington D.C. as an expert witness on the value of closely held utility common stock in a contested Federal Estate Tax case.

In addition, I have appeared as a Staff rate of return witness for the Arizona Corporation Commission, the Delaware Public Service Commission and the Virgin Islands Public Services Commission. I have testified on the fair rate of return on behalf of the City of New Orleans, Louisiana, and also acted as project manager for my firm in representing the City in the 1980-1981 rate proceeding of New Orleans Public Services, Inc. The City of New Orleans then had, as it does now, regulatory authority with regard to the retail rates charged by New Orleans Public Service, Inc., for electric and natural gas service. I have also acted as a consultant to the District of Columbia Public Service Commission itself -- not in the capacity of Staff.

I have testified before a number of local and county regulatory bodies in various states on the subject of fair rate of return on behalf of cable television companies as well as before an arbitration panel in Ohio and a State District Court in Texas. I have testified before the Public Works Committee of the Nebraska State Senate in relation to Legislative Bill 731 which proposed permitting Public Power Districts and Municipalities to enter the Cable Television field.

PROFESSIONAL ASSOCIATIONS,
PUBLICATIONS AND GUEST SPEAKER APPEARANCES

I am a Member of the Society of Utility and Regulatory Financial Analysts (SURFA), formerly known as the National Society of Rate of Return Analysts. I am a Certified Rate of Return Analyst (CRRA). I am on the Advisory Council of New Mexico State University's Center for Public Utilities which is endorsed by the National Association of Regulatory Utility Commissioners (NARUC). I am also a member of the Executive Advisory Council of the Rutgers University School of Business at Camden. AUS Consultants is an associate member of the American Gas Association (AGA) and I am a member of AGA's Rate and Strategic Issues Committee. I am also an associate member of the Energy Association of Pennsylvania and the National Association of Water Companies. AUS Consultants is an associate member of the New Jersey Utilities Association.

I often attend SURFA meetings during which considerable information on the subject of rate of return is exchanged. I have also attended corporate bond rating seminars held by Standard & Poor's Corporation. I continuously review financial publications of institutions such as Standard & Poor's, Moody's Investors' Service, Value Line Investment Survey, and periodicals of various agencies of the U.S. Government.

I co-authored an article with A. Gerald Harris entitled "Does Diversification Increase the Cost of Equity Capital?" which was published in the July 15, 1991 issue of Public Utilities Fortnightly. Also, an article which I co-authored with Pauline M. Ahern entitled "Comparable Earnings: New Life for an Old Precept" was published in the American Gas Association's

Financial Quarterly Review, Summer 1994. I also authored an article entitled "Why Performance-Based Incentives Are Essential" which was published in THE CITY GATE, Fall 1995, a magazine published by the Pennsylvania Gas Association.

I have appeared as a guest speaker before an annual convention of the Mid-American Cable Television Association in Kansas City, Missouri and as a guest panelist on the small water companies' operation seminar of the National Association of Water Companies' 77th Annual Convention in Hollywood, Florida. I addressed the Second Annual Seminar on Regulation of Water Utilities sponsored by N.A.R.U.C., at the University of South Florida's St. Petersburg campus. I have spoken on fair rate of return to the Third and Fourth Annual Utilities Conferences, as well as the special conference on the cost of capital in El Paso, Texas sponsored by New Mexico State University. In 1983 I also made a presentation on the Cost of Capital in Atlantic City, New Jersey, at a seminar co-sponsored by Temple University. I have also addressed the Public Utility Law Section of the American Bar Association's Third Institute on Fundamentals of Ratemaking which was held in Washington, D.C. and I addressed a Conference on Cable Television sponsored by The University of Texas School of Law at Austin, Texas. Also, I addressed a meeting of the New England Water Works Association at Boxborough, Massachusetts, on the subject of Enterprise Financing. In addition, I was a speaker and mock witness in three different Utility Workshops for Attorneys sponsored by the Financial Accounting Institute held in Boston and Washington, D.C. I also was on a panel at the 23rd Financial Forum sponsored by the National Society of Rate of Return Analysts. The topic was Rate of Return Determination in the Diversified and/or Partially Deregulated Environment. I addressed the 83rd Annual Meeting of the Pennsylvania Gas

Association in Hershey, PA. My topic was the Cost of Capital Implications of Demand Side Management. In June 1993, I lectured on the cost of capital at the American Gas Association's Gas Rate Fundamentals Course. In October 1993, I was a guest speaker at the University of Wisconsin's Center for Public Utilities -- my topic was "Diversification and Corporate Restructuring in the Electric Utility Industry - Trends and Cost of Capital Implications." In October 1994, I was a guest speaker on a panel at the Fourteenth Annual Electric & Natural Gas Conference in Atlanta, Ga., sponsored by the Bonbright Utilities Center of the University of Georgia and the Georgia Public Service Commission. The panel topic was "Responses to Competition and Incentive Rates." In October 1994, I was a guest speaker on a panel at a conference and workshop called "Navigating the Shoals of Cable Rate Regulation" sponsored by EXNET in Washington, D.C. The panel topic was "Rate of Return." Also, in March 1995, I was a guest speaker on a panel at a conference entitled, "Current Issues Challenging the Regulatory Process" sponsored by New Mexico State University - Center for Public Utilities. My panel topic concerned the electric industry and was titled, "Impact of a Competitive Structure on the Financial Markets". In May 1995, I was a guest speaker at the 87th Annual Meeting of the Pennsylvania Gas Association in Hershey, PA. My topic was "The Pennsylvania Economy and Utility Regulation: Impact on Industry, Consumers and Investors." In May 1996, I was on a panel at the 28th Financial Forum of the Society of Utility and Regulatory Financial Analysts. The panel's topic was "Revisiting the Risk Premium Approach" and was held in Richmond, Virginia. From 1996 through 2005, I participated as an instructor in 2-3 seminars per year on the “Basics of Regulation” (and the ratemaking process in a changing environment) and also in a program called “A Step Beyond the Basics”, all sponsored by New

Mexico State University's Center for Public Utilities and NARUC. In March 2002, I was a guest speaker before the Rate and Strategic Issues Committee of the American Gas Association in St. Petersburg, Florida. My topic was Rate of Return Strategies. In December 2002, I was a guest speaker at a seminar entitled, "Service Innovations and Revenue Enhancements for the Energy Distribution Business" sponsored by the American Gas Association in Washington, DC. My topic was "The Impact of Volatile Energy Markets on Rate of Return Strategies". In February 2003, I spoke at the Rutgers University-Camden, NJ M.B.A. Speaker Series. I addressed M.B.A. students and interested faculty on the role of the expert witness in the public utility ratemaking process. In November 2003, 2004, 2007 and 2008, by invitation, I was a Guest Professor at Rutgers University – Camden for classes of undergraduate accounting and finance students. In October 2006, I made a presentation entitled "Mergers & Acquisitions: A Regulatory Perspective" at the Bonbright Center Electric and Natural Gas Conference at the University of Georgia. In February 2008, I taught a course entitled, "The Basics of Cost of Capital Analysis" in Albuquerque, NM as part of a program entitled, "More Basic Practical Training" sponsored by New Mexico State University's Center for Public Utilities.