Exhibit No.: _____
Issue: Fair Rate of Return
Witness: Frank J. Hanley
Sponsoring Party: Missouri Gas Energy
Case No.: GR-2006-

MISSOURI PUBLIC SERVICE COMMISSION

MISSOURI GAS ENERGY

CASE NO. GR-2006-

DIRECT TESTIMONY OF

FRANK J. HANLEY

MAY 1, 2006

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DIRECT TESTIMONY OF FRANK J. HANLEY

CASE NO. GR-2006-

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I. INTRODUCTION

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

A. My name is Frank J. Hanley and I am President of AUS Consultants – Utility Services. My business address is 155 Gaither Drive, P.O. Box 1050, Moorestown, New Jersey 08057.

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 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.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

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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 common equity cost rate which it should be afforded an opportunity to earn on the common equity financed portion of its jurisdictional rate base for the test year ended December 31, 2005 and to support the reasonableness of the use of a hypothetical capital structure consisting of 54.00% total debt and 46.00% common equity capital.

Q. WHAT IS YOUR RECOMMENDED FAIR RATE OF RETURN?

A. It is 8.94% applicable to a hypothetical ratemaking capital structure consisting of 54.00% total debt and 46.00% common equity capital. The long- and short-term debt cost rates utilized relate to the hypothetical debt ratio of 54.00% which is comprised of 44.09% long-term debt and 9.91% short-term debt with cost rates of 6.57% and 5.47%, respectively. My recommended common equity cost rate is 11.95%.

Q. HAVE YOU PREPARED AN EXHIBIT WHICH SUPPORTS YOUR RECOMMENDATIONS?

A. Yes, I have. It is appended hereto and consists of Schedules FJH-1 through FJH-17.

II. EXECUTIVE SUMMARY

Q. PLEASE SUMMARIZE THE OVERALL COST OF CAPITAL AND FAIR RATE OF RETURN RELATIVE TO THE FUTURE TEST YEAR ENDING DECEMBER 31, 2006.

A. It is 8.94% developed as follows:

Type of Capital	Ratios	Cost Rate	Weighted Cost Rate
Long-Term Debt	44.09%	6.57%	2.90%
Short-Term Debt	9.91	5.47	0.54
Total Debt	54.00		3.44
Common Equity	46.00	11.95	5.50
Total	100.00%		8.94%

The overall cost of capital of 8.94% is also summarized on Schedule FJH-1, page 1 based upon the hypothetical ratemaking capital structure discussed and shown supra.

My recommended common equity cost rate of 11.95% reflects current capital market conditions and results from the application of four well-tested market-based cost of common equity models, the Discounted Cash Flow (DCF) approach, the Risk Premium (RP) Model, the Capital Asset Pricing Model (CAPM), and the Comparable Earnings Model (CEM).

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Q. PLEASE SUMMARIZE YOUR TESTIMONY.

A. MGE is a division of Southern Union Company (SUG) and as such has no common stock which is traded. I do not rely at all upon SUG of which MGE is only one of several operating natural gas divisions. Moreover, SUG has arranged for the sale of its PG Energy division to UGI Utilities, Inc. as well as the Rhode Island assets of its New England Gas Company division to National Grid PLC. These sales are consistent with the stated SUG goal of "the continuing transformation of Southern Union Company from a utility to a leader in the natural gas transportation and services industry" per its Chairman, President and CEO, George L. Lindemann (see Note (1) on page 1 of Schedule FJH-1 . Because the cost of capital is prospective, investors do not look at SUG as a gas distribution utility (LDC).

In addition to the foregoing, it seems clear to me, in view of the August 2004 Non-Unanimous Stipulation and Agreement in Case No. GO-2005-0019 in re SUG's application for authority to acquire up to and including 50% of the equity interests of CrossCountry Energy LLC that this Commission was (and is) very concerned that no increase in the cost of capital as a result of such transaction should be borne by MGE ratepayers (see for example Section 3, Paragraph E). In view of SUG's recent $1.6 billion acquisition of Sid Richardson Energy Services and the pending sales of its

Pennsylvania and Rhode Island LDC properties such concern should now be even more pertinent because SUG no longer can be representative of how a LDC is, or should be, financed.

Consequently, it is appropriate to observe the market-based common equity cost rates of LDCs whose common stocks are actively traded (proxy groups) for insight into a recommended common equity cost rate for use in a cost of capital determination, and also to provide insight into a proper capital structure for ratemaking purposes because, in this instance, neither the capital structure of the regulated utility (MGE), nor its parent (SUG), is suitable for such use. 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. Consequently, I have evaluated the market data of two proxy groups of LDCs and adjusted the common equity cost rate derived therefrom to reflect MGE's unique (greater) risks vis-à-vis those proxies.

[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).

My recommended common equity cost rate of 11.95% reflects current capital market conditions and results from the application of the four well tested market-based cost of common equity models mentioned supra, namely the DCF, RPM, CAPM, and CEM models. It is based upon two proxy groups of LDCs; a group of four and a group of eight Value Line LDCs because MGE is a division of SUG whose market prices are not reflective of the risks associated with an LDC and who soon will consummate the sale of a significant portion of its LDC assets. It is critically important that the risk rate reflected in the cost of capital applied to MGE's gas distribution rate base is reflective of the risk of an LDC. There must be a match between risk and return consistent with that basic financial principle. Because SUG does not provide such a match, it should not be utilized as a proxy for how MGE's rate base should be financed. Moreover, until the most recent quarter, SUG had paid no cash dividends on its common stock for a number of years. Consequently, the use of comparable risk LDCs as proxies is essential to determine how MGE's rate base should be financed and the costs of its components consistent with the principles of fair rate of return established in the Hope and Bluefield cases mentioned supra.

All four of the cost of common equity models which I utilize are market-based and are predicated upon the Efficient Market Hypothesis (EMH). The prudence of relying upon all of the market-based models is affirmed by the financial literature.

Because all of the models are discussed in the financial literature, the EMH requires the assumption that investors rely upon all of them. Consequently, I rely upon the four most widely-discussed and utilized cost of common equity models as principal tools in reaching my recommended equity cost rate. No single cost of common equity model is so theoretically superior to the others, or so precise, to justify sole reliance on it in the application of the traditional ratemaking paradigm.

I reviewed the results of the applications of each cost of common equity model in arriving at a common equity cost rate of 11.50% which is applicable to the two proxy groups. As will be discussed infra, that cost rate needs to be adjusted upward to reflect MGE's greater risk attributable to its smaller size and lack of protection from the vagaries of the weather vis-à-vis the two proxy groups. After adjusting for those added risks, the common equity cost rate applicable to MGE is 11.95%.

In addition, I also tested the reasonableness of my conclusion by calculating an adjusted DCF cost rate to account for the impact of the added financial risk attributable to the divergences of the market values and book values of common stocks on DCF cost rate, especially in a volatile stock market. I have stated consistently over the years that the DCF model tends to understate the true cost of common equity capital when the market values of utilities' common stocks exceed

their book values. The basis for the adjustments made to account for the greater financial risk of a market-based DCF cost rate which is applied to a much lower common equity ratio measured at book value (or the common equity financed portion of an original cost rate base) is supported academically in an article by Robert S. Hamada entitled, "Portfolio Analysis, Market Equilibrium and Corporate Finance" as published in the Journal of Finance (Vol. 24, No. 1, March 1969, 13-31). Moreover, regulatory support for such an adjustment can be found in decisions by the Pennsylvania Public Utility Commission (PA PUC) which has adopted the use of an adjusted DCF model which accounts for the impact of the divergence of market values and book values of common stocks on DCF cost rate (financial risk adjustment) in a number of Orders in recent years. For example, Aqua Pennsylvania Water Company (Docket No. R-00038805), Order entered August 5, 2004 and Pennsylvania Power & Light Co. (Docket No. R-00049255), Order entered December 22, 2004.

As shown on page 2 of Schedule FJH-1, a credible unadjusted DCF cost rate is in the 10.41% - 10.43% range while the RP, CAPM AND CEM cost rates are in the 10.25% - 14.37% range. The range of DCF cost rates adjusted to reflect the added financial risk when applied to the book value of equity is 11.60% - 11.69% before adjustment to reflect MGE's added risks confirms the reasonableness of my

recommendation of an 11.95% common equity cost rate. In addition, as a further check on the reasonableness of my recommended common equity cost rate of 11.95%, I reviewed regulatory awards made to LDCs during the period January 1, 2004 through December 31, 2005. The average awarded ROE in fully litigated cases was 10.66% relative to a 46.91 % common equity ratio. The average award further confirms my recommendation as reasonable when recognition is given to the fact that we are just going into a period of rising interest rates which greatly impact utilities.

On a prospective basis, undoubtedly the average awarded ROE will rise and when consideration is given to MGE's small size and lack of protection from the vagaries of the weather, my recommended common equity cost rate of 11.95% is reasonable.

III. GENERAL PRINCIPLES

Q. WHAT GENERAL PRINCIPLES HAVE YOU CONSIDERED IN ARRIVING AT YOUR OPINION THAT THE OVERALL COST OF CAPITAL OF 8.94% THAT YOU RECOMMEND IS REASONABLE?

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. The natural gas business has become subject to increasing competitive pressures, a fact recognized by investors which is reflected in the market prices they pay for securities. Analyses based on companies whose securities are traded are therefore imperative when evaluating capital structure and its component cost rates. The common equity cost rate determined should be adequate enough to fulfill investors' requirements and assure that the entity 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 AND EXPLAIN WHY IT IS IMPORTANT TO THE DETERMINATION OF A FAIR RATE OF RETURN.

A. Business risk is a collective term encompassing all of the diversifiable risks of an enterprise except financial risk. 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 6 through 23 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. Size is an important factor which affects business risk and hence common equity cost rate. Thus, the cost of capital must reflect the impact of MGE's size on common equity cost rate vis-à-vis each of my two proxy groups of LDCs. Based on my analyses, upward adjustments are necessary to be made to the common equity cost rate derived from the proxy groups. The results of my analyses, summarized on page 9 of Schedule FJH-1, indicate that upward adjustments are indicated to be made to the cost rate derived from the proxy groups in order to reflect MGE's small size

on cost rate as follows: proxy group of four LDCs 0.93% and eight Value Line LDCs 0.86%. To the extent that any comparison is made to SUG, a size adjustment of 1.54% is indicated. However, as discussed infra, I adopt an upward adjustment of only 30 basis points, or 0.30% based on the two proxy groups. I do so in order to be very conservative while still providing recognition to the impact of size on common equity cost rate. The relative size differences are based upon total capitalization for the proxy groups and MGE's rate base are as follows:

	Total Capital ($ millions)	Times Greater than MGE	Market Capitalization of Common Equity(2) ($ Millions)	Times Greater than MGE
Proxy Group of Four LDCs	1,296.120 (1)	2.2x	1,008.297 (2)	1.9x
Proxy Group of Eight Value Line LDCs	1,279.600 (1)	2.2x	1,217.526 (2)	2.3x
SUG	4,449.858 (1)	7.7x	2,667.265 (2)	6.1x
MGE	580.602 (1)		525.607 (2)	
			537.626 (2)	
			438.625 (2)	

(1) From Schedule FJH-1, page 9 .
(2) From Schedule FJH-1, page 11 .

I have also made a study of the relative market capitalization of MGE vis-à-vis both proxy groups. The results are shown on page 9 of Schedule FJH-1 . MGE's common stock is not publicly traded. Consequently, I have assumed that if it were publicly traded, it would be selling at the average market-to-book ratio of each proxy

group, and in the case of SUG, at SUG's market-to-book ratio. Hence, MGE's presumed total market capitalization is estimated to be between $525.607 and $537.626 million based upon the common equity financed portion (46%) of the rate base of $580.602 million utilizing recent market/book ratios. As shown supra, based on the market capitalization data on page 11 of Schedule FJH-1, the proxy group of four LDCs was 1.9 times larger while the proxy group of eight Value Line LDCs was 2.3 times larger than MGE. SUG was 6.1 times larger than MGE. 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.

Q. CAN YOU PROVIDE AN 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*

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

> *small firms than on otherwise similar stocks of the large firms.* (italics added)

In addition, as shown on Schedule FJH-1, page 13, Ibbotson Associates 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.* (italics added)

Q. YOU HAVE QUANTIFIED <u>SUPRA</u> THE RANGE OF INCREMENTAL ADDITIONAL COMMON EQUITY COST RATE TO MGE, BASED ON THE PROXY GROUPS' RANGES BETWEEN 0.86% AND 0.93%. WHY HAVE YOU ONLY UTILIZED 0.30% TO RECOGNIZE MGE'S SMALL SIZE?

A. I have utilized an adjustment of only 0.30% in order to be very conservative while providing recognition to the reality of this basic financial principle, which is supported empirically in the financial literature.

V. FINANCIAL RISK

Q. PLEASE DEFINE FINANCIAL RISK AND EXPLAIN WHY IT IS IMPORTANT TO THE DETERMINATION OF A FAIR RATE OF RETURN.

A. Financial risk is the additional risk created by the introduction of debt into the capital structure. Standard & Poor's (S&P) corporate bond rating criteria is contained in Schedule FJH-2, which consists of 15 pages. S&P utilizes ten levels of business

profiles at different bond ratings with "1" being considered the lowest risk and "10" the highest risk.

Q. ARE BOND RATINGS A GOOD MEASURE OF INVESTMENT RISK?

A. Yes. 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 process gives recognition to diversifiable business and financial risks. 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). Differences in risk may still exist between companies with the same bond rating and would be reflected in S&P's assigned business profile, or position, i.e., the higher the assigned number (e.g., "1" through "10"), the greater the qualitative assessment of risk by S&P, and vice versa. The riskier the assigned business profile, the more stringent are the financial guidelines. It is worthy of note that the average company in each of the two proxy groups has an assigned business position of 1.8/2.1, respectively (see page 2 of Schedule FJH-13 in comparison to page 14 of Schedule FJH-2. Also, the average company in each proxy group (which will be discussed infra) has an "A" bond rating. I believe that if MGE were viewed as a stand-alone entity with a 54% total debt ratio and a 46% common equity ratio, its debt would be rated A with a

similar business profile of about "2", or perhaps a profile of "3" due to its smaller size and lack of protection from the vagaries of the weather.

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, i.e., the sum of business and financial risks.

VI. PROXY GROUPS

Q. YOU PREVIOUSLY MENTIONED THAT YOU OBSERVED THE MARKET DATA FOR A PROXY GROUP OF FOUR LDCS IN ORDER TO GAIN INSIGHT INTO A MARKET-BASED COMMON EQUITY COST RATE FOR MGE. PLEASE EXPLAIN THE BASIS OF SELECTION.

A. The basis of selection was to include those gas distribution companies: (1) which have an S.I.C. Code of 4924 (Natural Gas Distribution) by S&P's Compustat Services; (2) which have actively traded common stock; (3) which derived at least 80% of their 2004 operating revenues from natural gas distribution operations; (4) which are included in Value Line Investment Survey (Standard Edition) and have ThomsonFN/First Call long-term consensus EPS growth rates; (5) have not cut or omitted their common stock dividends during the five calendar years ending 2005

and up to the time of preparation of this testimony; (6) which were not expected to be acquired or merged into another company at the time of the preparation of this testimony; and (7) which are included in S&P's Compustat PC Plus/Research Insight Data Base. The related capitalization and financial statistics for the companies which met the above criteria, i.e., the proxy group, are shown in Schedule FJH-3.

Q. PLEASE DESCRIBE SCHEDULE FJH-3.

A. Schedule FJH-3 consists of three pages. Average capitalization and financial statistics for the years 2001 through 2005, as well as the five-year averages ending 2005 for the group are shown on page 1. Notes related to page 1 are shown on page 2, as are the selection criteria and the identities of the four companies comprising the group. Page 3 contains information related to each company and its ability to protect itself against the vagaries of the weather.

As shown on page 1, the average company in the proxy group had <u>total capital employed</u> in 2005 of about $1.296 billion, making the average company in this group considerably larger than MGE with a rate base of about $580.6 million. The five-year average ROE was 11.77%. The group had a five-year average total equity ratio of 45.49% which was within the S&P financial guideline for an A bond rating and an average business profile of "1.8".

Q. PLEASE EXPLAIN HOW YOUR SECOND PROXY GROUP OF EIGHT VALUE LINE LDCS WAS SELECTED.

A. The basis of selection was to include those LDCs: 1) which are included in Value Line Investment Survey's (Standard Edition) – Natural Gas (Distribution) Industry; 2) which have not cut or omitted their common stock dividend during the five calendar years ending 2005 and up to the time of the preparation of this direct testimony; 3) which at the time of the preparation of this testimony were not expected to be acquired by or merged into another company; 4) which in 2004 had at least 60% of operating revenues derived from natural gas distribution operations; and 5) which are included in S&P's Compustat PC Plus/Research Insight Data Base.

A number of companies were eliminated, as explained in the selection criteria note on page 2 of Schedule FJH-4, for reasons such as not having projected EPS growth rates from ThomsonFN/First Call, dividend cuts or non-payment of cash dividends during and up through 2005, less than 60% of total revenues from LDCs operations and in the process of being acquired by or merged with another company.

Q. PLEASE DESCRIBE SCHEDULE FJH-4.

A. Schedule FJH-4 contains average comparative capitalization and financial statistics

for the proxy group of eight Value Line LDCs for the years 2001 through 2005. It consists of three pages. Page 1 contains a summary of the comparative financial data for the years 2001-2005. Page 2 contains notes relevant to Page 1, as well as the selection criteria and identities of the individual companies in the proxy group. Page 3 contains information as to the ability of each company in the group to protect itself against the vagaries of the weather.

As shown on Page 1, during the five year period ending 2005, the achieved average earnings rate on book common equity (ROE) was 11.94%. The group had a five-year average total equity ratio of 45.86% which was within the new S&P financial guidelines for an A bond rating and an average business profile of "2.1".

VII. SOUTHERN UNION COMPANY

Q. PLEASE DISCUSS SCHEDULE FJH-5 .

A. Schedule FJH-5 contains five-year financial summary data for SUG. It has been shown only for information purposes and because it likely would be requested. However, for the reasons discussed supra, investors no longer can be considering SUG as a company largely engaged in the distribution of natural gas, i.e., as a regulated utility. This is in view of the pending sales of the Pennsylvania and Rhode Island gas distribution assets, the recent acquisition of Sid Richardson Energy

Services and the stated goal of transformation from a utility to a transportation and energy services company.

VIII. CAPITAL STRUCTURE

Q. WHAT CAPITAL STRUCTURE RATIOS DO YOU RECOMMEND FOR USE IN DETERMINING THE OVERALL COST OF CAPITAL FOR MGE?

A. I recommend the use of hypothetical capital structure ratios consisting of 54.00% total debt and 46.00% common equity capital.

Q. WHY DO YOU RECOMMEND THE USE OF A HYPOTHETICAL CAPITAL STRUCTURE CONSISTING OF 54.00% TOTAL DEBT AND 46.00% COMMON EQUITY CAPITAL?

A. MGE is a division of SUG, as such it has no meaningful stand-alone capital structure. For the reasons discussed supra, SUG's capital structure is not meaningful as an indication of the risk of the gas distribution business and how it should be financed. Moreover, undoubtedly before this rate proceeding is concluded, SUG will no longer own the Pennsylvania and Rhode Island gas distribution assets. Those sales and the continuing effort to transfer SUG from a utility to a leader in the natural gas transportation and services industry confirm that SUG's capital structure is not appropriate as a proxy for how MGE (the gas distribution rate base) is, or

should be, financed. Because there is no stand-alone meaningful capital structure for MGE, the use of a hypothetical capital structure derived from proxy groups of LDCs must be utilized. In addition, the use of a hypothetical capital structure as I have applied it here by definition ensures that MGE's ratemaking cost of capital is not increased by Southern Union's CrossCountry Energy acquisition as required by paragraph III.3.E of the Non-Unanimous Stipulation and Agreement approved by the Commission in Case No. GO-2005-0019.

Q. ARE THE AVERAGE CAPITAL STRUCTURE RATIOS OF THE PROXY GROUPS OF LDCS APPROPRIATE TO USE ON A HYPOTHETICAL BASIS TO DETERMINE A COST OF CAPITAL FOR MGE?

A. Yes, I believe that they are. As shown on page 1 of Schedule FJH-6, the average 2005 capital structure of the proxy group of four LDCs consisted of total debt of 55.00% and common equity of 45.00% while the five-year average was 54.52% total debt and 45.48% total equity.

As shown on Schedule FJH-6, page 2, the average 2005 capital structure of the proxy group of eight Value Line LDCs consisted of 52.93% total debt and 47.07% total equity while the five-year average consisted of 54.15% total debt and 45.85% total equity.

As can be seen in the case of each proxy group, the average preferred stock ratio is extremely negligible, i.e., less than one-quarter of one percent on average. The average total debt ratio maintained by each proxy group ranged from about 53%-55% which put it within the range required by S&P of 52%-58% for an A bond rating and a business profile of "2" (see page 14, Schedule FJH-2). Assuming a hypothetical comparable stand-alone bond rating of A and business profile of "2" for MGE, a capital structure comprised of 54.00% total debt and 46.00% common equity is reasonable. Even if it were assumed that MGE would have a more risky business profile of "3.0", the S&P required ratio of total debt to total capital would be 50%-55%, which would imply the need to maintain total equity of 45%-50%. In either eventuality, it is clear that the use of a hypothetical capital structure consisting of 54.00 total debt and 46.00% total equity is reasonable.

Q. SINCE YOU HAVE RECOMMENDED A 54.00% TOTAL DEBT RATIO, HOW DID YOU DETERMINE THE RELATIVE PROPORTIONS OF LONG- AND SHORT-TERM DEBT?

A. In order to answer this question properly, I first needed to determine that it was proper to include short-term debt in the capital structure. In order to make that determination, I reviewed the capital structure of each company in each of the two

proxy groups for the five quarters beginning with the quarter ended December 2004 through the quarter ended December 2005. The overall pattern was that short-term debt has been consistently used by every company in each proxy group for almost every single quarter. My conclusion is that it is appropriate to include a proportion of short-term debt in the capital structure. I show the details of the quarterly capital structure ratios at pages 3 and 4, Schedule FJH-6 for the proxy groups of four LDCs and the eight Value Line LDCs, respectively. I then relied upon the average of the capital structure ratios for each proxy group for the five quarters ended December 31, 2005. I then utilized the average of those ratios as shown in Note 5 to Schedule FJH-1, page 1 . As shown there, long-term debt on average over the five quarters was 81.64% of total debt, while short-term debt represented 18.36% of total debt. Applying those percentages to the 54% hypothetical total debt ratio resulted in a long-term debt ratio of 44.09% and a short-term debt ratio of 9.91%. I believe those ratios represent a proper balance between long- and short-term debt.

On page 5 of Schedule 6, I have shown SUG's projected consolidated capital structure and related ratios on a pro forma basis at June 30, 2006 for information purposes only. These ratios are not indicative of a company whose main emphasis on a forward basis is the gas distribution business and should not be utilized at all 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 6.57% WHICH YOU RECOMMEND.

A. The basis of my long-term debt cost rate of 6.57% is contained in Schedule FJH-7, which consists of ten pages. Page 1 contains a summary of the basis of the cost rate. Pages 2 through 9 of Schedule FJH-7 contain the basis of the composite long-term debt interest cost rate for each company in the two proxy groups. The calculations were made based on the information contained in the most recent annual Form 10-K to the SEC for the year 2005. As shown on page 1 of Schedule FJH-7, the composite interest cost rate for the proxy group of four LDCs was 6.68%, while that for the proxy group of eight LDCs was 6.16%. Because I rely upon both proxy groups in terms of formulating my recommended hypothetical capital structure and recommended common equity cost rate, I utilize the midpoint of those long-term composite interest cost rates, or 6.42%. 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 same. Since we cannot rely upon the parent company, SUG, for the reasons discussed supra, and because looking at MGE on a stand-alone basis mandates a reasonable allowance for issuance costs, I have made provision for issuance costs of 15 basis points. In my experience, this is a typical and reasonable estimate which would, under normal conditions (no need to adopt a

hypothetical long-term debt cost rate), be embedded in yield to maturity calculations. Accordingly, the composite midpoint interest cost rate of the two proxy groups of 6.42% plus an estimated allowance for issuance costs of 15 basis points results in a long-term debt cost rate applicable to MGE of 6.57%. I believe this rate is reasonable for use in a cost of capital determination.

Q. HOW DID YOU ESTIMATE THE SHORT-TERM DEBT COST RATE OF 5.47% 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. Some companies indicate that they rely upon commercial paper rates of unspecified maturities, while others refer only to revolving lines of credit with no specifics and yet another to a LIBOR rate plus 0.50%. Inasmuch as there is a forecast for the LIBOR rate from Blue Chip Financial Forecasts, I utilize the three-month estimated LIBOR rate beginning with the first quarter of 2006 and ending with the second quarter of 2007 of 4.97%. Adding an additional 0.50% (or 50 basis points) results in a forward-looking short-term debt cost rate of 5.47%. As indicated previously, the use of SUG is not relevant. However, with regard to short-term debt cost rate, I believe the approach I have taken is reasonable because SUG's revolving line of credit is predicated upon a

LIBOR rate plus 0.57%. In view of the foregoing, and with the knowledge that the economy is very strong and inflationary pressures seem great enough that the Open Market Committee of the Federal Reserve Bank has indicated that it is more than likely that interest rates will continue to rise. In view of the foregoing, I believe the use of a short-term debt cost rate of 5.47% is reasonable relative to a short-term debt ratio of 9.91%. For information purposes only, I have shown on page 10 of Schedule FJH-7 SUG's composite December 31, 2005 long-term interest rate (without regard to issuance costs) to be 6.07%.

X. COMMON EQUITY COST RATE MODELS

A. The Efficient Market Hypothesis (EMH)

Q. ARE ALL OF THE MODELS YOU EMPLOY MARKET-BASED MODELS?

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. 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 Efficient Market Hypothesis (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 process therefore reflects 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.

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.

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

[5] Morin, Roger A., "Regulatory Finance – Utilities' Cost of Capital", Public Utilities Reports, Inc., 1994, p. 136.

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".

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

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

information available to investors and that no degree of sophistication and/or analysis can enable investors to outperform the market. Consequently, it confirms that all perceived risks are taken into account by investors in the prices they pay which reflect the 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, which are 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*

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

> *which is in fact not present' and leaves 'wide room for controversy and argument about the level of k'.* (italics 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'.* (italics added) (p. 398)

Also, Morin[8] states:

> *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 does not make it superior to other methods.* (italics added) (pp. 231-232)

> Each methodology requires the exercise of considerable judgment on the reasonableness of the assumption underlying the methodology and on the reasonableness of the proxies used to validate a theory. *The failure of the traditional infinite growth DCF model to account for changes in relative market valuation, discussed above, is a vivid example of the potential shortcomings of the DCF model when applied to a given company. It follows that more than one methodology should be employed in arriving at a judgment on the cost of equity and that these methodologies*

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

> *should be applied across a series of comparable risk companies. …Financial literature supports the use of multiple methods*. (italics added) (p. 239)

Professor Eugene Brigham, a widely respected scholar and finance academician asserted:

> In practical work, it is often best to use all three methods – CAPM, bond yield plus risk premium, and DCF – and then apply judgement when the methods produce different results. People experienced in estimating capital costs recognize that both careful analysis and very fine judgements are required. It would be nice to pretend that these judgements are unnecessary and to specify an easy, precise way of determining the exact cost of equity capital. Unfortunately, this is not possible. (pp. 239-240)

Another prominent finance scholar, Professor Stewart Myers, in his best-selling corporate finance textbook stated:

> *The constant growth formula and the capital asset pricing model are two different ways of getting a handle on the same problem*. (italics added) (p. 240)

In an earlier article, Professor Myers explained the point more fully:

> *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. (italics added) (p. 240)

In view of the foregoing, it is clear that investors are aware of all of the models including comparable earnings. The EMH requires the assumption that investors use them all.

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 which is expected to be derived from cash flows in the form of dividends and 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 FOR MGE.

A. 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 groups of LDC's have been well in excess of their book values as shown on page 1, Schedules

FJH-3 and FJH-4. As shown during the five years ended 2005, they range from a low 174.00% to a high of 202.15%.

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. Since the unadjusted DCF cost rate produces the investor-expected return on the market value, application of that rate to a lower book value will understate the investor-expected return when market prices substantially exceed book values. There are many macroeconomic factors which influence market values. Thus, as will be explained, regulatory allowed earnings can only influence market values but cannot control them.

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

Q. DOES THE ACADEMIC LITERATURE SUPPORT THE CONTENTION THAT THE MARKET PRICES OF COMMON STOCKS ARE INFLUENCED BY FACTORS WHICH ARE BEYOND THE INFLUENCE OF THE REGULATORY PROCESS?

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

[9] Id., p. 395.

> 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.'

In addition, Bonbright[10] states:

> 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.* (italics added)

Q. IF MARKET PRICES ARE BEYOND THE CONTROL OF RATE REGULATION, DOES A DCF COST RATE PROPERLY REFLECT INVESTORS' REQUIRED RATE OF RETURN WHEN IT IS APPLIED TO A BOOK VALUE WHICH IS SIGNIFICANTLY DIFFERENT 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

[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.

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.

Q. CAN YOU DEMONSTRATE HOW A MARKET-BASED DCF COST RATE WILL UNDERSTATE INVESTORS' REQUIRED RATE OF RETURN ON BOOK COMMON EQUITY WHEN MARKET VALUE IS ABOVE OR BELOW BOOK VALUE, RESPECTIVELY.

A. Yes. Schedule FJH-8 demonstrates how a significantly different book value either understates or overstates investors' required return rate on market price. It is, after all, upon the price that investors pay that they seek their desired return. This hypothetical illustration demonstrates that the expected market-based rate of return is either under-achieved or over-achieved. In the first hypothetical example, 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 6.00% and a dividend yield of 4.00%. It is shown that when the 10.00% return rate is applied to the book value, which is only 55.4% of the market value, the opportunity for total annual return is only $1.333 on book value and not $2.40 (10.00% return on $24 market value). With an annual dividend of $0.96, there is an opportunity to earn only $0.373 in growth which is just 1.55% on the $24 market price in contrast to the 6.00% growth rate in market price expected by investors. Conversely, if market value is less than book value, a market-based DCF cost rate when applied to a greater book value will result in an overstatement of investors' required rate of return related to the book value of common equity.

Q. HAVE ANY REGULATORY COMMISSIONS RECOGNIZED THAT A MARKET-BASED DCF COST RATE UNDERSTATES THE COMMON EQUITY COST RATE IF RELATED TO A BOOK VALUE OF COMMON EQUITY WHICH IS LOWER THAN ITS MARKET VALUE?

A. Yes.

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:[11]

> 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 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.* (italics added)

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[12]:

> 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."* (italics added)

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

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

* * *

> [u]nder the traditional DCF model . . . the appropriate earnings level of the utility would not be derived by applying the DCF result to the market price of the Company's stock . . . it would be applied to the utility's net original cost rate base. *If the market price of the stock exceeds its book value, . . . the investor will not achieve the return which the model finds is necessary*. (italics added)

More recently, the PA PUC has recognized that tendency by utilizing a DCF cost rate which reflects the added financial risk which arises when said rate is applied to a lower common equity ratio (book value) than the market value of such common equity. It did so in a number of instances. Several recent examples are re: Aqua Pennsylvania Water Company (Docket No. R-00038805) in its Order entered August 8, 2004 and in re Pennsylvania Power & Light Company (Docket No. R-00049255) in its Order entered December 22, 2004[13]. 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.

[13] Order at p. 70.

I will utilize the same technique in this matter, as adopted by the PA PUC in PPL (et al), as a test on my conclusion of common equity cost rate derived from the use of all four cost of common equity models.

3. Application of the DCF Model

a. Dividend Yield

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

A. The cost rates obtained are 10.43% for the proxy group of four LDCs and 10.41% for the proxy group of eight Value Line LDCs as shown on Schedule FJH-9. Also shown on the same Schedule FJH-9 for information purposes is SUG's DCF cost rate of 10.98%.

Q. WHAT IS THE BASIS FOR THE AVERAGE UNADJUSTED DIVIDEND YIELDS OF 4.30% AND 4.38% OF THE TWO PROXY GROUPS AND 1.65% FOR SUG SHOWN IN COLUMN NO. 1 OF SCHEDULE FJH-9?

A. The dramatic 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 due to an increasingly competitive environment in the natural gas industry as well as an extremely volatile stock market. Consequently, I

rely on an average of recent spot prices at March 17, 2006 and average of the high and low market prices for the months of January and February 2006 as shown by company and the average of each group on Schedule FJH-10.

b. Discrete Adjustment of Dividend Yield

Q. PLEASE EXPLAIN THE ADJUSTMENT FOR DISCRETE GROWTH, I.E., "DIVIDEND GROWTH COMPONENT" SHOWN IN COLUMN NO. 2 ON SCHEDULE FJH-10.

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 as it should be representative of the next twelve-month period. Therefore, the actual average dividend yields in Column No. 1 on Schedule FJH-10, have been adjusted upward to reflect one-half the rates of growth shown in Column No. 4 of Schedule FJH-10. The resultant adjusted dividend yields are shown in Column No. 3 of Schedule FJH-10.

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 NO. 4 OF SCHEDULE FJH-9.

A. It is shown on Schedule FJH-11 that, on average, individuals own about half of the common shares of the companies in both proxy groups of LDCs. Individual investors are much more likely to rely on information provided by securities analysts than more sophisticated institutional investors. They recognize that analysts' long-term growth forecasts provide greater insight into prospective growth in per share value than historical accounting measures of growth. Analysts' forecasts, which incorporate historical information, are readily available from Value Line and other sources such as ThomsonFN First Call, which now owns and incorporates forecasts of the Institutional Brokers Estimate System (I/B/E/S). The ThomsonFN First Call estimates are readily available on the internet and provide, in many instances, the estimates of a number of analysts. 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 the longer term five-year forecasts. Five years typically is the longest future period for which analysts' forecasts are available. The use of a long-term period such as five years 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 values, 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 ThomsonFN First Call as shown on page 1 of Schedule FJH-12 by company and the averages for each proxy group, and for SUG. Pages 2 through 10 of Schedule FJH-12 contain the most recent Value Line Investment Survey for all of the companies in the proxy groups as well as SUG.

4. Conclusion of DCF Cost Rate

Q. PLEASE SUMMARIZE YOUR CONCLUSION OF DCF COST RATES DERIVED FROM YOUR APPLICATION OF THE DCF MODEL TO THE COMPANIES IN THE TWO PROXY GROUPS OF LDCS AS WELL AS SUG.

A. I will be discussing infra two reality checks which I have made on my ultimate recommendation of common equity cost rate. One of those checks is shown on Schedule FJH-17. The information contained therein shows that the lowest allowed rate of return on common equity to an LDC during the two years ended December

31, 2005 was 9.45%. Accordingly, it is not reasonable to assume that a common equity cost rate lower than 9.45% has any semblance to reality, especially since we are in an environment of consistently increasing (rising) interest rates which have greatest impact on the cost of capital to capital intensive public utilities. Consequently, consideration of only those DCF cost rates at 9.45% or greater produces DCF cost rates of 10.43% for the proxy group of four LDCs and 10.41% for the proxy group of eight Value Line LDCs as shown in Column No. 6, Schedule FJH-9. As noted supra, I show such data for SUG for information purposes only. I conclude that a growth rate for SUG is 9.25%. It is based upon a weighting of 75% to the average EPS growth rate projection of 7.50% from six analysts per Thomson FN/FirstCall. I give 75% weight to this average since 75.4% of SUG's common stock is held by institutions who are less likely to place reliance on Value Line than individual investors. Consequently, I give just 25% weight to the Value Line projected growth in EPS of 14.50%. The resultant SUG DCF cost rate is 10.98% as shown in Column 6, Schedule FJH-9.

Similarly, for the companies in the proxy groups, I give equal weight to the ThomsonFN/FirstCall and Value Line projected EPS growth rates since the percentage of holdings between individuals and institutions is about equal.

Q. HAVE YOU ADJUSTED THE DCF COST RATES TO REFLECT THE ADDITIONAL FINANCIAL RISK ATTRIBUTABLE TO MARKET-BASED COST RATES BEING APPLIED TO A LOWER BOOK VALUE OF COMMON EQUTIY AS DISCUSSED SUPRA AND RECOGNIZED BY REGULATORY COMMISSIONS?

A. Yes. I have utilized the methodology adopted by the PA PUC in recent cases, which is supported in the academic literature.[14] They are 11.69% and 11.60% for the proxy group of four and eight Value Line LDCs, respectively, and 12.32% for SUG as shown on Line No. 5B, Schedule FJH-1, page 2 and as described in detail in Note 5 on pages 3-5 of the same Schedule FJH-1.

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

[14] "Portfolio Analysis Market Equilibrium and Corporate Finance" by Robert S. Hamada (Journal of Finance, Vol. 24, No. 1, March 1969, 13-31).

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. SOME ANALYSTS STATE THAT THE RPM IS ANOTHER FORM OF THE CAPM. DO YOU AGREE?

A. Generally 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 at 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-13, which consists of 9 pages. As can be gleaned from page 1, I have estimated the projected bond yield on Moody's A rated utility bonds to be 6.22%. As explained in Note 4 on page 1, Schedule FJH-13, no adjustment is required to be made to the yield on A rated public utility bonds to reflect the average Moody's bond rating of A2 for each proxy group. As explained in Note 3 on the same page 1 of Schedule FJH-13, an upward adjustment of 0.40% (or 40 basis points) is required to reflect SUG's Moody's Baa3 bond rating. Consequently, the resultant expected average bond yield is 6.22% applicable to each proxy group and 6.62% applicable to SUG. I then calculated the equity risk premiums applicable to each proxy group and SUG. The sum of the prospective bond yields and equity risk premiums equal the RPM-derived common equity cost rate applicable to each proxy group and SUG.

2. <u>Estimation of Expected Bond Yield</u>

Q. PLEASE EXPLAIN THE BASIS OF THE EXPECTED BOND YIELD OF 6.22% APPLICABLE TO EACH OF THE TWO PROXY GROUPS OF LDCS AND 6.62% APPLICABLE TO SUG.

A. Because the cost of common equity is prospective, the use of a prospective yield on similarly-rated long-term debt is appropriate. The average Moody's bond rating for each proxy group is A2, while SUG's is Baa3. I relied upon the consensus forecasts of about 50 economists of the average expected yield on Moody's Aaa rated corporate bonds for the six calendar quarters ending with the second calendar quarter of 2007 as derived from the March 1, 2006 Blue Chip Financial Forecasts (shown on page 7, Schedule FJH-13). As shown on Line No. 1 of page 1 of Schedule FJH-13, the average expected yield on Aaa rated corporate bonds is 5.75%. It is necessary to adjust that average yield to be equivalent to the average yield on Moody's A2 rated utility bonds for each proxy group. In order to obtain an accurate estimate of the average prospective yield on Moody's A rated public utility bonds it is necessary to add the average yield differential of Moody's A rated utility bonds over the average yield on Aaa rated corporate bonds because the Blue Chip economists do not forecast yields on A rated public utility bonds. Consequently, I have calculated the average yield differential to be 47 basis points as shown on page 4, Schedule FJH-13. Thus, the average prospective yield on Moody's A rated public utility bonds is 6.22% (5.75% average yield on Aaa corporate bonds plus 0.47% average yield spread of A rated utility bonds over Aaa corporate bonds) as shown on Line Nos. 2 and 3, respectively of Schedule FJH-13, page 1. When adding the average yield spread of 0.40% of Baa3 rated utility bonds over A rated utility bonds, a total yield

of 6.62% is indicated as applicable to SUG. Risk premiums must then be added to the prospective yields on A and Baa rated public utility bonds of 6.22% and 6.62%, respectively.

3. Estimation of the Equity Risk Premiums

Q. PLEASE EXPLAIN THE BASIS OF THE EQUITY RISK PREMIUM WHICH YOU HAVE DETERMINED TO BE APPLICABLE TO EACH 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 high grade corporate bonds. These analyses are summarized on page 5 of Schedule FJH-13. As shown on Line No. 3 of page 5, the resultant average equity risk premium applicable to the proxy group of four LDCs is 4.31%, while that applicable to the proxy group of eight Value Line LDCs is 4.26%. The average equity risk premium applicable to SUG is 4.44%.

Q. PLEASE EXPLAIN THE BASIS OF THE EQUITY RISK PREMIUMS OF 4.47% AND 4.37% SHOWN ON LINE NO. 1, PAGE 5 OF SCHEDULE FJH-13, WHICH ARE APPLICABLE TO THE TWO PROXY GROUPS OF LDCS AND 5.26% APPLICABLE TO SUG.

A. Those premiums were determined utilizing betas. Equity risk premiums determined through the application of the beta approach are meaningful because the betas were derived from regression analyses of the market prices of common stocks over a recent five-year period. The market prices 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 thus is a logical means by which to allocate a relative share of total market equity risk premium to a specific company or proxy group.

The average total market equity risk premium utilized was 5.26% as shown on page 6, Line No. 7 of Schedule FJH-13. It is based upon an average of the long-term average historical equity risk premium of 6.28% and the forecasted market equity risk premium of 4.24% as shown on page 6, Line Nos. 3 and 6, respectively, of Schedule FJH-13.

To derive the historical market equity risk premium, I used the most recent Ibbotson Associates' data on holding period returns for the S&P 500 Composite Index and Salomon Brothers Long-term High-grade Corporate Bond Index covering the period 1926-2004. The use of holding period returns over a very long period of time is useful in the application of the beta approach. Ibbotson Associates, in its

Valuation Edition - 2005 Yearbook provides sound reasoning why the use of a long-term historical time period is appropriate to estimate the expected equity risk premium. They demonstrate empirically through tests of serial correlation that equity risk premiums are random. They also demonstrate and explain why the arbitrary use of shorter time periods distorts the results of estimated long-term average market equity risk premiums. Moreover, the arbitrary use of shorter time periods is contrary to the long-term randomness of equity risk premiums. Consequently, the use of a long-term average equity risk premium provides stability in contrast to the volatility associated with the arbitrary use of shorter historical time periods. In addition, the use of a long-term average is consistent with the long-term investment horizon implicit in the cost of common equity capital, i.e., the premise of infinity in the standard DCF model used in rate regulation. Ibbotson Associates' full explanation of why the use of the long-term average equity risk premium is appropriate is provided at pages 5 through 8, Schedule FJH-14.

In view of the foregoing and all of Ibbotson Associates' comments contained in Schedule FJH-14, 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 arbitrary 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 which is implicit in the various cost of equity models). Thus, the use of a very long past period to estimate the equity risk premium (because it is random as discussed supra) is consistent with the long-term investment horizon for utilities' common stocks. Consequently, the use of the long-term past to estimate equity risk premium is critical to proper estimation of the long-term future. 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 Ibbotson Associates of 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-14.

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 6.28% is detailed in Line Nos. 1 through 3, page 6 of Schedule FJH-13.

Q. WHY DO YOU ALSO UTILIZE A FORECASTED EQUITY RISK PREMIUM?

A. In order to properly answer this question, I believe it is necessary to first explain two points with regard to the use of a long-term historical arithmetic equity risk premium. First, 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. Secondly, beta is also utilized in conjunction with the prospective yield on A rated public utility bonds.*

It is also appropriate to view the current potential for market price appreciation which may be possible for investors to experience 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 about half of investors in the proxy LDCs 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, in estimating the equity risk premium in the RPM model, it is also appropriate to take into account the forecasted equity risk premium.

The basis of the forecasted market equity risk premium of 4.24% is detailed in Line Nos. 4 through 6, page 6 of Schedule FJH-13. The average of the historical and projected market equity risk premiums is 5.26% as shown on Line No. 7, page 6 of Schedule FJH-13. In this instance, had I not taken into account the forecasted market equity risk premium, my conclusion of RPM cost rates would be greater because the historical equity risk premium of 6.28% exceeds both the forecasted premium of 4.24% as well as the average of both, 5.26%, upon which I do rely.

As shown on Line No. 9, page 6 of Schedule FJH-13, application of the average beta of each proxy group (0.85 for the four LDCs and 0.83 for the eight Value Line

LDCs and 1.00 for SUG) to the average market equity risk premium of 5.26% results in beta adjusted equity risk premiums of 4.47% and 4.37% applicable to each proxy group and 5.26% to SUG, respectively.

Q. PLEASE DESCRIBE THE DERIVATION OF THE EQUITY RISK PREMIUMS OF 4.14% APPLICABLE TO THE TWO PROXY GROUPS AND 3.62% APPLICABLE TO SUG SHOWN ON LINE NO. 2, PAGE 5 OF SCHEDULE FJH-13.

A. For the reasons described supra by Ibbotson Associates, I caused to be performed an analysis of the long-term historical holding period returns applicable to public utilities, i.e., the S&P Public Utility Index for the period 1928-2003, inclusive (2003 being the latest for which data comparable to all prior years is presently available from S&P). The long-term average provides a good basis for future expectations as all types of events are included, even "unusual" ones. The analysis is summarized on page 8 of Schedule FJH-13. After the adjustment necessary to reflect the average equity risk premium applicable to A and Baa rated public utility bonds, the resultant adjusted equity risk premiums applicable to the two proxy groups and SUG are 4.14% and 3.62%, respectively, as indicated on Line No. 3, page 8 of Schedule FJH-13.

Q. WHAT ARE THE INDICATED EQUITY RISK PREMIUMS APPLICABLE TO EACH PROXY GROUP OF LDCS AND SUG?

A. They are 4.31% applicable to the proxy group of four LDCs, 4.26% applicable to the proxy group of eight Value Line LDCs, and 4.44% applicable to SUG as shown on Line No. 6, page 1 and detailed on Line No. 3, page 5 of Schedule FJH-13.

4. Conclusion of RPM Cost Rates

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

A. As shown on Schedule FJH-13, page 1, Line No. 7, they are 10.53% and 10.48% applicable to the proxy groups of four LDCs and the eight Value Line LDCs, respectively and 11.06% applicable to SUG.

5. The RPM Does Not Presume a Constant Equity Risk Premium

Q. DOES THE RPM ASSUME A CONSTANT EQUITY RISK PREMIUM?

A. No. The equity risk premium determined under the RPM varies inversely with interest rate changes since the prospective bond yield is subtracted from the estimated market return. Common sense affirms this to be so, due to common stock investors' expectation of greater returns during periods of declining interest rates and vice versa. In a sense, the equity risk premium is no different than the "g", or growth

component, in the DCF model. The growth component "g" in a DCF cost rate calculated today, will invariably differ in subsequent time periods due to the availability of different growth rate data thereby confirming the reality that the "g" in the DCF model does change, even though it is presumed to be theoretically constant. In that regard, there is no difference between the RPM and DCF models, i.e., both models assume an expectationally constant equity risk premium and growth rate, respectively, but in actuality *both* change regularly.

As Morin[15] states with regard to the DCF model:

> It is not necessary that g be constant year after year to make the model valid. *The growth rate may vary randomly around some average expected value. Random variations around trend are perfectly acceptable, as long as the mean expected growth is constant. The growth rate must be 'expectationally constant' to use formal statistical jargon.* (italics added)

The foregoing confirms that the RPM is similar to the DCF model in the sense that both models contain the assumption of an "expectationally constant" risk premium and growth rate, respectively, despite the fact that each varies randomly around its mean. The mean referred to is the arithmetic mean, thereby indirectly confirming that only the arithmetic mean is appropriate to use when estimating the cost of capital as discussed supra.

[15] Id., p. 111.

D. The Capital Asset Pricing Model (CAPM)

1. Theoretical Basis

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. Morin[16] states:

> At the empirical level, there have been countless tests of the CAPM to determine to what extent security returns and betas are related in the manner predicted by the CAPM.[17] The results of the tests support the idea that beta is related to security returns, that the risk-

[16] Id., at p. 321.

[17] For a summary of the empirical evidence on the CAPM, see Jensen (1972) and Ross (1978). The major empirical tests of the CAPM were published by Friend and Blume (1975), Black, Jensen, and Scholes (1972), Miller and Scholes (1972), Blume and Friend (1973), Blume and Husic (1973), Fama and Macbeth (1973), Basu (1977), Reinganum (1981B), Litzenberger and Ramaswamy (1979), Banz (1981), Gibbons (1982), Stambaugh (1982), and Shanken (1985). CAPM evidence in the Canadian context is available in Morin (1981).

> return tradeoff is positive, and that the relationship is linear. The contradictory finding is that the empirical Security Market Line (SML) is not as steeply sloped as the predicted SML. With few exceptions, the empirical studies agree that the implied intercept term exceeds the risk-free rate and the slope term is less than predicted by the CAPM. That is, low-beta securities earn returns somewhat higher than the CAPM would predict, and high-beta securities earn less than predicted.
>
> * * *
>
> 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 be determined empirically. …the value of x that best explains the observed relationship is between 0.25 and 0.30. If x = 0.25, the equation becomes:
>
> $$K = RF + 0.25(RM - RF) + 0.75\beta(RM - RF)$$[18]
>
> * * * * *

The ECAPM is a return adjustment, i.e., a y-axis adjustment and thus does not increase the adjusted beta, which is an x-axis adjustment and 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-15, which consists of 4 pages.

[18] Id., at pp. 335-336.

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 4.98%. It is based upon the average consensus forecast of the reporting economists in the March 1, 2006 issue of Blue Chip Financial Forecasts for the yields on 20-year U.S. Treasury Bonds for the six quarters ending with the second calendar quarter 2007 as shown in Note 2 on page 4 of Schedule FJH-15.

Q. WHY IS THE AVERAGE PROSPECTIVE YIELD ON 20-YEAR U.S. TREASURY BONDS APPROPRIATE FOR USE AS THE RISK-FREE RATE?

A. The yield on 20-year T-Bonds 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, implicit in the standard DCF model employed in proceedings such as these. In addition, Ibbotson Associates[19] states:

[19] Stocks, Bonds, Bills and Inflation: 2005 Yearbook – Valuation Edition, Ibbotson Associates, Chicago, IL, p. 57.

> 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-year Treasury note would not be appropriate since the company will continue to exist beyond those five years. (italics added for emphasis)

In summary, the average expected yield on 20-yearTreasury Bonds 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. <u>Market Equity Risk Premium</u>

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 an average of forecasted and long-term historical return rates from which I subtract the risk-free

rate. The result is a market equity risk premium, some proportion of which must be allocated to each proxy group. I make the allocation of the market equity risk premium through the use of beta because beta is a measure of the risk of a security relative to the entire market.

The basis of the projected market equity risk premium is explained in detail in Note 1 on page 4 of Schedule FJH-15. 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 9.99%. The long-term historical total annual arithmetic mean return rate of 12.40% on the market is from Table 2-1 of Ibbotson Associates' Stocks, Bonds, Bills and Inflation: Valuation Edition – 2005 Yearbook. The relevant risk-free rate was deducted from the total market return rate. For example, from the Value Line projected total market return of 9.99%, the forecasted average risk-free rate of 4.98% was deducted indicating a forecasted market risk premium of 5.01%. From the Ibbotson Associates' arithmetic mean long-term historical total return rate of 12.40% 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 7.20%. Thus, the average of the projected and historical total market risk premiums of 5.01% and 7.20%, respectively, is 6.105%

rounded to 6.11%. CAPM cost rates by company and the average for each proxy group are shown on page 2 (CAPM) and page 3 (ECAPM) of Schedule FJH-15 .

4. Conclusion of CAPM Cost Rates

Q. WHAT ARE THE RESULTS OF YOUR APPLICATIONS OF THE CAPM AND ECAPM?

A. They are shown on Schedule FJH-15, page 1.

The average traditional CAPM cost rates are 10.48% and 10.17%, while the average ECAPM cost rates are 10.40% and 10.32% for the proxy groups of four and eight Value Line LDCs, respectively. I rely upon the average of both the CAPM and ECAPM cost rates. They are 10.44% and 10.25% for the proxy groups of four and eight Value Line LDCs, respectively, and 11.09% for SUG, as shown on Line No. 3, page 1, Schedule FJH-15. For the reasons discussed supra with regard to the results of the DCF model, only one traditional CAPM result was eliminated from consideration, i.e., the 9.26% for Northwest Natural Gas Company because it was less than the lowest allowed ROE to an LDC by a regulatory commission during the two years ended December 31, 2005, namely 9.45%.

E. The Comparable Earnings Model (CEM)

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. 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, such use 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-16, which consists of six pages. Pages 1 and 2 contain the relevant data for the domestic non-price regulated companies which are comparable in total risk to my proxy groups of LDCs. Pages 3 and 4 contains information similar to pages 1 and 2 but as relates to companies comparable in total risk to SUG. Pages 5 and 6 contain the notes relative to pages 1 through 4.

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 price-regulated proxy groups of LDCs. The proxy groups 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 two proxy groups of non-price regulated firms comparable to the price-regulated proxy groups of four LDCs and eight Value Line LDCs, respectively. The average company in each proxy group of non-price regulated companies is comparable to the average company in each proxy group of LDCs and SUG, respectively. Total risk is the sum of non-diversifiable market risk and diversifiable company-specific risks. The criteria used in the selection of the non-price regulated firms were:

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 each proxy group of LDCs, 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 each proxy group of LDCs, 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.* 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 each proxy group of LDCs 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 PROJECTED ROEs OF THE 38 DOMESTIC, NON-PRICE REGULATED COMPANIES SHOWN ON PAGE 1 OF SCHEDULE FJH-16 WHICH ARE COMPARABLE IN TOTAL RISK TO THE PROXY

GROUP OF FOUR LDCS, THE 23 COMPANIES SHOWN ON PAGE 2 OF SCHEDULE FJH-16 WHICH ARE COMPARABLE IN TOTAL RISK TO THE PROXY GROUP OF EIGHT VALUE LINE LDCS, AND THE 98 COMPANIES SHOWN ON PAGES 3 AND 4 OF SCHEDULE FJH-16 WHICH ARE COMPARABLE IN TOTAL RISK TO SUG.

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 and performed a test (Student's T-Statistic) to assure that I would not rely upon any ROE(s) that were statistical outliers. As a result, three ROEs were found to be statistical outliers, for the proxy group of four LDCs and SUG and two were found to be statistical outliers for the proxy group of eight Value Line LDCs.

I also decided to eliminate from each group all those projected ROEs of 20.0% or higher and those below 9.45%.

The mean ROEs excluding those determined to be statistical outliers per the T-tests are 13.69% and 12.67% based upon the proxy groups related to the four and eight Value Line LDCs and 14.94% to SUG, respectively.

I rely, however, on the average ROEs of 14.26% and 14.37% for the proxy groups and 13.88% for SUG after eliminating ROEs 20.0% or higher and those below 9.45%. I eliminated those 20.0% or higher because it is unlikely that any gas distribution utility would be awarded an opportunity to earn such returns on equity. Conversely, I also eliminated ROEs below 9.45% because 9.45% is the lowest awarded ROE to an LDC by any state commission during the period January 1, 2004 through December 31, 2005, especially since it is clear that prospectively, interest rates and hence the cost of equity will continue to increase, especially for capital intensive public utilities. In eliminating all ROEs of 20.00% or higher and those below 9.45%, I also automatically eliminated all of the statistical outliers discussed supra.

4. Conclusion of CEM Cost Rate

Q. WHAT ARE THE MOST INDICATIVE CEM COST RATES APPLICABLE TO THE PROXY GROUPS OF FOUR LDCS AND EIGHT VALUE LINE LDCS AND SUG, RESPECTIVELY?

A. As summarized on page 2 of Schedule FJH-1 and in accordance with the discussion supra, the average Value Line five-year projected ROEs, after exclusion of those 20.0% or higher and less than 9.45%, are 14.26% applicable to the proxy group of

four LDCs, 14.37% applicable to the proxy group of eight Value Line LDCs, and 13.88% applicable to SUG.

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, IN YOUR OPINION, THE CONCLUSION OF COMMON EQUITY COST RATE MUST BE BASED UPON THE RESULTS OF THE APPLICATION OF 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.

Investors are aware of all of these cost of common equity models which are in use and discussed in the financial literature. Therefore, belief in the EMH requires that all of them be taken into account.

Q. WHAT IS YOUR RECOMMENDED EQUITY COST RATE APPLICABLE TO MGE?

A. It is 11.95% applicable to MGE and it is derived from the application of all four cost of common equity models to the two proxy groups of LDCs. Those proxies are less risky than MGE and had an average cost rate of 11.50% as shown on Line No. 6, page 2 of Schedule FJH-1. Thus, the 11.50% cost rate needs to be adjusted upwards as to be reflective of MGE's grater risk attributable to its small size and lack of protection from the vagaries of the weather vis-à-vis the proxy groups. Two adjustments are necessary. Those adjustments are shown on Line Nos. 7A and 7B of Schedule FJH-1, page 2. The first adjustment of 0.30% (explained in Note 6 on page 5 of the same Schedule FJH-1) is necessary in order to reflect MGE's considerably smaller size vis-à-vis the average size of each proxy group. The small size adjustment is detailed and quantified in pages 9-11 of Schedule FJH-1 . As discussed supra, MGE's smaller size actually indicates an increase in the cost of common equity of between 0.86% and 0.93% based upon the two proxy groups and 1.54% based upon SUG; however, in order to be conservative and yet still recognize

the Company's small size, I have only provided for an upward adjustment of 0.30% or 30 basis points based upon the proxy groups or 0.50% or 50 basis points based upon SUG, roughly only one-third of the magnitude of the adjustments indicated.

In addition, as explained in Note 7 on page 5 of Schedule FJH-1, 50% of the proxy group of four LDCs have protection against the vagaries of weather, while 62.5%, or five of the eight Value Line LDCs had such protection. MGE has no protection against the impact of the vagaries of weather on revenues, earnings and cash flows. The lack of protection from the vagaries of the weather increase the potential for greater volatility of earnings and cash flows vis-à-vis the proxy groups and thus equals greater risk. The adjustment on Line 7B of Schedule FJH-1, page 2 of 0.15% reflects the average of the upward adjustments of each proxy group as explained in detail in Note 7, page 5 of Schedule FJH-1. I believe that to have such protection, such as a weather normalization adjustment clause, reduces common equity cost rate risk by 0.25%. Conversely, because MGE does not have such a clause in place, the cost rates of the proxy groups must be adjusted upward on a pro rata basis to reflect MGE's greater common equity risk. The average of those adjustments is 0.15% and is applicable to the two proxy groups.

Thus, the 11.50% cost rate applicable to the two proxy groups plus the two upward risk adjustments of 0.30% for small size and 0.15% for lack of protection from the vagaries of the weather, as discussed supra and summarized on Line Nos. 7A and 7B on Schedule FJH-1, page 2, equal 11.95%.

Q. MR. HANLEY, YOU HAVE MADE IT QUITE CLEAR THAT YOU BELIEVE THAT SUG IS NO LONGER A MEANINGFUL PROXY TO ESTABLISH A FAIR RATE OF RETURN FOR MGE. NONETHELESS, IF THE COMMISSION STILL WANTED TO UTILIZE SUG AS A PROXY WHAT COMMON EQUITY COST RATE IS INDICATED?

A. It is 12.50% as shown on page 2 of Schedule FJH-1. It is based upon a 12.00% common equity cost rate adjusted upwards by 0.50% to reflect MGE's small size vis-à-vis SUG. As mentioned supra, my recommended upward adjustment is only about one-third of the 1.54% upward adjustment indicated through quantification as summarized on page 9 of Schedule FJH-1. I reiterate that SUG is no longer a meaningful proxy to establish a ratemaking capital structure and/or cost of common equity for MGE for all of the reasons discussed supra, including the greater risk attributable to SUG's: divestiture of a significant portion of its gas distribution assets; stated intention to divest its remaining distribution assets; recent $1.6 billion acquisition of Sid Richardson Energy Services; and announced movement from a

utility to a leader in the more risky natural gas transportation and energy services industry.

XII. REALITY CHECKS

Q. HAVE YOU PERFORMED ANY REALITY CHECKS TO AFFIRM THAT A COMMON EQUITY COST RATE OF 11.95% IS REASONABLE?

A. Yes, I have. There are two checks.

The first check, which is shown on Schedule FJH-17, is a summary of regulatory awards made to gas distribution companies during the period January 1, 2004 through December 31, 2005. As shown, the average authorized rate of return on common equity (ROE) in Commission decided (litigated) cases was 10.66% relative to an average common equity ratio of 46.91%. Capital costs have been rising and are expected to continue to rise during any reasonable period of time that new rates resulting from this proceeding would be in effect. For example, reference to the consensus forecasts of March 1, 2006 from Blue Chip Financial Forecasts (Schedule FJH-13, page 7) the average yield on Aaa corporate bonds is expected to increase by 50 basis points between early 2006 and the second quarter 2007. When the average 10.66% allowed return on equity is adjusted to reflect the March 1, 2006 projected increase in the Aaa corporate bond rate plus the clearly yet unreflected impact on the

forecasts of new Fed Chairman Bernanke's pronouncements about the strength of the economy and the likelihood of future interest rate increases as well as MGE's unique risks are taken into account, my recommendation appears to be reasonable.

The second check is the DCF results based on the proxy groups adjusted for financial risk as discussed supra. After those adjustments are made (as discussed in Note 5 to Schedule FJH-1, pages 3-5), the adjusted DCF cost rates are 11.69% and 11.60%, respectively, based on the two proxy groups and 12.32% based on SUG. An average adjusted DCF cost rate of 11.645% based on the two proxy groups plus 0.30% for size, plus 0.15% for lack of protection from the vagaries of the weather indicates a 12.095% common equity cost rate applicable to a 46.00% common equity ratio for MGE.

In view of the foregoing, I believe my recommendation is reasonable.

Q. DOES THAT CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does.

APPENDIX A

PROFESSIONAL QUALIFICATIONS

OF

FRANK J. HANLEY, CRRA
PRESIDENT

AUS CONSULTANTS - UTILITY SERVICES

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.

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 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, the Public Utilities Commission of Nevada, 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 – Utility Services 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 National Association of Water Companies and the Energy Association of Pennsylvania. AUS Consultants – Utility Services 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. Since May 1996, I have 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 and 2004, by invitation, I was a Guest Professor at Rutgers University – Camden for classes of undergraduate finance students, and managerial accounting students, respectively.