EXHIBIT

Exhibit No.:	
Issue(s):	Rate of Return
Witness/Type of Exhibit:	Burdette/Direct
Sponsoring Party:	Public Counsel
Case No.:	GR-2001-292

DIRECT TESTIMONY

OF

MARK BURDETTE

Submitted on Behalf of
the Office of the Public Counsel

MISSOURI GAS ENERGY

Case No. GR-2001-292

April 19, 2001

Exhibit No. 103
Date 6-25-01 Case No. GR-2001-292
Reporter Stewart

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Missouri Gas Energy's Tariff filing for General Rate Increase.	))	Case No. GR-2001-292

AFFIDAVIT OF MARK BURDETTE

STATE OF MISSOURI)
) ss
COUNTY OF COLE)

Mark Burdette, of lawful age and being first duly sworn, deposes and states:

1. My name is Mark Burdette. I am a Financial Analyst for the Office of the Public Counsel.

2. Attached hereto and made a part hereof for all purposes is my direct testimony consisting of pages 1 through 41 and Schedules MB1 through MB10.

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

Mark Burdette

Subscribed and sworn to me this 19th day of April 2001.

Bonnie S. Howard
Notary Public

My commission expires May 3, 2001.

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MISSOURI GAS ENERGY

A DIVISION OF SOUTHERN UNION COMPANY

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INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. Mark Burdette, P.O. Box 7800, Jefferson City, Missouri 65102-7800.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am employed by the Office of the Public Counsel of the State of Missouri (OPC or Public Counsel) as a Public Utility Financial Analyst. Also, I am an adjunct faculty member with Columbia College. I teach undergraduate Business Finance and graduate-level Managerial Finance.

A. PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND.

Q. I earned a Bachelor of Science in Electrical Engineering from the University of Iowa in May 1988. I earned a Master's in Business Administration with double emphases in Finance and Investments from the University of Iowa Graduate School of Management in December 1994.

Q. PLEASE DESCRIBE YOUR CONTINUING EDUCATION.

A. I have attended various regulatory seminars presented by the Financial Research Institute, University of Missouri-Columbia and the National Association of State Utility Consumer Advocates. Also, I attended The Basics of Regulation: Practical Skills for a Changing Environment presented by the Center for Public Utilities, New Mexico State University.

Q. DO YOU HAVE ANY PROFESSIONAL AFFILIATIONS?

A. Yes. I am a member of the Society of Utility and Regulatory Financial Analysts (SURFA).

Q. DO YOU HOLD ANY PROFESSIONAL DESIGNATIONS?

A. Yes. I have been awarded the professional designation Certified Rate of Return Analyst (CRRA) by the Society of Utility and Regulatory Financial Analysts. This designation is awarded based upon work experience and successful completion of a written examination.

Q. HAVE YOU PREVIOUSLY FILED TESTIMONY BEFORE THE MISSOURI PUBLIC SERVICE COMMISSION (MPSC OR THE COMMISSION)?

A. Yes.

Q. WHAT IS THE PURPOSE OF THIS TESTIMONY?

A. I will present a cost-of-capital analysis for Missouri Gas Energy (MGE, the Company). I will recommend and testify to the capital structure, embedded cost rates, fair return on common equity, and weighted average cost of capital that should be allowed in this proceeding.

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

A. Yes. I have prepared an analysis consisting of 10 Schedules that is attached to this testimony (MB-1 through MB-10). This analysis was prepared by me and is correct to the best of my knowledge and belief.

Q. DOES MISSOURI GAS ENERGY HAVE PUBLICLY TRADED STOCK?

A. No. MGE is a division of Southern Union Company (Southern Union, SUG). Southern Union's common equity trades under the ticker SUG.

Q. HOW DID YOU CALCULATE A FAIR RETURN ON COMMON EQUITY FOR MGE?

A. I utilized the standard Discounted Cash Flow (DCF) methodology applied to a group of eight publicly traded gas distribution utilities comparable to MGE to calculate a fair return on common equity for MGE. I substantiated the results of this analysis using a Capital Asset Pricing Model (CAPM) analysis. The DCF model cannot be applied to Southern Union Company because the company does not pay a cash dividend.

SUMMARY OF FINDINGS

Q. PLEASE SUMMARIZE YOUR FINDINGS CONCERNING THE OVERALL COST OF CAPITAL FOR MGE.

A. MGE should be allowed an overall return of 8.75% on its net original-cost rate base. This return has been determined using Southern Union Company's capital structure and embedded cost rates, and a return on common equity based primarily on a DCF analysis of gas distribution companies comparable to MGE.

CAPITAL STRUCTURE

Q. HOW IS MGE CURRENTLY CAPITALIZED?

A. MGE is a division of Southern Union Company and does not issue its own debt or equity. All capitalization is supplied from the parent, Southern Union. Therefore, I used Southern Union Company's capital structure (and associated embedded costs of preferred stock and long- and short-term debt) to calculate an overall rate of return for MGE. Southern Union's capital structure at the end of the test year consists of 32.47% common equity, 4.36% preferred stock, 60.61% long term debt and 2.55% short term debt. This capital structure is shown on schedule MB-1.

Q. IS THE CURRENT CAPITAL STRUCTURE CONSISTENT WITH HOW SOUTHERN UNION HAS BEEN CAPITALIZED IN THE PAST?

A. Southern Union's management continues to maintain a relatively high level of debt and low level of common equity in the company's capital structure. In fact, the level of common equity in this case is lower than the level in MGE's two previous rate cases (GR-96-285 and GR-98-140) because the Company has continued to take on more debt. My capital structure proposals in all three cases were appropriately based on the Company's actual, management-determined, capital structure.

The use of a hypothetical capital structure as proposed by Company in this case serves only one purpose – to artificially increase the calculated rate of return. This increased rate of return would lead directly to rates for Missouri's ratepayers that are higher than they should be.

Q. HOW DOES SOUTHERN UNION'S CURRENT CAPITAL STRUCTURE COMPARE WITH OTHER GAS DISTRIBUTION UTILITIES?

A. According to Value Line Composite Statistics, the common equity ratio for Natural Gas (Distribution) companies has averaged 47.5%, contrasted with Southern Union's common

equity ratio of 32.47%. The 31 Natural Gas Distribution and Integrated Natural Gas Companies covered by C.A. Turner Utility Reports have an average common equity ratio of 40.0%.

Q. HOW DOES SOUTHERN UNION'S CAPITAL STRUCTURE COMPARE WITH THE CAPITAL STRUCTURE OF YOUR GROUP OF PROXY COMPANIES?

A. As shown on Schedule MB-2, the average common equity ratio for the eight proxy companies has averaged 53.1% over the past five years. The average on 31 December 2000 for the eight companies was 55.4%. These averages contrast with Southern Union's 32.47% common equity ratio.

Q. WHAT CAPITAL STRUCTURE DO YOU RECOMMEND?

A. I recommend the following capital structure be used in this proceeding:

	Percent
Common Equity	32.47%
Preferred Stock	4.36%
Long term debt	60.61%
Short term debt	2.55%

EMBEDDED COST RATES

Q. WHAT IS THE APPROPRIATE EMBEDDED COST RATE FOR SOUTHERN UNION'S TRUST PREFERRED STOCK?

A. The embedded cost rate is 9.80% for Southern Union's preferred stock. Calculation of the level and embedded cost of preferred stock is shown on Schedule MB-3.

Q. WHAT IS THE APPROPRIATE EMBEDDED COST RATE FOR SOUTHERN UNION'S LONG TERM DEBT?

A. The embedded cost rate is 8.124% for Southern Union's long term debt as of 31 December 2000, as reported by the Company in response to OPC data request 2002a and Staff data

request 3802. The level and embedded cost of long term debt will be updated via the true-up process in this case.

Q. WHAT IS THE APPROPRIATE EMBEDDED COST RATE FOR SOUTHERN UNION'S SHORT TERM DEBT?

A. The embedded cost of Southern Union's short term debt is 7.27%. This cost was calculated as a weighted average of the monthly cost rates for the test year. The level and embedded cost of short term debt will be updated via the true-up process in this case. Calculation of the level and embedded cost of short term debt is shown on Schedule MB-4.

COST OF COMMON EQUITY

Q. WHAT IS YOUR RECOMMENDED COST OF COMMON EQUITY FOR MGE?

MGE should be allowed a return on common equity of 9.90%.

Q. HOW DID YOU ARRIVE AT YOUR RECOMMENDED COST OF COMMON EQUITY FOR MGE?

A. I relied primarily on a Discounted Cash Flow (DCF) analysis performed on a group of eight LDCs to calculate a cost of common equity for MGE. Also, I performed a Capital Asset Pricing Model (CAPM) analysis on the group.

DISCOUNTED CASH FLOW MODEL

Q. PLEASE DESCRIBE THE STANDARD DISCOUNTED CASH FLOW (DCF) MODEL YOU USED TO ARRIVE AT THE APPROPRIATE COST OF EQUITY CAPITAL.

A. The model is represented by the following equation:

$$k = D/P + g$$

where "k" is the cost of equity capital (i.e. investors' required return), "D/P" is the current dividend yield (dividend (D) divided by the stock price (P)) and "g" is the expected sustainable growth rate.

If future dividends are expected to grow at a constant rate (i.e., the constant growth assumption) and dividends, earnings and stock price are expected to increase in proportion to each other, the sum of the current dividend yield (D/P) and the expected growth rate (g) equals the required rate of return, or the cost of equity, to the firm. This form of the DCF model is commonly used in the regulatory arena and is known as the constant growth, or Gordon, DCF model. The constant growth DCF model is based on the following assumptions:

1) A constant rate of growth,

2) The constant growth will continue for an infinite period,

3) The dividend payout ratio remains constant,

4) The discount rate must exceed the growth rate, and

5) The stock price grows proportionately to the growth rate.

Although all of these assumptions do not always hold in a technical sense, the relaxation of these assumptions does not make the model unreliable.

The DCF model is based on two basic financial principals. First; the current market price of any financial asset, including a share of stock, is equivalent to the value of all expected future cash flows associated with that asset discounted back to the present at the appropriate discount rate. The discount rate that equates anticipated future cash flows and the current market price is defined as the rate of return or the company's cost of equity capital.

Cash flows associated with owning a share of common stock can take two forms: selling the stock and dividends. Just as the current value of a share of stock is a function of

future cash flows (dividends), the *future* price of the stock at any time is also a function of future dividends. When a share of stock is sold, what is given up is the right to receive all future dividends. Therefore, the DCF model, using expected future dividends as the cash flows, is appropriate regardless of how long the investor plans to hold the stock. Determination of a holding period and an associated terminal price is unnecessary. The irrelevance of investors' time horizons is emphasized by Brealey and Myers:

> How far out could we look? In principle the horizon period *H* could be infinitely distant. Common Stocks do not expire of old age. Barring such corporate hazards as bankruptcy or acquisition, they are immortal. As *H* approaches infinity, the present value of the terminal price ought to approach zero.... We can, therefore, forget about the terminal price entirely and express today's price as the present value of a perpetual stream of cash dividends. (Principles of Corporate Financing, Fourth Edition, page 52).

The other basic financial principal on which the DCF is grounded is the "time value of money." Investors view a dollar received today as being worth more than a dollar received in the future because a dollar today can immediately be invested. Therefore, future cash flows are discounted. The rate used by investors to discount future cash flows to the present is the discount rate or opportunity cost of capital.

GROWTH RATE

Q. TO WHAT DOES THE GROWTH COMPONENT OF THE DCF FORMULA REFER?

A. The growth rate variable, g, in the traditional DCF model is the dividend growth rate investors expect to continue into the *indefinite future* (i.e., the sustainable growth rate).

Q. HOW IS THE SUSTAINABLE GROWTH RATE DETERMINED?

A. The sustainable growth rate is determined by analyzing historical and projected financial information for the Company. It is important to recognize the fundamentals of long-term investor-expected growth when developing a sustainable growth rate. Future dividends will

be generated by future earnings and the primary source of growth in future earnings is the reinvestment of present earnings back into the firm. This reinvestment of earnings also contributes to the growth in book value. Furthermore, it is the earned return on reinvested earnings and existing capital (i.e., book value) that ultimately determines the basic level of future cash flows. Therefore, one proxy for the future growth rate called for in the DCF formula is found by multiplying the future expected earned return on book equity (r) by the percentage of earnings expected to be retained in the business (b). This calculation, known as the "b*r" method, or *retention* growth rate, results in one measure of the sustainable growth rate called for in the Discounted Cash Flow formula. While the retention growth rate can be calculated using historic data on earnings retention and equity returns, this information is relevant only to the extent that it provides a meaningful basis for determining the future sustainable growth rate. Consequently, projected data on earnings retention and return on book equity are generally more representative of investors' expectations.

Q. CAN YOU PROVIDE AN EXAMPLE THAT ILLUSTRATES THE FUNDAMENTALS OF RETENTION GROWTH AS A PROXY FOR SUSTAINABLE GROWTH?

A. Yes. To better understand the principles of sustainable growth, it is helpful to compare the growth in a utility's cash flows to the fundamental causes of growth in an individual's passbook account. For an individual who has $1,000 in a passbook account paying 5.0% interest, earnings will be $50 for the first year. If this individual leaves 100% of the earnings in the passbook account (retention ratio equals 100%), the account balance at the end of the first year will be $1,050. Total earnings in the second year will be $52.50 ($1,050 x 5.0%), and the growth rate of the account in year two is 5.0% [100%(b) x 5%(r)]. On the other hand, if the individual withdraws $30 of the earnings from the first year and reinvests only $20 (retention ratio equals 40%) earnings in the second year will be only $51.00 ($1,020 x 5.0%), with growth equaling 2.0% [($1,020-$1,000)/$1,000 = 2.0% =

40%(b) x 5%(r)]. In both cases, the return, along with the level of earnings retained, dictate future earnings.

These exact principles regarding growth apply to a utility's common stock. When earnings are retained, they are available for additional investment and, as such, generate future growth. When earnings are distributed in the form of dividends, they are unavailable for reinvestment in those assets that would ultimately produce future growth. Either way, for both a utility's common stock or an individual's passbook account, the level of earnings retained, along with the rate of return, determine the level of sustainable growth.

Q. ARE THERE ANY OTHER FACTORS THAT INFLUENCE INVESTOR-EXPECTED SUSTAINABLE GROWTH?

A. Yes. Stock financing will cause investors to expect additional growth if a company is expected to issue new shares at a price above book value. The excess of market price over book value would benefit current shareholders, increasing their per share book equity. Therefore, if stock financing is expected at prices above book value, shareholders will expect their book value to increase, and that adds to the growth expectation stemming from earnings retention, or "b*r" growth. A more thorough explanation of "external" growth is included in Appendix (I). This external growth factor has been included in all historic and projected retention growth rate calculations for the group of comparable utilities.

Q. ARE THERE OTHER GROWTH RATE PARAMETERS THAT ARE SOMETIMES USED BY ANALYSTS TO MEASURE GROWTH?

A. Yes. Other methods sometimes used as a proxy for determining the investor-expected sustainable growth rate utilized in the DCF model include: 1) *historical* growth rates, and 2) analysts' *projections* of expected growth rates. Three commonly-employed historic growth parameters are: 1) earnings per share, 2) dividends per share, and 3) book value per share. Additionally, analysts' projections of future growth in earnings per share, dividends

per share, and book value per share are sometimes used as an estimate of the sustainable growth rate.

As a matter of completeness, **all** of the above-mentioned techniques for measuring growth were utilized in order to calculate a sustainable growth rate.

Q. DID YOU EXCLUDE ANY OF YOUR CALCULATED GROWTH RATES FROM THE DETERMINATION OF AVERAGES?

A. Yes. I excluded any negative growth rates from my calculations.

Also, I excluded any compound earnings per share (EPS) growth rates which began in a year when the payout ratio was greater than one (the dividend paid out was greater than earnings for that year.) In those circumstances, the calculated compound growth rate was artificially high. Any growth rates excluded from calculations are shown it italics on Schedule MB-6, pages 2-9.

Q. DID YOU RELY ON DATA FROM SOUTHERN UNION OR MGE ONLY TO ARRIVE AT A RECOMMENDATION OF SUSTAINABLE GROWTH FOR MGE?

A. No. I analyzed a group of eight gas utilities to provide some insight as to the reasonableness of a sustainable growth rate recommendation for MGE.

Appendix G, attached to this testimony, shows the selection criteria used to develop a group of traditional gas utilities with financial risk characteristics similar to MGE. The following companies met the selection criteria: 1)AGL Resources Inc.; 2) Cascade Natural Gas Company; 3) NICOR Inc.; 4) Northwest Natural Gas Co.; 5) People's Energy Corporation; 6) Piedmont Natural Gas Co., Inc.; 7) South Jersey Industries, Inc.; and 8) WGL Holdings, Inc. Schedule MB-5 shows the industry group companies and a list of risk measures. Schedule MB-6, page 1, summarizes the growth rate calculations for the group. Schedule MB-6, pages 2-9, contain the growth rate calculations for individual companies.

Q. WHAT GROWTH RATE PARAMETERS HAVE YOU EXAMINED IN ORDER TO ESTABLISH INVESTOR-EXPECTED GROWTH FOR MGE?

A. The following growth parameters have been reviewed for the group of ten companies: 1) my calculations of historic compound growth in earnings, dividends, and book value based on data from Value Line; 2) average of five-year and ten-year historic growth in earnings, dividends, and book value; 3) projected growth rate in earnings, dividends, and book value; 4) historic retention growth rate; and, 5) projected retention growth rate.

Q. PLEASE EXPLAIN IN MORE DETAIL HOW THE HISTORIC GROWTH RATES OF EARNINGS, DIVIDENDS, AND BOOK VALUE WERE DETERMINED.

A. Historic rates of growth in earnings per share (EPS), dividends per share (DPS), and book value per share (BVPS) were analyzed using two methods. First, compound growth rates were calculated for the five-year periods ending 1998, 1999 and 2000. These three five-year compound growth rates were then averaged and are labeled "Ave. Compound Gr." on line (16) of Schedule MB-6, pages 2-9.

The second measure of historic growth was taken from Value Line. I averaged Value Line's calculated 5-year and 10-year historical growth rates when both were available. If only one was available, I used that one. The historic rates of growth furnished by Value Line are included in this analysis because:

1) The Value Line growth rates are readily available for investor use;

2) The Value Line rates of growth reflect both a five-year and ten-year time frame; and

3) The Value Line rates are measured from an average of three base years to an average of three ending years, smoothing the results and limiting the impact of nonrecurring events.

Value Line historic growth measurements for EPS, DPS and BVPS appear on line (19) of Schedule MB-6, pages 2-9.

Q. PLEASE DISCUSS YOUR ANALYSIS OF PROJECTED GROWTH RATE DATA.

A. Projected growth rates in EPS, DPS, and BVPS were taken from Value Line and are found on line 30 of Schedule MB-6, pages 2-9. Projected growth in EPS was also taken from First Call Corporation (line 32). If First Call did not issue a projection for a particular company, that space contains n/a. Information from First Call is available to the average investor. The projected growth in EPS found on line 36 is the average of earnings growth projections furnished by Value Line and First Call. Value Line's projected growth in dividends and book value are listed again on line 36.

Q. PLEASE DISCUSS YOUR ANALYSIS OF HISTORIC AND PROJECTED RETENTION GROWTH RATES.

A. *Historic retention growth was determined using the product of return (r) and retention rate* (b) for the years 1996-2000, and the average was calculated (line 10, final column). The projected retention growth data, found on lines 25-27 of Schedule MB-6, pages 2-9 is based on information from Value Line. *Projected retention growth was calculated for 2001 and* the period 2003-05. An average of these growth rates was calculated and compared to the growth rate for the 2003-05 period alone. The *larger* value, either the average or the 2003-*05 rate was utilized as the projected retention growth rate.*

Investors' expectations regarding growth from external sources (i.e. sales of additional stock at prices above book value) has been included in the determination of both historic and projected growth.

Q. PLEASE SUMMARIZE YOUR HISTORIC AND PROJECTED GROWTH RATE ANALYSIS FOR YOUR PROXY GROUP OF COMPANIES.

A. The following table outlines the results of the analysis of growth rates for the group. The high average growth rate is 6.21% (projected EPS) and the low average growth rate is 2.0% (historic DPS). The overall average of all growth rates for all eight companies is 3.87% (Schedule MB-6, page 1). In all cases, negative growth rates were *not* included in the calculation of averages.

Industry group growth rate summary:

Average Historical Growth: 3.28% Average Projected Growth: 4.82%

	EPS	DPS	BVPS
Historic Compound Growth	3.66%	2.39%	3.87%
Historic Value Line Growth	3.19%	2.00%	3.72%
Projected Growth	6.21%	2.13%	5.19%

	Historic	Projected
Retention Growth	*4.16%*	*5.75%*

Q. WHICH GROWTH RATE DO YOU CONSIDER TO BE REFLECTIVE OF THE INVESTOR-EXPECTED GROWTH FOR YOUR GROUP OF COMPANIES?

A. I would expect a sustainable growth rate for this group of proxy gas utilities to be in the range of 4.0% to 5.0%.

Q. WHICH GROWTH RATE DO YOU CONSIDER TO BE REFLECTIVE OF THE INVESTOR-EXPECTED GROWTH FOR MGE?

A. I would expect the sustainable growth rate for MGE to be in the same range of 4.0% to 5.0% as the proxy group. Due to Southern Union Company's aggressive growth strategies, I chose a DCF sustainable growth rate for MGE of approximately 4.85%. This rate is in the upper end of the range and is close to the proxy group's average projected growth rate of 4.82%.

DIVIDEND YIELD

Q. WHAT IS THE APPROPRIATE DIVIDEND YIELD TO USE IN THE DCF?

A. The appropriate dividend yield to use in the DCF is the *expected* dividend yield calculated from the expected dividend and current stock price.

Q. DOES SOUTHERN UNION COMPANY PAY A CASH DIVIDEND?

A. No, it does not. Southern Union pays a 5.0% stock dividend on its common stock.

Q. HOW DID YOU DETERMINE A DIVIDEND YIELD TO USE FOR THE DCF COST OF COMMON EQUITY CALCULATION FOR MGE?

A. I calculated an average dividend yield for my group proxy companies and used this for MGE's dividend yield. The dividend yield I used for my DCF calculation for MGE is 5.04%. This dividend yield is obviously very close to Southern Union's stock-dividend yield.

Q. PLEASE EXPLAIN YOUR CALCULATION OF THE DIVIDEND YIELD.

A. The appropriate dividend yield to use in the DCF equation is equal to the *expected* dividend divided by *current* stock price. Schedule MB-7 shows average stock price over a recent six week period, expected dividends for 2001-02 (the average of the 2001 and 2002 dividends as taken from Value Line) and calculations of dividend yields.

I used a six-week period for determining the average stock price because I believe that period of time is long enough to avoid daily fluctuations and recent enough so that the stock price captured is representative of current expectations. The stock price for each company is the average of the Friday closing price from 3/8/01 through Thursday 4/12/01 (the market was closed on Friday 4/13/01). This time period accurately reflects investor's current expectations for the companies' stock. Non-current stock prices simply do not capture investor's current expectations and are inappropriate to use in the DCF.

Q. IS THE METHOD YOU USED TO CALCULATE THE DIVIDEND YIELD CONSISTENT WITH DCF PRINCIPLES?

A. Yes. The DCF equation calls for the dividend yield calculated from expected dividends and current market prices of stock, both of which I utilized in my calculation.

DCF COST OF EQUITY

Q. WHAT IS THE COST-OF-EQUITY RANGE FOR YOUR PROXY GROUP?

A. The following table, using data from Schedule MB-8, outlines the total cost of equity range for the comparable LDCs using the eight-company average high and low growth rates:

	Dividend Yield	Growth	Cost of Equity
Low	5.04%	1.81%	6.85%
High	5.04%	6.63%	11.67%

Using a dividend yield of 5.04% and my calculated growth rate range of 4.0% to 5.0% for the comparable companies, the DCF cost of equity range is 9.04% to 10.04% for the group.

Q. WHAT RETURN ON COMMON EQUITY DO YOU RECOMMEND FOR MGE?

A. MGE should be allowed a return on common equity of 9.9%. This return on common equity was determined using the Discounted Cash Flow (DCF) method applied to a group of eight comparable companies and is based on a dividend yield of 5.04% (Schedule MB-7) and a sustainable growth rate of approximately 4.85%.

CAPITAL ASSET PRICING MODEL

Q. PLEASE DESCRIBE THE CAPITAL ASSET PRICING MODEL YOU USED TO SUBSTANTIATE YOUR RECOMMENDED RETURN ON COMMON EQUITY.

A. The Capital Asset Pricing Model (CAPM) is described by the following equation:

$$K = Rf + \beta(Rm - Rf)$$

where,

K = the cost of common equity for the security being analyzed,

Rf = the risk free rate,

β = beta = the company or industry-specific beta risk measure,

Rm = market return, and

(Rm - Rf) = market premium.

The formula states that the cost of common equity is equal to the risk free rate of interest, plus, beta multiplied by the difference between the return on the market and the risk free rate (the market premium).

The formula says that the cost of common equity is equal to the risk free rate plus some proportion of the market premium - that proportion being equal to beta. The market overall has a beta of 1.0. Firms with beta less than 1.0 are assumed to be less risky than the market; firms with beta greater than 1.0 are assumed to be more risky than the market. The appropriate beta to use in the CAPM formula is the beta that represents the risk of the industry (or project) being analyzed. Therefore, I utilized the betas of my comparable companies when calculating a cost of equity capital for MGE. Beta for my group of comparable companies ranges from 0.45 to 0.70, with an average of 0.59. Gas utilities are generally viewed as relatively safe investments, and this is reflected in beta values below 1.0.

Q. DO YOU SUBSCRIBE TO THE CAPM AS AN ACCURATE MEASURE OF MARKET-BASED COST OF EQUITY?

A. I believe the CAPM - and its dependence on the single risk measure, beta - has limitations in its ability to accurately take into account the risk factors faced by a company, and therefore that company's cost of equity. However, some investors continue to rely on the CAPM. Therefore, I included the analysis as a check on and to provide support for my DCF analysis.

Q. HOW DID YOU ARRIVE AT THE VALUES OF THE RISK FREE RATE AND THE MARKET RETURN (OR MARKET PREMIUM) USED IN YOUR ANALYSIS?

A. I used 4.97% as the risk free rate, which is the rate on 10-year U.S. Government securities on 3/22/01, as reported by Value Line. I believe the 10-year Treasury is a better indication of the risk-free rate than the 30-year (the 30-year rate is 5.27%).

I used a market premium of 7.8% as calculated and reported by Ibbotson & Associates.

Q. WHAT DOES YOUR CAPM ANALYSIS SHOW?

A. As can be seen on Schedule MB-9, I performed a CAPM analysis on the group of ten comparable LDCs. The average CAPM cost of common equity for the group is 9.55%, with a high of 10.43% and a low of 8.48%.

Given the CAPM's reliance on the single risk-measure beta, I believe this analysis lends support to and shows the reasonableness of my recommended cost of common equity of 9.9% for MGE.

WEIGHTED AVERAGE COST OF CAPITAL

Q. WHAT OVERALL, OR WEIGHTED AVERAGE, COST OF CAPITAL IS INDICATED BY YOUR ANALYSIS?

A. The weighted average cost of capital I calculated for MGE is 8.75%. This is based on a 9.90% return on equity, 9.80% embedded cost of preferred stock, 8.124% embedded cost of long-term debt and 7.27% embedded cost of short term debt. The capital structure contains 32.47% common equity, 4.36% preferred stock, 60.61% long-term debt and 2.55% short term debt. The WACC calculation is shown on Schedule MB-10.

Q. WHAT PRE-TAX COVERAGE RATIO IS IMPLIED BY YOUR RECOMMENDATION?

A. Although I did perform a calculation for MGE's pre-tax interest coverage ratio, Southern Union faces only limited Indenture of Mortgage restrictions connected to the recent acquisition of PG Energy, Inc. According to Company response to OPC data request 2007, even this limited restriction on interest coverage is not currently applicable.

Based on a WACC of 8.75% and an assumed overall tax factor of 1.628855, the pre-tax coverage ratio is approximately 2.16 times. The derivation of pre-tax coverage is shown on Schedule MB-10.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, it does.

APPENDIX A

DEVELOPMENT & PURPOSES OF REGULATION

Q. WHY ARE PUBLIC UTILITIES REGULATED?

A. The nature of public utility services generally requires a monopolistic mode of operation. Only a limited number of companies (and quite often only one) are normally allowed to provide a particular utility service in a specific geographic area. Public utilities are often referred to as "natural" monopolies; a state created by such powerful economies of scale or scope that only one firm can or should provide a given service. Even when a utility is not a pure monopoly, it still has substantial market power over at least some of its customers.

In order to secure the benefits arising from monopolistic-type operations, utilities are generally awarded an exclusive franchise (or certificate of public convenience) by the appropriate governmental body. Since an exclusive franchise generally protects a firm from the effects of competition, it is critical that governmental control over the rates and services provided by public utilities is exercised. Consequently, a primary objective of utility regulation is to produce market results that closely approximate the conditions that would be obtained if utility rates were determined competitively. Based on this competitive standard, utility regulation must: 1) secure safe and adequate service; 2) establish rates sufficient to provide a utility with the opportunity to cover all reasonable costs, including a fair rate of return on the capital employed; and 3) restrict monopoly-type profits.

APPENDIX B

CALCULATION OF THE WEIGHTED AVERAGE COST OF CAPITAL

Q. PLEASE EXPLAIN HOW THE WEIGHTED AVERAGE COST OF CAPITAL IS USED IN TRADITIONAL RATEMAKING AND HOW IT IS DERIVED.

A. The basic standard of rate regulation is the revenue-requirement standard, often referred to as the rate base-rate of return standard. Simply stated, a regulated firm must be permitted to set rates which will cover operating costs and provide an opportunity to earn a reasonable rate of return on assets devoted to the business. A utility's total revenue requirement can be expressed as the following formula:

$$R = O + (V - D + A)r$$

where R = the total revenue required,

O = cost of operations,

V = the gross value of the property,

D = the accrued depreciation, and

A = other rate base items,

r = the allowed rate of return/weighted average cost of capital.

This formula indicates that the process of determining the total revenue requirement for a public utility involves three major steps. First, allowable operating costs must be ascertained. Second, the net depreciated value of the tangible and intangible property, or net investment in property, of the enterprise must be determined. This net value, or investment (V - D), along with other allowable items is referred to as the rate base. Finally, a "fair rate of return" or weighted average cost of capital (WACC) must be determined. This rate, expressed as a percentage, is multiplied by the rate base. The weighted average cost of capital (WACC) is applied to the rate base (V-D+A) since it is generally recognized

the rate base is financed with the capital structure and these two items are normally similar in size. The allowed rate of return, or WACC, is typically defined as follows:

$$r = i(D/C) + l(P/C) + k(E/C)$$

where i = embedded cost of debt capital,

D = amount of debt capital,

l = embedded cost of preferred stock,

P = amount of preferred stock,

k = cost of equity capital,

E = amount of equity capital, and

C = amount of total capital.

This formula indicates that the process of determining WACC involves separate determinations for each type of capital utilized by a utility. Under the weighted cost approach, a utility company's total invested capital is expressed as 100 percent and is divided into percentages that represent the capital secured by the issuance of long-term debt, preferred stock, common stock, and sometimes short-term debt. This division of total capital by reference to its major sources permits the analyst to compute separately the cost of both debt and equity capital. The cost rate of each component is weighted by the appropriate percentage that it bears to the overall capitalization. The sum of the weighted cost rates is equal to the overall or weighted average cost of capital and is used as the basis for the fair rate of return that is ultimately applied to rate base.

APPENDIX C

ECONOMIC PRINCIPLES OF REGULATION

Q. BRIEFLY DESCRIBE THE ECONOMIC RATIONALE FOR RATE BASE-RATE OF RETURN REGULATION.

A. Rate base-rate of return regulation is based, in part, on basic economic and financial theory that applies to both regulated and unregulated firms.

> Although it is well recognized that no form of economic regulation can ever be a perfect substitution for competition in determining market prices for goods and services, there is nearly unanimous acceptance of the principle that regulation should act as a substitute for competition in utility markets. (Parcell, The Cost of Capital Manual p.1-4).

It is the interaction of competitive markets forces that holds the prices an unregulated firm can charge for its products or services in line with the actual costs of production. In fact, competition between companies is generally viewed as the mechanism that allows consumers to not only purchase goods and services at prices consistent with the costs of production but also allows consumers to receive the highest quality product. Since regulated utilities are franchised monopolies generally immune to competitive market forces, a primary objective of utility regulation is to produce results that closely approximate the conditions that would exist if utility rates were determined in a competitive atmosphere.

Under basic financial theory, it is generally assumed the goal for all firms is the maximization of shareholder wealth. Additionally, capital budgeting theory indicates that, in order to achieve this goal, an unregulated firm should invest in any project which, given a certain level of risk, is expected to earn a rate of return at or above its weighted average cost of capital.

Competition, in conjunction with the wealth maximization goal, induces firms to increase investment as long as the expected rate of return on an investment is greater that the cost of capital. Competitive equilibrium is achieved when the rate of return on the last investment project undertaken just equals the cost of capital. When competitive equilibrium is achieved, the price ultimately received for goods or services reflects the full costs of production. Therefore, not only does competition automatically drive unregulated firms to minimize their capital costs (investment opportunities are expanded and competitive position is enhanced when capital costs can be lowered), it also ensures that the marginal return on investment just equals the cost of capital.

Given that regulation is intended to emulate competition and that, under competition, the marginal return on investment should equal the cost of capital, it is crucial for regulators to set the authorized rate of return equal to the **actual** cost. If this is accomplished, the marginal return on prudent and necessary investment just equals cost and the forces of competition are effectively emulated.

APPENDIX D

LEGAL REQUIREMENT FOR A FAIR RATE OF RETURN

Q. IS THERE A JUDICIAL REQUIREMENT RELATED TO THE DETERMINATION OF THE APPROPRIATE RATE OF RETURN FOR A REGULATED UTILITY?

A. Yes. The criteria established by the U.S. Supreme Court closely parallels economic thinking on the determination of an appropriate rate of return under the cost of service approach to regulation. The judicial background to the regulatory process is largely contained in two seminal decisions handed down in 1923 and 1944. These decisions are,

> Bluefield Water Works and Improvement Company v. Public Service Commission, 262 U.S. 679 (1923), and
>
> FPC v. Hope Natural Gas Co., 320 U.S. 591 (1944)

In the Bluefield Case, the Court states,

> A public utility is entitled to such rates as will permit it to earn a return on the value of the property which it employs for the convenience of the public equal to that generally being made at the same time and in the same general part of the country on investments in other business undertakings which are attended by corresponding risks and uncertainties; but has no constitutional right to profits such as are realized or anticipated in highly profitable enterprises or speculative ventures. The return should be reasonably sufficient to assure confidence in the financial soundness of the utility, and should be adequate, under efficient and economical management, to maintain and support its credit and enable it to raise the money necessary for the proper discharge of its public duties. A rate of return may be reasonable at one time, and become too high or too low by changes affecting opportunities for investment, the money market, and business conditions generally.

Together, Hope and Bluefield have established the following standards,

1). A utility is entitled to a return similar to that available to other enterprises with similar risks;

2). A utility is entitled to a return level reasonably sufficient to assure financial soundness and support existing credit, as well as raise new capital; and

3). A fair return can change along with economic conditions and capital markets.

Furthermore, in Hope, the Court makes clear that regulation does not guarantee utility profits and, in Permian Basin Area Rate Cases, 390 US 747 (1968), that, while investor interests (profitability) are certainly pertinent to setting adequate utility rates, those interests do not exhaust the relevant considerations.

APPENDIX E

REGULATION IN MISSOURI

Q. WHAT IS THE ORIGIN AND RATIONALE FOR THE REGULATION OF PUBLIC UTILITIES IN THE STATE OF MISSOURI?

A. All investor owned public utilities operating in the state of Missouri are subject to the Public Service Commission Act, as amended. The Public Service Commission Act was initially passed by the Forty-Seventh General Assembly on April 15, 1913. (Laws of 1913 pp.557-651, inclusive).

In State ex rel Kansas City v. Kansas City Gas Co. 163 S.W. 854 (Mo.1914), the case of first impression pertaining to the Public Service Commission Act, the Missouri Supreme Court described the rationale for the regulation of public utilities in Missouri as follows:

> That act (Public Service Commission Act) is an elaborate law bottomed on the police power. It evidences a public policy hammered out on the anvil of public discussion. It apparently recognizes certain generally accepted economic principles and conditions, to wit: That a public utility (like gas, water, car service, etc.) is in its nature a monopoly; that competition is inadequate to protect the public, and, if it exists, is likely to become an economic waste; that regulation takes the place of and stands for competition; that such regulation to command respect from patron or utility owner, must be in the name of the overlord, the state, and, to be effective, must possess the power of intelligent visitation and the plenary supervision of every business feature to be finally (however invisible) reflected in rates and quality of service. (Kansas City Gas Co. at 857-58).

The General Assembly has determined that the provisions of the Public Service Commission Act "shall be liberally construed with a view to the public welfare, efficient facilities and substantial justice between patrons and public utilities" (See: 386.610 RSMo 1978). Pursuant to the above legislative directive, when developing the cost of equity capital for a public utility operating in Missouri, it is appropriate to do so with a view

toward the public welfare; giving the utility an amount that will allow for efficient use of its facilities and the proper balance of interests between the ratepayers and the utility.

APPENDIX F

MARKET-TO-BOOK RATIO ILLUSTRATION

Q. COULD YOU PROVIDE AN EXAMPLE ILLUSTRATING THE IMPORTANCE OF MARKET-TO-BOOK RATIOS AND THEIR RELATIONSHIP TO THE COST OF EQUITY CAPITAL?

A. Yes. Assume that a utility's equity has a book value of $10 per share and that, for simplicity, this utility pays out all its earnings in dividends. If regulators allow the utility a 12% return, investors will expect the company to earn (and pay out) $1.20 per share. If investors require a 12% return on this investment, they will be willing to provide a market price of $10 per share for this stock ($1.20 dividends/$10 market price = 12%). In that case, the allowed/expected return is equal to the cost of capital and the market price is equal to the book value.

Now, assume the investors' required return is 10%. Investors would be drawn to a utility stock in a risk class for which they require a 10% return but was expected to pay out a 12% return. The increased demand by investors would result in an increase in the market price of the stock until the total share yield equaled the investors' required return. In our example, that point would be $12 per share ($1.20 dividends/$12 market price = 10%). As such, the allowed/expected return (12%) is greater than the required return (10%) and the per share market price ($12/share) exceeds book value ($10/share), producing a market-to-book ratio greater than one ($12/$10 = 1.20). Consequently, when the market-to-book ratio for a given utility is greater than one, the earned or projected return on book equity is greater than the cost of capital.

APPENDIX G

DEVELOPMENT OF A PROXY GROUP

Q. PLEASE EXPLAIN HOW YOU DEVELOPED A GROUP OF GAS UTILITIES WITH RISK CHARACTERISTICS SIMILAR TO MGE.

A. The following selection criteria have been used to develop a group of comparable gas utilities:

1). Publicly traded company;

2). No Missouri-regulated operations;

3). Greater than 80% of total revenues from regulated sales of gas;

4). Total revenues less than $2.0 billion;

5). Standard & Poor's Bond Rating at least BBB+;

6). Covered by Value Line;

The following companies met the selection criteria: 1)AGL Resources Inc.; 2) Cascade Natural Gas Company; 3) NICOR Inc.; 4) Northwest Natural Gas Co.; 5) People's Energy Corporation; 6) Piedmont Natural Gas Co., Inc.; 7) South Jersey Industries, Inc.; and 8) WGL Holdings, Inc.

Q. HAVE YOU MADE ANY RISK EVALUATIONS FOR THE INDUSTRY GROUP?

A. Yes. As shown on Schedule MB-5, I have examined several measures that typically act as indicators of relative risk.

The beta coefficient;

Fixed charge coverage;

Value Line Safety rating;

Bond Rating from Standard & Poor's;

Average common equity ratio;

Value Line Financial Strength.

Also, many of the selection criteria also act as risk measures, such as the level of revenues from regulated gas operations.

Q. WHAT CONCLUSIONS CAN BE DRAWN FROM THIS ANALYSIS?

A. Generally, the level of overall, or total, risk for the industry companies is representative of the risks faced by MGE as a regulated natural gas distributor.

APPENDIX H

EFFICIENT NATURE OF THE CAPITAL MARKETS

Q. IS THE DISCOUNTED CASH FLOW MODEL INHERENTLY CAPABLE OF ADJUSTING FOR THE LEVEL OF REAL OR PERCEIVED RISKINESS TO A GIVEN SECURITY?

A. Yes. It is impossible for any one analyst to systematically interpret the impact that each and every risk variable facing an individual firm has on the cost of equity capital to that firm. Fortunately, this type of risk-by-risk analysis is not necessary when determining the appropriate variables to be plugged into the DCF formula.

As stated earlier, the DCF model can correctly identify the cost of equity capital to a firm by adding the current dividend yield (D/P) to the correct determination of investor-expected growth (g). Thus, the difficult task of determining the cost of equity capital is made easier, in part, by the relative ease of locating dividend and stock price information and the efficient nature of the capital markets.

Q. PLEASE EXPLAIN THAT STATEMENT.

A. The DCF model is based on the assumption that investors (1) calculate intrinsic values for stocks on the basis of their interpretation of available information concerning future cash flows and risk, (2) compare the calculated intrinsic value for each stock with its current market price, and (3) make buy or sell decisions based on whether a stock's intrinsic value is greater or less than its market price.

Only if its market price is equal to or lower than its intrinsic value as calculated by the marginal investor will a stock be demanded by that investor. If a stock sells at a price significantly above or below its calculated intrinsic value, buy or sell orders will quickly push the stock towards market equilibrium. The DCF model takes on the following form when used by investors to calculate the intrinsic value of a given security,

$$P^{\wedge} = D/k-g$$

where $P^{\wedge}$= the intrinsic value of the security,

D = the current dividend,

g = the expected growth rate, and

k = the required return on the security

Since the required rate of return for any given investor is based on both the perceived riskiness of the security and return opportunities available in other segments of the market, it can be easily demonstrated that when perceived riskiness is increased, the investors' required return is also increased and the market value of the investment falls as it is valued less by the marginal investor. Returning to the form of the DCF model used to determine the cost of equity capital to the firm,

$$k = D/P + g$$

we see that the required return rises as an increase in the perceived risk associated with a given security drives the price down. Within this context, the DCF formula incorporates all known information, including information regarding risks, into the cost of equity capital calculation. This is known as the "efficient market" hypothesis.

Q. IS THE "EFFICIENT MARKET" HYPOTHESIS SUPPORTED IN THE FINANCIAL LITERATURE?

A. Yes. Modern investment theory maintains that the U.S. capital markets are efficient and, at any point in time, the prices of publicly traded stocks and bonds reflect all available information about those securities. Additionally, as new information is discovered, security prices adjust virtually instantaneously. This implies that, at any given time, security prices reflect "real" or intrinsic values. This point is further clarified by Brealey and Myers in Principles of Corporate Finance, Fourth Edition:

When economists say that the security market is efficient, they are not talking about whether the filing is up-to-date or whether the 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. (pg. 290)

Suppose, e.g., that you wish to sell an antique painting at an auction but you have no idea of its value. Can you be sure of receiving a fair price? The answer is that you can if the auction is sufficiently competitive. In other words, you need to satisfy yourself that it is to be properly conducted (that includes no collusion among bidders), that there is no substantial cost involved in submitting a bid, and that the auction is attended by a reasonable number of skilled potential bidders, each of whom has access to the available information. In this case, no matter how ignorant *you* may be, competition among experts will ensure that the price you realize fully reflects the value of the painting.

In just the same way, competition among investment analysts will lead to a stock market in which prices at all times reflect true value. But what do we mean by *true value*? It is a potentially slippery phrase. True value does not mean ultimate *future* value -- we do not expect investors to be fortune-tellers. It means an equilibrium price which incorporates *all* the information available to investors at that time. That was our definition of an efficient market. (pg. 293-294)

APPENDIX I

DETERMINATION OF RETENTION (BR + SV) GROWTH & SUSTAINABLE GROWTH VS. EARNINGS AND DIVIDEND GROWTH RATES

Q. PREVIOUSLY YOU STATED THAT IT IS CRITICAL TO UNDERSTAND THE SOURCES OF GROWTH WHEN DEVELOPING A SUSTAINABLE GROWTH RATE RECOMMENDATION. PLEASE PROVIDE AN EXAMPLE THAT ILLUSTRATES HOW SUSTAINABLE GROWTH IS MEASURED.

A. To understand how investors develop a growth rate expectation, it is helpful to look at an illustration that shows how expected growth is measured. To do this, assume that a hypothetical utility has a first period common equity, or book value per share of $20.00; the investor-expected return on that equity is 12 percent; and the stated company policy is to pay out 50 percent of earnings in dividends. The first period earnings per share are expected to be $2.40 ($20 per share book equity x 12% equity) and the expected dividend is $1.20. The amount of earnings not paid out to shareholders ($1.20), referred to as retained earnings, raises the book value of the equity to $21.20 in the second period. The following table continues the hypothetical for a three-year period and illustrates the underlying determinants of growth.

	Year 1	Year 2	Year 3	Gr.
Book Value	$20.00	$21.20	$22.47	6.00%
Equity Return	12%	12%	12%	
Earnings/Sh.	$2.40	$2.54	$2.67	6.00%
Payout Ratio	50%	50%	50%	
Dividend/Sh.	$1.20	$1.27	$1.34	6.00%

As can be seen, earnings, dividends, and book value all grow at the same rate when the payout ratio and return on equity remain stable. Moreover, key to this growth is the amount of earnings retained or reinvested in the firm and the return on equity.

Letting "b" equal the retention ratio of the firm (or 1 minus the payout ratio) and letting "r" equal the firm's expected return on equity, the DCF growth rate "g" (also referred to as the sustainable growth rate) is equal to their product, or

$$g = br.$$

As shown in the example, the growth rate for the hypothetical company is 6.00 percent (12% ROE x 50% payout ratio).

Dr. Gordon has determined that this equation embodies the underlying fundamentals of growth and, therefore, is a primary measure of growth to be used in the DCF model (Gordon, The Cost of Capital to a Public Utility, 1974, p.81). It should be noted, however, Dr. Gordon's research also indicates that analysts' growth rate projections are useful in estimating investors' expectations. As a result, analysts' published growth rate projections, along with other historic and projected growth rates, are considered in this analysis for the purpose of reaching an accurate estimation of the expected sustainable growth rate.

Q. CAN THE RETENTION GROWTH RATE MODEL BE FURTHER REFINED IN ORDER TO BEST REPRESENT INVESTORS' EXPECTATIONS?

A. Yes. The above hypothetical example does not allow for the existence of external sources of equity financing (i.e., sales of common stock). Stock financing will cause investors to expect additional growth if the company is expected to issue additional shares at a market price which exceeds book value.

The excess of market value over book value per share would benefit current shareholders by increasing their per share equity value. Therefore, if the company is expected to continue to issue stock at a price that exceeds book value per share, the shareholders would continue to expect their book value to increase and would add that growth expectation to that stemming from the retention of earnings, or internal growth.

On the other hand, if a company is expected to issue new common equity at a price below book value, that would have a negative effect on shareholders' current growth rate expectations. Finally, with little or no expected equity financing or a market-to-book ratio at or near one, investors would expect the long-term sustainable growth rate for the company to equal the growth from earnings retention.

Dr. Gordon identifies the growth rate which includes both expected internal and external financing as,

$$g = br + sv$$

where, g = DCF expected growth rate,

r = return on equity,

b = retention ratio,

v = fraction of new common stock sold that accrues to the current shareholder,

s = funds raised from the sale of stock as a fraction of existing equity.

Additionally,

$$v = 1 - BV/MP$$

where,

MP = market price,
BV = book value.

The second term (sv), which represents the external portion of the expected growth rate, does not normally represent a major source of growth when compared to the expected growth attributed to the retention of earnings. For example, the FERC Generic Rate of Return Model estimates the (sv) component in the range of 0.1% to 0.2%. However, I have used this equation as the basis for determining sustainable growth for the comparable group.

Q. IS HISTORIC OR PROJECTED GROWTH IN EARNINGS OR DIVIDENDS APPROPRIATE FOR DETERMINING THE DCF GROWTH RATE?

A. No, not always. As I have stated, growth derived from earnings or dividends alone can be unreliable for ratemaking purposes due to external influences on these parameters such as changes in the historic or expected rate of return on common equity or changes in the payout ratio. An extended example will demonstrate this point.

If we take the example above and assume that, in year two, the expected return on equity rises from 12 percent to 15 percent, the resulting growth rate in earnings and dividends per share dramatically exceeds what the company could sustain indefinitely. The error that can result from exclusive reliance on earnings or dividends growth is illustrated in the following table:

	Year 1	Year 2	Year 3	Gr.
Book Value	$20.00	$21.20	$22.79	6.75%
Equity Return	12%	15%	15%	
Earnings/Sh.	$2.40	$3.18	$3.42	19.37%
Payout Ratio	50%	50%	50%	
Dividends/Sh.	$1.20	$1.59	$1.71	19.37%

Due to the change in return on equity in year two, the compound growth rate for dividends and earnings is greater than 19 percent, which is the result only of a short-term increase in the equity return rather than the intrinsic ability of the firm to grow continuously at a 19 percent annual rate.

For year one, the sustainable rate of growth (g=br) is 6.00 percent, just as it was in the previous example. On the other hand, in years two and three, the sustainable growth rate increases to 7.50 percent. (15% ROE x 50% retention rate = 7.50%). Consequently, if the utility is expected to continually earn a 15 percent return on equity and retain 50 percent of earnings for reinvestment, a growth rate of 7.50 percent would be a reasonable estimate

of the long-term sustainable growth rate. However, the compound growth rate in earnings and dividends, which is over 19 percent, dramatically exceeds the actual investor-expected growth rate.

As can be seen in the hypothetical, the 19 percent growth rate is simply the result of the change in return on equity from year one to year two, not the firm's ability to grow sustainably at that rate. Consequently, this type of growth rate cannot be relied upon to accurately measure investors' sustainable growth rate expectations. In this instance, to rely on either earnings or dividend growth would be to assume the return on equity could continue to increase indefinitely. This, of course, is a faulty assumption; the recognition of which emphasizes the need to analyze the fundamentals of actual growth.

Q. IS HISTORIC GROWTH IN DIVIDENDS AN ACCURATE INDICATOR OF INVESTORS' GROWTH EXPECTATIONS WHEN THE HISTORICAL PAYOUT RATIO HAS BEEN ERRATIC OR TRENDED DOWNWARD OVER TIME?

A. As stated, no. It can also be demonstrated that a change in our hypothetical utility's payout ratio makes the past rate of growth in dividends an unreliable basis for predicting investor-expected growth. If we assume the hypothetical utility consistently earns its expected equity return but in the second year changes its payout ratio from 50 percent to 75 percent, the resulting growth rate in dividends far exceeds a reasonable level of sustainable growth.

	Year 1	Year 2	Year 3	Gr.
Book Value	$20.00	$21.20	$21.84	4.50%
Equity Return	12%	12%	12%	
Earnings/Sh.	$2.40	$2.54	$2.62	4.50%
Payout Ratio	50%	75%	75%	
Dividends/Sh.	$1.20	$1.91	$1.97	28.13%

Although the company has registered a high dividend growth rate (28.13%), it is not representative of the growth that could be sustained, as called for in the DCF model. In actuality, the sustainable growth rate (br) has declined due to the increased payout ratio. To

utilize a 28 percent growth rate in a DCF analysis for this hypothetical utility would be to assume that the payout ratio could continue to increase indefinitely and lead to the unlikely result that the firm could consistently pay out more in dividends than it earns. The problems associated with sole reliance on historic dividend growth has been recognized in the financial literature. According to Brigham and Gapenski,

> If earnings and dividends are growing at the same rate, there is no problem, but if these two growth rates are unequal, we do have a problem. First, the DCF model calls for the expected dividend growth rate. However, if EPS and DPS are growing at different rates, something is going to have to change: these two series cannot grow at two different rates indefinitely (Intermediate Financial Management, p.145).

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Missouri Gas Energy
Capital Structure - 31 December 2000

	Amount	Percent
Common Stock Equity	$ 720,664,676	32.47%
Preferred Stock	$ 96,769,550	4.36%
Long Term Debt	$1,345,097,661	60.61%
Short Term Debt	$ 56,643,333	2.55%
	$2,219,175,220	100.00%

Sources: Company response to OPC DR2001 and Staff DR3801.

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Percent Common Equity - Proxy Group
Value Line Investment Survey Composite Index

Common Equity	2000	1999	1998	1997	1996	Average
AGL Resources Inc.	47.5%	49.2%	47.1%	45.9%	48.9%	47.7%
Cascade Natural Gas Corp.	50.0%	46.6%	48.7%	46.5%	50.0%	48.4%
NICOR, Inc.	70.0%	64.0%	57.4%	57.2%	58.1%	61.3%
Northwest Natural Gas	52.5%	49.9%	50.6%	49.0%	52.8%	51.0%
People's Energy Corp.	64.9%	60.0%	58.9%	57.6%	56.4%	59.6%
Piedmont Natural Gas Co.	57.0%	53.8%	55.3%	52.4%	49.7%	53.6%
South Jersey Industries, Inc.	45.0%	45.6%	42.2%	44.8%	53.2%	46.2%
WGL Holdings, Inc.	56.5%	56.1%	57.1%	56.2%	59.4%	57.1%
Average	**55.4%**	**53.2%**	**52.2%**	**51.2%**	**53.6%**	**53.1%**

	2000	1999	1998	1997	1996	Average
Value Line Composite Index	47.5%	47.7%	47.8%	47.7%	47.0%	**47.5%**
Natural Gas Distribution Industry						

Source: Value Line Investment Survey.

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Missouri Gas Energy
Preferred Stock as of 31 December 2000

		Amount	Annual Dividend
Preferred Stock	$	100,000,000	$ 9,480,000
less Issuance costs	$	3,230,450	
Net Proceeds	**$**	**96,769,550**	

Embedded Cost of Preferred Stock **9.80%**

Source: OPC data request 2003

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GR-2001-292 Missouri Gas Energy

Missouri Gas Energy
Short Term Debt as of 31 December 2000

	EOM Balance	Monthly Interest	Monthly Wtd. Cost	Overall Wtd. Cost
1/31/00	$ -	$ -		0.00%
2/29/00	$ -	$ -		0.00%
3/31/00	$ -	$ -		0.00%
4/30/00	$ -	$ -		0.00%
5/31/00	$ -	$ -		0.00%
6/30/00	$ -	$ -		0.00%
7/31/01	$ 5,200,000	$ 4,151	7.083%	0.05%
8/31/00	$ 58,320,000	$ 162,849	6.981%	0.60%
9/30/00	$ 135,450,000	$ 440,430	7.387%	1.47%
10/31/01	$ 132,900,000	$ 931,795	7.227%	1.41%
11/30/00	$ 172,850,000	$ 792,973	7.362%	1.87%
12/31/00	$ 175,000,000	$ 985,862	7.227%	1.86%
	$ 679,720,000			
Average Balance	**$ 56,643,333**		**Weighted Cost**	**7.27%**

Source: Company response to OPC data request 2002a

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GR-2001-292 Missouri Gas Energy

Proxy Companies

C.A. Turner Utility Reports - March 2001: Statistical Information
Natural Gas Distribution and Integrated Natural Gas Companies

	Public	Revenue	% Rev Gas	S&P	Payout Ratio	Dividend Yield	MTB	Common Equity	Missouri Reg.?
AGL Resources Inc.	yes	$ 719.9	94.0%	A-	77.0%	5.0%	1.88	43.0%	No
Cascade Natural Gas Corp.	yes	$ 273.1	100.0%	BBB+	66.0%	5.1%	1.75	48.0%	No
NICOR, Inc.	yes	$ 2,298.1	84.0%	AA	57.0%	4.4%	2.50	45.0%	No
Northwest Natural Gas	yes	$ 471.9	93.0%	A	65.0%	5.0%	1.43	46.0%	No
People's Energy Corp.	yes	$ 1,722.6	79.0%	AA-	76.0%	5.1%	1.79	44.0%	No
Piedmont Natural Gas Co.	yes	$ 792.3	87.0%	A	70.0%	4.7%	1.92	50.0%	No
South Jersey Industries, Inc.	yes	$ 515.7	82.0%	A	67.0%	4.9%	1.76	36.0%	No
WGL Holdings, Inc.	yes	$ 1,031.1	100.0%	AA-	46.0%	4.5%	1.81	49.0%	No
Average		**$ 978.09**	**89.9%**		**65.5%**	**4.8%**	**1.86**	**45.1%**	

Value Line Investment Survey

	Beta	Fixed Charge Coverage	Timeliness	Financial Strength	Safety
AGL Resources Inc.	0.60	3.00	3	B++	2
Cascade Natural Gas Corp.	0.55	2.90	3	B	3
NICOR, Inc.	0.60	5.10	3	A+	1
Northwest Natural Gas	0.60	2.30	3	B++	2
People's Energy Corp.	0.70	3.95	3	A	1
Piedmont Natural Gas Co.	0.60	3.85	3	B++	2
South Jersey Industries, Inc.	0.45	2.70	4	B++	2
WGL Holdings, Inc.	0.60	4.00	4	A	1
Average	**0.59**	**3.48**	**3.25**		**1.75**

Source: C.A. Turner Utility Reports, Value Line Investment Survey

BURDETTE - DIRECT
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Summary - Discounted Cash Flow Growth for Comparable Companies

Historic Growth	Retention	Compound Growth			Value Line		
Company	br + sv	EPS	DPS	BVPS	EPS	DPS	BVPS
AGL Resources Inc.	2.18%	4.78%	0.79%	2.83%	2.00%	1.50%	2.75%
Cascade Natural Gas Corp.	4.95%		2.49%	1.29%	3.25%	0.75%	2.00%
NICOR, Inc.	5.60%	4.81%	4.87%	5.30%	4.25%	4.25%	4.50%
Northwest Natural Gas	4.61%	1.37%	0.97%	4.33%	1.50%	1.25%	4.50%
People's Energy Corp.	3.57%	1.38%	1.97%	3.56%	3.00%	2.00%	3.25%
Piedmont Natural Gas Co.	4.72%	6.35%	5.86%	6.36%	5.50%	*6.00%*	6.25%
South Jersey Industries, Inc.	3.23%	3.97%	0.12%	2.42%	2.50%	1.00%	2.25%
WGL Holdings, Inc.	4.43%	2.96%	2.08%	4.87%	3.50%	2.25%	4.25%
Comparables Average	**4.16%**	**3.66%**	**2.39%**	**3.87%**	**3.19%**	**2.00%**	**3.72%**

Projected Growth	Retention	Value Line / First Call			
Company	br + sv	EPS	DPS	BVPS	
AGL Resources Inc.	4.26%	5.50%	1.00%	3.00%	
Cascade Natural Gas Corp.	7.56%	6.50%	0.50%	2.00%	
NICOR, Inc.	7.20%	6.40%	5.00%	8.00%	
Northwest Natural Gas	4.78%	6.25%	1.00%	4.50%	
People's Energy Corp.	4.13%	6.25%	2.00%	6.50%	
Piedmont Natural Gas Co.	5.78%	6.00%	4.50%	6.50%	
South Jersey Industries, Inc.	5.98%	6.25%	1.00%	5.50%	
WGL Holdings, Inc.	6.34%	6.50%	2.00%	5.50%	**Average Projected Growth**
Average	**5.75%**	**6.21%**	**2.13%**	**5.19%**	**4.82%**

Ranges	Overall			Hi/Low	
COMPANY	Average	Low*	High	Average	Median
AGL Resources Inc.	2.78%	0.79%	5.50%	3.14%	2.75%
Cascade Natural Gas Corp.	3.13%	0.50%	7.56%	4.03%	2.24%
NICOR, Inc.	5.47%	4.25%	8.00%	6.13%	5.00%
Northwest Natural Gas	3.19%	0.97%	6.25%	3.61%	4.33%
People's Energy Corp.	3.42%	1.38%	6.50%	3.94%	3.25%
Piedmont Natural Gas Co.	5.80%	4.50%	6.50%	5.50%	6.00%
South Jersey Industries, Inc.	3.11%	0.12%	6.25%	3.18%	2.50%
WGL Holdings, Inc.	4.06%	2.00%	6.50%	4.25%	4.25%
Average	**3.87%**	**1.81%**	**6.63%**	**4.22%**	**3.79%**

Note: Negative growth rates are not included in averages and are excluded from determination of "Low".

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Discounted Cash Flow Growth Parameters
AGL Resources

Historic Growth

		Compound Growth				Retention Growth	
	Historic Data	EPS	DPS	BVPS	Retention Ratio (b)	Equity Return (r)	Growth (b*r)
1	1994	1.17	1.04	10.19	0.111		
2	1995	1.33	1.04	10.12	0.218		
3	1996	1.37	1.06	10.56	0.226	12.10%	2.74%
4	1997	1.37	1.08	10.99	0.212	11.30%	2.39%
5	1998	1.41	1.08	11.42	0.234	12.30%	2.88%
6	1999	0.91	1.08	11.59	-0.187	7.90%	*-1.48%*
7	2000	1.24	1.08	11.50	0.129	11.00%	1.42%
8							
9		Compound Growth Rates				Ave. Internal	
10	'94-98	4.78%	0.95%	2.89%		Growth (br):	2.36%
11							
12	'95-99	*-9.05%*	0.95%	3.45%		ADD: External	
13						Growth (sv):	-0.17%
14	'96-00	*-2.46%*	0.47%	2.15%			
15						Historic	
16	Ave.Compound Gr.	**4.78%**	**0.79%**	**2.83%**		"br + sv" Gr.	**2.18%**
17							
18	Value Line	EPS	DPS	BVPS			
19	Historic Gr.	**2.00%**	**1.50%**	**2.75%**			
20	(Avg of 5 and 10 yr. if both are available)						
21							
22	**Projected Growth**						
23	*Retention Growth Calculation*				Retention	Equity	Growth
24	Value Line	EPS	DPS	BVPS	Ratio (b)	Return (r)	(b*r)
25	2001 est'd	$1.35	$1.08	$11.80	0.200	11.50%	2.30%
26							
27	2003-05 est'd	1.70	1.15	13.50	0.324	12.50%	4.04%
28							
29	*Analyst's Estimates*					Projected	
30	Value Line	5.50%	1.00%	3.00%		Growth (br):	4.04%
31							
32	First Call	n/a				ADD: External	
33						Growth (sv):	0.22%
34							
35	Average					Projected	
36	Proj'd Growth	**5.50%**	**1.00%**	**3.00%**		"br + sv" Gr.	**4.26%**

Note: Negative (b*r) growth is not included in retention growth averages.
Source: The Value Line Investment Survey, C.A. Turner Utility Reports
First Call Corporation

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Discounted Cash Flow Growth Parameters
Cascade Natural Gas Corporation

Historic Growth

		Compound Growth				Retention Growth	
	Historic Data	EPS	DPS	BVPS	Retention Ratio (b)	Equity Return (r)	Growth (b*r)
1	1994	0.60	0.96	9.81	-0.600		
2	1995	0.80	0.96	9.76	-0.200		
3	1996	0.39	0.72	10.09	-0.846	3.50%	*-2.96%*
4	1997	0.93	0.96	10.16	-0.032	9.10%	*-0.29%*
5	1998	0.84	0.96	10.07	-0.143	8.30%	*-1.19%*
6	1999	1.24	0.96	10.36	0.226	12.00%	2.71%
7	2000	1.39	0.96	10.80	0.309	12.50%	3.87%
8							
9		Compound Growth Rates				Ave. Internal	
10	'94-98	*8.78%*	0.00%	0.66%		Growth (br):	3.29%
11							
12	'95-99	*11.58%*	0.00%	1.50%		ADD: External	
13						Growth (sv):	1.66%
14	'96-00	*37.40%*	7.46%	1.71%			
15						Historic	
16	Ave.Compound Gr.		**2.49%**	**1.29%**		"br + sv" Gr.	**4.95%**
17							
18	Value Line	EPS	DPS	BVPS			
19	Historic Gr.	**3.25%**	**0.75%**	**2.00%**			
20	(Avg of 5 and 10 yr. if both are available)						
21							
22	**Projected Growth**						
23	*Retention Growth Calculation*				Retention	Equity	Growth
24	Value Line	EPS	DPS	BVPS	Ratio (b)	Return (r)	(b*r)
25	2001 est'd	$1.50	$0.96	$10.80	0.360	14.00%	5.04%
26							
27	2003-05 est'd	1.80	1.00	11.60	0.444	15.00%	6.67%
28							
29	*Analyst's Estimates*					Projected	
30	Value Line	6.50%	0.50%	2.00%		Growth (br):	6.67%
31							
32	First Call	n/a				ADD: External	
33						Growth (sv):	0.89%
34							
35	Average					Projected	
36	Proj'd Growth	**6.50%**	**0.50%**	**2.00%**		"br + sv" Gr.	**7.56%**

Note: Negative (b*r) growth is not included in retention growth averages.
Source: The Value Line Investment Survey, C.A. Turner Utility Reports
First Call Corporation

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Discounted Cash Flow Growth Parameters
NICOR, Inc.

Historic Growth

		Compound Growth				Retention Growth	
	Historic Data	EPS	DPS	BVPS	Retention Ratio (b)	Equity Return (r)	Growth (b*r)
1	1994	2.07	1.25	13.26	0.396		
2	1995	1.96	1.28	13.67	0.347		
3	1996	2.42	1.32	14.74	0.455	16.60%	7.55%
4	1997	2.55	1.40	15.43	0.451	16.70%	7.53%
5	1998	2.31	1.48	15.97	0.359	14.60%	5.25%
6	1999	2.57	1.54	16.80	0.401	15.40%	6.17%
7	2000	2.90	1.64	18.50	0.434	16.00%	6.95%
8							
9		Compound Growth Rates				Ave. Internal	
10	'94-98	2.78%	4.31%	4.76%		Growth (br):	6.69%
11							
12	'95-99	7.01%	4.73%	5.29%		ADD: External	
13						Growth (sv):	-1.09%
14	'96-00	4.63%	5.58%	5.84%			
15						Historic	
16	Ave.Compound Gr.	**4.81%**	**4.87%**	**5.30%**		"br + sv" Gr.	**5.60%**
17							
18	Value Line	EPS	DPS	BVPS			
19	Historic Gr.	**4.25%**	**4.25%**	**4.50%**			
20	(Avg of 5 and 10 yr. if both are available)						
21							
22	**Projected Growth**						
23	*Retention Growth Calculation*				Retention	Equity	Growth
24	Value Line	EPS	DPS	BVPS	Ratio (b)	Return (r)	(b*r)
25	2001 est'd	$3.10	$1.72	$20.05	0.445	16.00%	7.12%
26							
27	2003-05 est'd	3.85	1.96	25.40	0.491	15.00%	7.36%
28							
29	*Analyst's Estimates*					Projected	
30	Value Line	7.50%	5.00%	8.00%		Growth (br):	7.36%
31							
32	First Call	5.30%				ADD: External	
33						Growth (sv):	-0.17%
34							
35	Average					Projected	
36	Proj'd Growth	**6.40%**	**5.00%**	**8.00%**		"br + sv" Gr.	**7.20%**

Note: Negative (b*r) growth is not included in retention growth averages.
Source: The Value Line Investment Survey, C.A. Turner Utility Reports
First Call Corporation

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Discounted Cash Flow Growth Parameters
Northwest Natural Gas Company

Historic Growth

		Compound Growth				Retention Growth	
	Historic Data	EPS	DPS	BVPS	Retention Ratio (b)	Equity Return (r)	Growth (b*r)
1	1994	1.63	1.17	13.63	0.282		
2	1995	1.61	1.18	14.55	0.267		
3	1996	1.97	1.20	15.37	0.391	12.70%	4.96%
4	1997	1.76	1.21	16.02	0.313	11.00%	3.44%
5	1998	1.02	1.22	16.59	-0.196	6.00%	-1.18%
6	1999	1.70	1.23	17.12	0.276	9.90%	2.74%
7	2000	1.75	1.24	17.85	0.291	10.00%	2.91%
8							
9		Compound Growth Rates				Ave. Internal	
10	'94-98	*-11.06%*	1.05%	5.04%		Growth (br):	3.51%
11							
12	'95-99	1.37%	1.04%	4.15%		ADD: External	
13						Growth (sv):	1.09%
14	'96-00	*-2.92%*	0.82%	3.81%			
15						Historic	
16	Ave.Compound Gr.	**1.37%**	**0.97%**	**4.33%**		"br + sv" Gr.	**4.61%**
17							
18	Value Line	EPS	DPS	BVPS			
19	Historic Gr.	**1.50%**	**1.25%**	**4.50%**			
20	(Avg of 5 and 10 yr. if both are available)						
21							
22	**Projected Growth**						
23	*Retention Growth Calculation*				Retention	Equity	Growth
24	Value Line	EPS	DPS	BVPS	Ratio (b)	Return (r)	(b*r)
25	2001 est'd	$1.90	$1.25	$18.40	0.342	10.50%	3.59%
26							
27	2003-05 est'd	2.30	1.30	21.40	0.435	11.00%	4.78%
28							
29	*Analyst's Estimates*					Projected	
30	Value Line	7.50%	1.00%	4.50%		Growth (br):	4.78%
31							
32	First Call	5.00%				ADD: External	
33						Growth (sv):	0.00%
34							
35	Average					Projected	
36	Proj'd Growth	**6.25%**	**1.00%**	**4.50%**		"br + sv" Gr.	**4.78%**

Note: Negative (b*r) growth is not included in retention growth averages.

Source: The Value Line Investment Survey, C.A. Turner Utility Reports
First Call Corporation

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Discounted Cash Flow Growth Parameters
People's Energy Corporation

Historic Growth

		Compound Growth			Retention Growth		
	Historic Data	EPS	DPS	BVPS	Retention Ratio (b)	Equity Return (r)	Growth (b*r)
1	1994	2.13	1.80	18.39	0.155		
2	1995	1.78	1.80	18.38	-0.011		
3	1996	2.96	1.82	19.49	0.385	15.20%	5.85%
4	1997	2.81	1.87	20.43	0.335	13.70%	4.58%
5	1998	2.25	1.91	21.03	0.151	10.70%	1.62%
6	1999	2.39	1.95	21.66	0.184	11.00%	2.03%
7	2000	2.71	2.00	22.00	0.262	12.40%	3.25%
8							
9		Compound Growth Rates				Ave. Internal	
10	'94-98	1.38%	1.49%	3.41%		Growth (br):	3.47%
11							
12	'95-99	*7.65%*	2.02%	4.19%		ADD: External	
13						Growth (sv):	0.10%
14	'96-00	-2.18%	2.39%	3.07%			
15						Historic	
16	Ave.Compound Gr.	**1.38%**	**1.97%**	**3.56%**		"br + sv" Gr.	**3.57%**
17							
18	Value Line	EPS	DPS	BVPS			
19	Historic Gr.	**3.00%**	**2.00%**	**3.25%**			
20	(Avg of 5 and 10 yr. if both are available)						
21							
22	**Projected Growth**						
23	*Retention Growth Calculation*				Retention	Equity	Growth
24	Value Line	EPS	DPS	BVPS	Ratio (b)	Return (r)	(b*r)
25	2001 est'd	$3.05	$2.04	$23.55	0.331	12.50%	4.14%
26							
27	2003-05 est'd	3.75	2.15	30.80	0.427	12.00%	5.12%
28							
29	*Analyst's Estimates*					Projected	
30	Value Line	7.00%	2.00%	6.50%		Growth (br):	5.12%
31							
32	First Call	5.50%				ADD: External	
33						Growth (sv):	-0.99%
34							
35	Average					Projected	
36	Proj'd Growth	**6.25%**	**2.00%**	**6.50%**		"br + sv" Gr.	**4.13%**

Note: Negative (b*r) growth is not included in retention growth averages.
Source: The Value Line Investment Survey, C.A. Turner Utility Reports
First Call Corporation

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Discounted Cash Flow Growth Parameters
Piedmont Natural Gas Company

Historic Growth

		Compound Growth				Retention Growth	
	Historic Data	EPS	DPS	BVPS	Retention Ratio (b)	Equity Return (r)	Growth (b*r)
1	1994	1.35	1.01	11.36	0.252		
2	1995	1.45	1.09	12.31	0.248		
3	1996	1.67	1.15	13.07	0.311	12.60%	3.92%
4	1997	1.85	1.21	13.90	0.346	13.10%	4.53%
5	1998	1.96	1.28	14.91	0.347	13.20%	4.58%
6	1999	1.86	1.36	15.71	0.269	11.80%	3.17%
7	2000	1.87	1.44	16.35	0.230	11.50%	2.64%
8							
9		Compound Growth Rates				Ave. Internal	
10	'94-98	9.77%	6.10%	7.03%		Growth (br):	3.77%
11							
12	'95-99	6.42%	5.69%	6.29%		ADD: External	
13						Growth (sv):	0.95%
14	'96-00	2.87%	5.78%	5.76%			
15						Historic	
16	Ave.Compound Gr.	**6.35%**	**5.86%**	**6.36%**		"br + sv" Gr.	**4.72%**
17							
18	Value Line	EPS	DPS	BVPS			
19	Historic Gr.	**5.50%**	**6.00%**	**6.25%**			
20	(Avg of 5 and 10 yr. if both are available)						
21							
22	**Projected Growth**						
23	*Retention Growth Calculation*				Retention	Equity	Growth
24	Value Line	EPS	DPS	BVPS	Ratio (b)	Return (r)	(b*r)
25	2001 est'd	$2.20	$1.52	$17.50	0.309	12.50%	3.86%
26							
27	2003-05 est'd	2.85	1.67	21.70	0.414	13.50%	5.59%
28							
29	*Analyst's Estimates*					Projected	
30	Value Line	7.00%	4.50%	6.50%		Growth (br):	5.59%
31							
32	First Call	5.00%				ADD: External	
33						Growth (sv):	0.19%
34							
35	Average					Projected	
36	Proj'd Growth	**6.00%**	**4.50%**	**6.50%**		"br + sv" Gr.	**5.78%**

Note: Negative (b*r) growth is not included in retention growth averages.
Source: The Value Line Investment Survey, C.A. Turner Utility Reports
First Call Corporation

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Discounted Cash Flow Growth Parameters
South Jersey Industries

Historic Growth

		Compound Growth			Retention Growth		
	Historic Data	EPS	DPS	BVPS	Retention Ratio (b)	Equity Return (r)	Growth (b*r)
1	1994	1.21	1.44	14.46	-0.190		
2	1995	1.65	1.44	14.67	0.127		
3	1996	1.70	1.44	16.06	0.153	10.60%	1.62%
4	1997	1.71	1.44	16.11	0.158	10.60%	1.67%
5	1998	1.28	1.44	15.70	-0.125	8.20%	-1.03%
6	1999	2.01	1.44	16.61	0.284	11.90%	3.37%
7	2000	2.10	1.46	17.40	0.305	12.00%	3.66%
8							
9		Compound Growth Rates				Ave. Internal	
10	'94-98	1.42%	0.00%	2.08%		Growth (br):	2.58%
11							
12	'95-99	5.06%	0.00%	3.15%		ADD: External	
13						Growth (sv):	0.65%
14	'96-00	5.42%	0.35%	2.02%			
15						Historic	
16	Ave.Compound Gr.	**3.97%**	**0.12%**	**2.42%**		"br + sv" Gr.	**3.23%**
17							
18	Value Line	EPS	DPS	BVPS			
19	Historic Gr.	**2.50%**	**1.00%**	**2.25%**			
20	(Avg of 5 and 10 yr. if both are available)						
21							
22	**Projected Growth**						
23	*Retention Growth Calculation*				Retention	Equity	Growth
24	Value Line	EPS	DPS	BVPS	Ratio (b)	Return (r)	(b*r)
25	2001 est'd	$2.20	$1.47	$18.35	0.332	12.00%	3.98%
26							
27	2003-05 est'd	2.70	1.55	22.40	0.426	12.00%	5.11%
28							
29	*Analyst's Estimates*					Projected	
30	Value Line	8.50%	1.00%	5.50%		Growth (br):	5.11%
31							
32	First Call	4.00%				ADD: External	
33						Growth (sv):	0.87%
34							
35	Average					Projected	
36	Proj'd Growth	**6.25%**	**1.00%**	**5.50%**		"br + sv" Gr.	**5.98%**

Note: Negative (b*r) growth is not included in retention growth averages.
Source: The Value Line Investment Survey, C.A. Turner Utility Reports
First Call Corporation

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Discounted Cash Flow Growth Parameters
WGL Holdings, Inc.

Historic Growth

		Compound Growth				Retention Growth	
	Historic Data	EPS	DPS	BVPS	Retention Ratio (b)	Equity Return (r)	Growth (b*r)
1	1994	1.42	1.11	11.51	0.218		
2	1995	1.45	1.12	11.95	0.228		
3	1996	1.85	1.14	12.79	0.384	14.40%	5.53%
4	1997	1.54	1.17	13.48	0.240	13.70%	3.29%
5	1998	1.47	1.20	13.86	0.184	11.10%	2.04%
6	1999	1.79	1.22	14.72	0.318	9.90%	3.15%
7	2000	2.05	1.24	15.25	0.395	11.50%	4.54%
8							
9		Compound Growth Rates				Ave. Internal	
10	'94-98	0.87%	1.97%	4.75%		Growth (br):	3.71%
11							
12	'95-99	5.41%	2.16%	5.35%		ADD: External	
13						Growth (sv):	0.72%
14	'96-00	2.60%	2.12%	4.50%			
15						Historic	
16	Ave.Compound Gr.	**2.96%**	**2.08%**	**4.87%**		"br + sv" Gr.	**4.43%**
17							
18	Value Line	EPS	DPS	BVPS			
19	Historic Gr.	**3.50%**	**2.25%**	**4.25%**			
20	(Avg of 5 and 10 yr. if both are available)						
21							
22	**Projected Growth**						
23	*Retention Growth Calculation*				Retention	Equity	Growth
24	Value Line	EPS	DPS	BVPS	Ratio (b)	Return (r)	(b*r)
25	2001 est'd	$2.05	$1.26	$16.15	0.385	12.50%	4.82%
26							
27	2003-05 est'd	2.50	1.35	19.25	0.460	13.00%	5.98%
28							
29	*Analyst's Estimates*					Projected	
30	Value Line	7.50%	2.00%	5.50%		Growth (br):	5.98%
31							
32	First Call	5.50%				ADD: External	
33						Growth (sv):	0.36%
34							
35	Average					Projected	
36	Proj'd Growth	**6.50%**	**2.00%**	**5.50%**		"br + sv" Gr.	**6.34%**

Note: Negative (b*r) growth is not included in retention growth averages.
Source: The Value Line Investment Survey, C.A. Turner Utility Reports

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Historic Stock Prices and Dividend Yields for Comparable Companies

Historic Stock Prices

	Fri. 3/8/01	Fri. 3/15/01	Fri. 3/22/01	Fri. 3/29/01	Fri. 4/5/01	Thurs. 4/12/01	**Average**
AGL Resources Inc.	$ 21.700	$ 20.990	$ 20.570	$ 21.910	$ 21.550	$ 22.190	**$ 21.485**
Cascade Natural Gas Corp.	$ 19.680	$ 19.750	$ 20.090	$ 20.350	$ 19.910	$ 20.150	**$ 19.988**
NICOR, Inc.	$ 38.020	$ 36.840	$ 36.000	$ 37.270	$ 36.590	$ 38.360	**$ 37.180**
Northwest Natural Gas	$ 24.150	$ 23.700	$ 23.050	$ 24.000	$ 22.950	$ 23.280	**$ 23.522**
People's Energy Corp.	$ 41.350	$ 39.370	$ 37.920	$ 38.870	$ 38.440	$ 39.870	**$ 39.303**
Piedmont Natural Gas Co.	$ 33.550	$ 33.750	$ 32.900	$ 35.500	$ 34.850	$ 35.990	**$ 34.423**
South Jersey Industries, Inc.	$ 30.750	$ 30.980	$ 28.540	$ 29.500	$ 29.550	$ 29.500	**$ 29.803**
WGL Holdings, Inc.	$ 27.400	$ 26.530	$ 26.450	$ 27.650	$ 26.500	$ 27.920	**$ 27.075**

Expected Dividends and Dividend Yields

	Average Stock Price	Expected 2001-02 Dividend	Expected Dividend Yield
AGL Resources Inc.	$ 21.485	$ 1.12	5.19%
Cascade Natural Gas Corp.	$ 19.988	$ 0.98	4.90%
NICOR, Inc.	$ 37.180	$ 1.84	4.95%
Northwest Natural Gas	$ 23.522	$ 1.28	5.42%
People's Energy Corp.	$ 39.303	$ 2.10	5.33%
Piedmont Natural Gas Co.	$ 34.423	$ 1.60	4.63%
South Jersey Industries, Inc.	$ 29.803	$ 1.51	5.07%
WGL Holdings, Inc.	$ 27.075	$ 1.31	4.82%
		Average	**5.04%**

Source: Value Line Investment Survey; Wall Street Journal.

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DCF Cost of Common Equity for Comparable Group

	Dividend	Growth		Cost of Equity	
	Yield	Low	High	Low	High
AGL Resources Inc.	5.19%	0.79%	5.50%	5.98%	10.69%
Cascade Natural Gas Corp.	4.90%	0.50%	7.56%	5.40%	12.46%
NICOR, Inc.	4.95%	4.25%	8.00%	9.20%	12.95%
Northwest Natural Gas	5.42%	0.97%	6.25%	6.39%	11.67%
People's Energy Corp.	5.33%	1.38%	6.50%	6.71%	11.83%
Piedmont Natural Gas Co.	4.63%	4.50%	6.50%	9.13%	11.13%
South Jersey Industries, Inc.	5.07%	0.12%	6.25%	5.18%	11.32%
WGL Holdings, Inc.	4.82%	2.00%	6.50%	6.82%	11.32%
Average	**5.04%**	**1.81%**	**6.63%**	**6.85%**	**11.67%**
Using average projected growth:	**5.04%**	**4.82%**		**9.86%**	

DCF Cost of Common Equity for MGE

Dividend	Growth		Cost of Equity	
Yield	Low	High	Low	High
5.04%	**4.00%**	**5.00%**	**9.04%**	**10.04%**
5.04%	**4.85%**		**9.9%**	

Source: Schedules MB-6, MB-7.

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Capital Assest Pricing Model Cost of Common Equity (Ke) for Comparable Group

Formula: $Ke = Rf + beta(Rm - Rf)$

Risk Free Rate (Rf) = 4.97%

Market Premium (Rm - Rf) = 7.80%

	Beta	CAPM Ke
AGL Resources Inc.	0.60	9.65%
Cascade Natural Gas Corp.	0.55	9.26%
NICOR, Inc.	0.60	9.65%
Northwest Natural Gas	0.60	9.65%
People's Energy Corp.	0.70	10.43%
Piedmont Natural Gas Co.	0.60	9.65%
South Jersey Industries, Inc.	0.45	8.48%
WGL Holdings, Inc.	0.60	9.65%
Average		**9.55%**

Source: Value Line Investment Survey; Ibbotson and Associates

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Missouri Gas Energy
Weighted Average Cost of Capital and Pre-Tax Interest Coverage

	Amount	Percent	Cost Rate	Weighted Cost
Common Stock Equity	$ 720,664,676	32.47%	9.90%	3.21%
Preferred Stock	$ 96,769,550	4.36%	9.80%	0.43%
Long Term Debt	$1,345,097,661	60.61%	8.124%	4.92%
Short Term Debt	$ 56,643,333	2.55%	7.27%	0.19%
	$2,219,175,220	100.00%		**8.75%**

Pre-Tax Interest Coverage Tax factor = **1.628855**

	Weighted Cost	Pre-tax Weighted Cost
Common Stock Equity	3.21%	5.24%
Preferred Stock	0.43%	0.70%
Long Term Debt	4.92%	4.92%
Short Term Debt	0.19%	0.19%
Total	8.75%	11.04%
Pre-tax weighted cost:		11.04%
Cost of Debt:		5.11%
Pre-tax Interest Coverage		**2.16**