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Witness:	*David Murray*
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MISSOURI PUBLIC SERVICE COMMISSION

UTILITY SERVICES DIVISION

DIRECT TESTIMONY

OF

DAVID MURRAY

MISSOURI GAS ENERGY

CASE NO. GR-2006-0422

Jefferson City, Missouri
October 2006

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of Missouri Gas Energy's Tariff Sheets Designed to Increase Rates for Gas Service in the Company's Missouri Service Area	)))	Case No. GR-2006-0422

AFFIDAVIT OF DAVID MURRAY

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

David Murray, of lawful age, on his oath states: that he has participated in the preparation of the foregoing Direct Testimony in question and answer form, consisting of 39 pages to be presented in the above case; that the answers in the foregoing Direct Testimony were given by him; that he has knowledge of the matters set forth in such answers; and that such matters are true and correct to the best of his knowledge and belief.

David Murray

Subscribed and sworn to before me this 12th day of October 2010

NOTARY PUBLIC NOTARY SEAL STATE OF MISSOURI

ASHLEY M. HARRISON
My Commission Expires
August 31, 2010
Cole County
Commission #06898978

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Q. Please state your name.

A. My name is David Murray.

Q. Please state your business address.

A. My business address is P.O. Box 360, Jefferson City, Missouri 65102.

Q. What is your present occupation?

A. I am employed as a Utility Regulatory Auditor IV for the Missouri Public Service Commission (Commission). I accepted the position of a Public Utility Financial Analyst in June 2000 and my position was reclassified in August 2003 to an Auditor III. I briefly served as Interim Manager of the Financial Analysis Department in April 2006 and accepted the position of Auditor IV, effective July 1, 2006.

Q. Were you employed before you joined the Commission's Staff (Staff)?

A. Yes, I was employed by the Missouri Department of Insurance in a regulatory position.

Q. What is your educational background?

A. In May 1995, I earned a Bachelor of Science degree in Business Administration with an emphasis in Finance and Banking, and Real Estate from the University of Missouri-Columbia. I earned a Masters in Business Administration from Lincoln University in December 2003.

Q. Are you currently pursuing any professional designations that would enhance your credibility as a financial analyst, and, consequently, a rate-of-return witness?

A. Yes. I am pursuing the Chartered Financial Analyst (CFA) charter. I passed the Level I examination of the CFA Program and I am currently a Level II candidate. In order to receive the charter, I must pass the examinations for the next two levels of the program and also have four years of relevant professional work experience.

Q. Please provide some background on the CFA Program.

A. According to the CFA Institute's website, the CFA Program is a self-study program that is internationally recognized and considered by many employers and investors as the "definitive standard for measuring competence and integrity in the fields of portfolio management and investment analysis." The program's "professional conduct requirements demand that both CFA candidates and charterholders adhere to the highest standards of ethical responsibility."

Q. In your experience with the Missouri Public Service Commission, what individuals in your field tend to hold the CFA charter?

A. During my tenure with the Commission, I have found the CFA charter to be most prevalent with individuals that work in the fixed-income (debt) industry and the equity research industry.

Q. Are debt and equity securities the instruments that you analyze when making recommendations to the Commission on the cost of capital?

A. Yes.

Q. Have you filed testimony in other cases before this Commission?

A. Yes. Please see Attachment A for a list of these cases.

Q. Have you made recommendations in any other cases before this Commission?

A. Yes, I have made recommendations on finance, merger and acquisition cases before this Commission.

Q. Have you attended any schools, conferences and/or seminars specific to utility finance and utility regulation?

A. Yes. I attended the Annual Eastern Utility Rate School in October 2000, the Fundamentals of Utility Finance seminar in January 2001, the National Association of Regulatory Utility Commissioners' Annual Regulatory Studies Program in August 2001 and occasional Financial Research Institute Utility Symposiums since June 2000.

Q. What is the purpose of your testimony in this case?

A. My testimony is presented to recommend to the Commission a fair and reasonable rate of return for Southern Union Company's (Southern Union) Missouri Gas Energy (MGE) division's natural gas utility rate base.

Q. Have you prepared any schedules to your analysis of the cost of capital for MGE?

A. Yes. I am sponsoring a study entitled "An Analysis of the Cost of Capital for Missouri Gas Energy, Case No. GR-2006-0422" consisting of 24 schedules which are attached to this direct testimony (see Schedule 1 for a list of these schedules).

EXECUTIVE SUMMARY

Q. Please provide an executive summary of your testimony.

A. I am recommending that the Commission authorize an overall rate of return (ROR) of 8.01 percent to 8.23 percent for MGE. My rate-of-return recommendation is based on a recommended return on common equity of 8.65 percent to 9.25 percent applied to

Southern Union's December 31, 2005, common equity ratio of 36.31 percent. My recommendation is driven by my comparable company analysis using the discounted cash flow (DCF) model. I continue to believe that the DCF model is the most reliable model available for estimating a utility company's cost of common equity.

My embedded cost of long-term debt recommendation of 7.70 percent is based on Southern Union's embedded cost of long-term debt as of December 31, 2005, which Southern Union provided in response to Staff Data Request No. 0065. This embedded cost of long-term debt does not include any debt held at Southern Union's Panhandle Energy subsidiaries. This is consistent with the Commission's decision in the last MGE rate case, Case No. GR-2004-0209, which was upheld by the Western District Missouri Court of Appeals. See *MGE v. Public Service Commission of the State of Missouri*, 186 S.W.3d 376 (Mo. App. 2005).

My embedded cost of preferred stock recommendation of 7.76 percent is based on Southern Union's embedded cost of preferred stock as of December 31, 2005, which Southern Union provided in response to Staff Data Request No. 0065.

My cost of short-term debt recommendation is based on Southern Union's average cost of short-term debt for calendar year 2005, which Southern Union provided in response to Staff Data Request No. 0066.

My capital structure recommendation is based on Southern Union's consolidated capital structure as of December 31, 2005. Schedule 9 presents Southern Union's capital structure and associated capital ratios. The resulting capital structure consists of 36.31 percent common stock equity, 5.00 percent preferred stock, 57.57 percent long-term debt and 1.11 percent short-term debt.

Q. Why did you recommend using Southern Union's capital structure and costs of long-term debt, preferred stock and short-term debt as of the test year, December 31, 2005, rather than the update period of June 30, 2006?

A. I recommend using the test year capital structure for purposes of my direct testimony because Southern Union made a significant acquisition during the update period which was initially funded by a bridge loan. Staff believes that Southern Union's capital structure through Staff's proposed true-up period may be more appropriate than the test-year capital structure. However, the true-up information was not available at the time Staff prepared direct testimony.

Q. Please explain how you estimated your recommended cost of common equity.

A. I estimated my recommended cost of common equity by applying the DCF model to six comparable natural gas distribution companies. I then evaluated a number of factors to test the reasonableness of this recommendation. A complete and detailed explanation of my recommended cost of common equity starts on page 21, line 6, of this testimony.

LEGAL PRINCIPLES

Q. Please explain the main legal principles which form the basis for the assessment of the justness and reasonableness of rate-of-return recommendations.

A. The *Bluefield Water Works and Improvement Company* (1923) (*Bluefield*) and the *Hope Natural Gas Company* (1944) (*Hope*) cases have been cited as the two most influential cases for the legal framework to determine a fair and reasonable rate of return.

Q. Please provide the main points surrounding the *Bluefield* case.

A. In the *Bluefield* case the Supreme Court ruled that a fair return would be:

1. A return "generally being made at the same time" in that "general part of the country;"

2. A return achieved by other companies with "corresponding risks and uncertainties;" and

3. A return "sufficient to assure confidence in the financial soundness of the utility."

The Court specifically stated:

> 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 it 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.

Q. Please provide the main points surrounding the *Hope* case.

A. In the *Hope* case, the Court stated that:

> The rate-making process . . . , i.e., the fixing of "just and reasonable" rates, involves a balancing of the investor and the consumer interests. Thus we stated . . . that "regulation does not insure that the business shall produce net revenues" . . . it is important that there be enough revenue not only for operating expenses but also for the capital costs of the business. These include service on the debt and dividends on the stock . . . . By that standard the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks. That return, moreover, should be sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain its credit and to attract capital.

The *Hope* case restates the concept of comparable returns to include those achieved

by other enterprises that have "corresponding risks." The Supreme Court also noted in this case that regulation does not guarantee profits to a utility company.

Q. On a technical level, has the methodology of determining rate of return changed since the *Hope* and *Bluefield* decisions were written?

A. Yes. While I believe the objective of authorizing a fair rate of return is still to allow the company the opportunity "to assure confidence in the financial integrity of the enterprise, so as to maintain its credit and to attract capital," the discipline of rate of return analysis has evolved since the decisions were made in *Hope* and *Bluefield.* In fact, two of the most commonly used models in making rate-of-return recommendations did not even become a part of mainstream finance until the 1960s.

Q. What are these models?

A. The DCF model and the capital asset pricing model (CAPM).

Q. When was the DCF model introduced as a tool to estimate the required return on common equity?

A. The DCF model, as used in utility ratemaking, is referred to as the dividend growth, Gordon growth and/or dividend discount model, in most college finance textbooks. This model was introduced by Myron J. Gordon for cost-of–common-equity determinations in 1962.[1] The use of this model for stock valuation purposes had been introduced before this time.

Q. When was the CAPM introduced?

[1] Frank K. Reilly and Keith C. Brown, *Investment Analysis and Portfolio Management*, Fifth Edition, The Dryden Press, 1997, p. 438.

A. Much of the basis for this model was provided in 1964 by William F. Sharpe who received the Nobel Prize in 1990 for much of his work in producing this model.[2]

Q. Have either of these models been used and accepted in the past to determine a fair authorized rate of return on common equity in Missouri?

A. Yes.

Q. Do you have any further comments on the use of cost of capital models to determine a fair rate of return?

A. Yes. See Schedule A.

HISTORICAL ECONOMIC CONDITIONS

Q. Please discuss the main points of the current capital and economic environment that the Commission should consider in determining a reasonable authorized return on common equity (ROE) for MGE.

A. The Federal Reserve (Fed) steadily raised the Fed Funds rate by 25 basis points at every Federal Open Market Committee (FOMC) meeting from June 30, 2004, until June 29, 2006, consisting of seventeen consecutive rate hikes. However, in its last two meetings, the FOMC has held rates steady at 5.25 percent. Up until June 30, 2004, the Fed had kept the Fed Funds Rate at a 46-year low of 1.00 percent for a full year. According to a recent article in the *Wall Street Journal (WSJ)*[3], the Fed stated in its meeting on September 20, 2006, that it remained concerned about inflation, and as a result, if it changes rates soon, it is more likely to raise them than lower them. According to the *WSJ* article, the Fed believes that its recent decisions to pause in interest rate increases is justified by the

[2] Zvie Bodie, Alex Kane and Alan J. Marcus, *Essentials of Investments,* Richard D. Irwin, Inc. 1992, p. 11.
[3] Greg Ip, "Fed Cites Energy, Housing Declines In Holding Rates: Despite Inflation Warning, Investors Gain Confidence More Increases Are Unlikely," *The Wall Street Journal*, September 21, 2006, pp. A1 and A13.

quickening decline in housing activity and easing inflation pressure from energy. However, the Fed also recognizes that lower energy prices can also boost consumers' purchasing power, which can improve growth prospects and cause the need to increase rates. The *WSJ* article expresses the opinion that the Fed's statement implies that that the Fed is more concerned about current trends in the price of energy having inflationary effects rather than lower energy prices improving growth prospects.

The September 21, 2006, article in the *WSJ*, stated that it appears that investors "...increasingly expect the Fed not just to remain on hold, but to cut rates at least once by next June and again by December 2007. Ten-year Treasury bond yields have fallen, ending yesterday at 4.73%, down from 5.25% in late June."

Q. What has happened to long-term interest rates during the period that the Fed increased interest rates from 1.00 percent to 5.25 percent and its subsequent decisions not to raise the Fed Funds rate at its last two meetings?

A. Long-term interest rates had started to respond to the Fed's monetary policy tightening starting in July 2005. Thirty-year Treasury bond yields were recently as high as 5.20 percent in June 2006, but as of September the average Thirty-year Treasury bond yield had pulled back to 4.85 percent. Consequently, the market appears to be undecided as to whether the market justifies a further increase in long-term interest rates or if they will stay close to where they had been, which was at recent historical low levels (see Schedules 5-2 and 5-3).

Q. How have utility bond yields responded to the tightening of U.S. monetary policy?

A. A review of Schedules 5-1 and 5-3 shows that since average utility bond yields fell to an average of 5.39 percent during June 2005, which was the lowest average yield in the past 25 years, average utility bond yields had increased to an average of 6.39 percent in May and June of 2006, but have since declined to an average of 6.20 percent in August 2006.

Q. Please discuss the results of the major stock market indices over the past year.

A. In light of the interest rate activity described above, it is important to reflect on recent results of the major stock market indices. According to the October 13, 2006, issue of *The Value Line Investment Survey: Selection & Opinion*, for the first three quarters of 2006 the Dow Jones Industrial Average (DJIA) increased 9.0 percent, the Standard & Poor's (S&P) 500 increased 7.0 percent, the NASDAQ Composite Index (NASDAQ) increased 2.4 percent and the Dow Jones Utility Average (DJUA) increased 5.7 percent. According to the same publication, for the third quarter of 2006 the DJIA increased 4.7 percent, the S&P 500 increased 5.2 percent, the NASDAQ increased 4.0 percent and the DJUA increased 3.5 percent. For the twelve months from September 30, 2005, through September 30, 2006, the DJIA increased 10.51 percent, the S&P 500 increased 8.71 percent and the NASDAQ increased 4.96 percent (*Wall Street Journal*, p. C1, October 2, 2006). According to closing quotes obtained from CBS MarketWatch, the DJUA decreased 0.92 percent for the same period.

Q. What can one infer about the capital markets for the utility industry from the results indicated above?

A. The DJUA has fallen more in line with the other indexes in recent quarters. However, for the twelve months through September 30, 2006, the DJUA has significantly lagged behind the other indexes. This is not surprising considering that the DJUA increased

20.9 percent for the 2005 calendar year, whereas the DJIA decreased 0.6 percent, the S&P 500 only increased 3.0 percent and the NASDAQ only increased 1.4 percent.

There are a number of factors that may have caused the recent pull back in the DJUA. The first is that some companies in the DJUA had been able to profit from past higher natural gas prices because this allowed some companies, such as TXU, to sell power in the wholesale market at significant margins over cost. With the recent decline in natural gas prices, these margins have shrunk.

Another factor is that interest rates had started to increase in the past year. These increases occurred through July 2006, but they have since declined. Utility stock prices have a strong inverse relationship to changes in interest rates. This is because regulated utility stocks are viewed as close alternatives to investments in fixed-income securities; i.e., bonds. Fixed-income security prices have this same inverse relationship; i.e., as interest rates increase, the price of bonds decrease.

I don't believe that the economic and capital market environment has changed enough to alter my opinion that utility companies still benefit from a fairly low cost of capital environment. As I will demonstrate later in my testimony, even if I had relied entirely on projected earnings growth rates of utility stocks, which I believe tend to be overly optimistic, my recommended ROE would have firmly been in the 8 to 9 percent range. The midpoint of my recommendation in this case is approximately the same as my midpoint in the last MGE rate case, Case No. GR-2004-0209. The cost of capital environment appears to be similar to or even slightly lower than the environment during MGE's last rate case.

Q. Should the results from the DJUA be analyzed with some caution in this case?

A. Yes. None of my comparable companies are included in the DJUA. Consequently, I do not consider the DJUA as a good proxy group for MGE. However, comparing utility index results to the rest of the stock market can provide insight on the value being placed on utility stocks in general.

Utility indices can also vary in their results. For example the Value Line Utilities group, which is composed of 83 "utility" companies, increased by 5.9 percent for the third quarter of 2006 compared to the 3.5 percent increase for the DJUA. The Value Line Utilities group increased 9.7 percent for the first three quarters of 2006 compared to the DJUA's increase of 5.7 percent. The Value Line Utilities index contains companies ranging from water utility companies, such as American States Water Company, to diversified natural gas companies, such Devon Energy Corporation. Consequently, there can be significant differences in the companies contained in an index, which would explain the divergence in results of the Value Line Utilities index versus the DJUA. (For a more detailed discussion of historical economic conditions, please see Schedule B).

ECONOMIC PROJECTIONS

Q. Do you have any information on economic projections?

A. Yes. See Schedule C for projections on inflation, interest rates and gross domestic product (GDP).

BUSINESS OPERATIONS OF SOUTHERN UNION

Q. Please describe Southern Union's business operations.

A. Southern Union's Form 10Q Securities and Exchange Commission (SEC) filing for the quarterly period ending June 30, 2006, provides a good description of Southern Union's business operations:

> Southern Union owns and operates assets in the regulated and unregulated natural gas industry and is primarily engaged in the gathering, processing, transportation, storage, and distribution of natural gas in the United States. The Company operates in three reportable segments: the Transportation and Storage, Gathering and Processing and Distribution segments. The Transportation and Storage segment is primarily engaged in the interstate transportation and storage of natural gas in the Midwest and Southwest and from the Gulf Coast to Florida, and also provides LNG terminalling and regasification services. The Gathering and Processing segment is primarily engaged in the gathering, transmission, treating, processing and redelivery of natural gas and natural gas liquids in Texas and New Mexico. The Distribution segment is primarily engaged in the local distribution of natural gas in Missouri and Massachusetts. The Company's discontinued operations relate to its PG Energy natural gas distribution division and the Rhode Island operations of its New England Gas Company division.

Southern Union closed a major acquisition on March 1, 2006. Southern Union paid $1.6 billion for Sid Richardson Energy Services, Ltd., a privately held natural gas gathering and processing company. This acquisition is consistent with Southern Union's recent strategy of transforming itself from primarily a natural gas distribution utility company to a more diversified natural gas service provider, which as will be discussed later, involves more business risk than a regulated transmission and distribution company. The $1.6 billion purchase price was funded by a bridge loan, which was partially retired with proceeds from Southern Union's recent sale of its Rhode Island natural gas distribution properties and its Pennsylvania natural gas distribution properties.

Southern Union also recently announced the completion of a transaction that increases its ownership interest in Citrus Corporation, parent to Florida Gas Transmission Company, and the elimination of its ownership interest in Transwestern Pipeline. As a result of the

announcement of these transactions, Standard & Poor's placed Southern Union's credit rating on a negative CreditWatch. This will be discussed in more detail when I discuss Southern Union's credit rating.

Southern Union's total operating revenues were $1,503,272,000 for the 12 months ended December 31, 2005, versus $1,304,405,000 for the 12 months ended June 30, 2004. These 2005 revenues resulted in an overall net income applicable to common stock of $3,318,000 and an earnings per share (EPS) of $0.03 as compared to the June 30, 2004, net income applicable to common stock of $101,339,000 and an EPS of $1.26. These revenues and net incomes were generated from total property, plant and equipment of $3,485,940,000 at December 31, 2005, and $3,207,513,000 at June 30, 2004. These figures were taken from Southern Union's 2004 and 2005 Annual Reports. Southern Union's 2004 financial information was stated for the twelve months ending June 30, 2004, because Southern Union's fiscal year had been based on a fiscal year ending on June 30. Southern Union now has a fiscal year ending on December 31.

Q. Please describe the current credit ratings of Southern Union.

A. Southern Union's current Standard & Poor's Corporation's (S&P) corporate credit rating of "BBB" was put on a negative CreditWatch on September 15, 2006. S&P's research report is attached as Schedule 23 to this direct testimony. Portions of this report follow:

> On Sept. 15, 2006, Standard & Poor's Ratings Services placed its 'BBB' corporate credit ratings on Southern Union Co. and affiliates Panhandle Eastern Pipe Line L.P., CrossCountry Energy LLC, Transwestern Holding Co. LLC, and Transwestern Pipeline Co. LLC on CreditWatch with negative implications following Southern Union's announcement of a series of transactions that will effectively increase its ownership interest in Citrus Corp., parent to Florida Gas Transmission Co.

> (BBB+/Stable/--), to 50% from 25%, and eliminate its ownership interest in Transwestern Pipeline...
>
> . . . The CreditWatch listing on Southern Union reflects its expected contribution of approximately $455 million to repay its pro rata share of [CCE Holdings LLC] CCEH's existing debt and to fund the remainder of the transactions. Resolution of the CreditWatch listing on Southern Union will depend on the way in which it finances the transactions. . .
>
> . . . Although Southern Union's increased ownership interest in Florida Gas Transmission and decreased ownership interest in Transwestern Pipeline should improve its business risk profile, the company's credit quality may also be affected by its financing plan for the transactions. On Aug. 24, 2006, Southern Union completed the sale of its Pennsylvania and Rhode Island utilities for $1.15 billion, which was an important step in repairing its financial credit protection measures following the company's $1.6 billion purchase of Sid Richardson Energy Services.
>
> The CreditWatch listings will likely be resolved closer to the closing of the transactions. Completion of the regulatory approval process is
>
> expected to occur in the fourth quarter of 2006.

Although the above concerns expressed by S&P are focused mainly on financing issues surrounding the announced transactions, S&P had previously mentioned concerns about Southern Union's increased business risk profile associated with its acquisition of the Sid Richardson properties, which includes gathering and processing operations (see Schedule 24 attached to this direct testimony). In fact, S&P analyst Plana Lee informed Staff by email on October 5, 2006, that Southern Union would no longer be assigned a business profile ranking used to compare it to other natural gas transmission and distribution companies. S&P now considers Southern Union as predominately a midstream natural gas company. According to a November 30, 2005, S&P Research Report, "Key Rating Factors For U.S. Midstream Natural Gas Companies," a midstream company is characterized as follows:

> The midstream gas industry in the U.S. provides an essential link between upstream producers of natural gas and the delivery of natural gas products to end-user markets. Being in the middle of the commodity chain, the sector is characterized by cyclical operations that are subject to volatile cash flow. Midstream players suffer volatility not only because they are exposed to input and output prices that may not be closely correlated, but also because of competition, types of contracts with customers, and volatility in throughput volumes due to cyclical demand. As a result, companies in this sector have business profile scores ranging from '7' to '9' (business profiles are characterized from '1' (excellent) to '10' (vulnerable). Although the above explanation provides a numerical ranking of the typical business profiles for midstream companies, S&P is no longer using this ranking system for midstream companies. S&P has moved to a more general ranking system for midstream companies which classifies the business risk as *strong*, *satisfactory*, *weak* or *vulnerable*. Southern Union is currently assigned a *satisfactory* business risk profile.

Q. Please provide some historical financial information on Southern Union.

A. Schedules 7 and 8, present historical capital structures and selected financial ratios from 2001 through 2005 for Southern Union. Southern Union's consolidated common equity ratio has ranged from a high of 36.50 percent to a low of 25.44 percent from 2001 through 2005. Staff's recommended capital structure used for purposes of calculating the rate of return to be applied to MGE's rate base has a common equity ratio of 36.31 percent (Schedule 9), which is based on Southern Union's capital structure as of the end of the test year, December 31, 2005.

Southern Union's consolidated earned ROE has ranged from a low of 1.80 percent in 2001 to 11.00 percent in 2005. Because Southern Union is transitioning into a diversified natural gas energy company from a natural gas distribution company, any comparison of Southern Union's recent ROEs to those of more traditional natural gas distribution companies is inappropriate.

Southern Union had not historically paid a cash dividend to its shareholders, but began paying its shareholders a $0.10 per share quarterly dividend during the second quarter of

2006. This will result in a small dividend payout ratio for Southern Union in the future assuming that Southern Union's earnings per share levels can remain fairly healthy.

Southern Union's market-to-book ratio ranged from 1.53 times for year-end 2002 to 1.88 times for year-end 2004.

DETERMINATION OF THE COST OF CAPITAL

Q. Please describe the approach for determining a utility company's cost of capital.

A. The total dollars of capital for the utility company are determined as of a specific point in time. This total dollar amount is then apportioned into each specific capital component; i.e. common equity, long-term debt, preferred stock and short-term debt. A weighted cost for each capital component is determined by multiplying each capital component ratio by the appropriate embedded cost or by the estimated cost of common equity component. The individual weighted costs are summed to arrive at a total weighted cost of capital. This total weighted average cost of capital (WACC) is synonymous with the fair rate of return for the utility company.

Q. Why is a total WACC synonymous with a fair rate of return?

A. From a financial viewpoint, a company employs different forms of capital to support or fund the assets of the company. Each different form of capital has a cost and these costs are weighted proportionately to fund each dollar invested in the assets.

Assuming that the various forms of capital are within a reasonable balance and are valued correctly, the resulting total WACC, when applied to rate base, will provide the funds necessary to service the various forms of capital. Thus, the total WACC corresponds to a fair rate of return for the utility company.

CAPITAL STRUCTURE AND EMBEDDED COSTS

Q. What capital structure did you use for MGE?

A. The capital structure I have used for this case is Southern Union's capital structure on a consolidated basis, as of the end of the Staff's test year in this proceeding, December 31, 2005. Schedule 9 presents Southern Union's capital structure and associated capital ratios. The resulting capital structure consists of 36.31 percent common stock equity, 57.57 percent long-term debt, 5.00 percent preferred stock and 1.11 percent short-term debt.

The amount of long-term debt outstanding on December 31, 2005, includes current maturities due within one year. The amount of long-term debt in the capital structure was reduced for various unamortized costs, which were provided by Southern Union in response to Staff Data Request No. 0065.1. As I indicated earlier in my testimony, I included all of Southern Union's debt in the capital structure, but not Panhandle Energy's debt, which is consistent with the Commission's decision in the last MGE rate case.

The amount of preferred stock outstanding on December 31, 2005, was also reduced by the net balance associated with the unamortized issuance expense as reported in Southern Union's response to Staff Data Request No. 0065.

I am recommending that some short-term debt be included in the capital structure used to determine a rate of return in this rate case. Southern Union's short-term debt balances have been consistently higher than its construction work in progress (CWIP) balances. I decided to use the average monthly short-term debt balance for calendar year 2005 and deducted the year-end CWIP balance to determine the amount of short-term debt to include in my recommended capital structure.

Q. Why is Southern Union's capital structure the appropriate capital structure for purposes of estimating an appropriate rate of return for MGE in this case?

A. Southern Union has historically used a significant amount of leverage in its capital structure. Southern Union's higher leveraged capital structures create additional financial risk which has an impact on the cost of debt determined in an embedded cost of debt calculation. It is important to match these capital costs with the capital structure that has consistently been in place during Southern Union's ownership of MGE. This is the capital structure that is evaluated by investors and credit rating agencies.

In fact, in two MGE rate cases in the mid to late 1990s, MGE's own rate of return witness, Mr. Bruce H. Fairchild, used the actual capital structure of Southern Union when recommending an appropriate rate of return. In Case No. GR-96-285, Mr. Fairchild cited the following reasons for his use of Southern Union's actual capital structure to determine MGE's cost of capital:

- These ratios reflect the mix of capital currently employed to finance MGE's investment in assets used to provide gas service in Missouri;
- Although this capital structure deviates from industry standards for local gas distribution companies (LDCs), it is consistent with Southern Union's entrepreneurial spirit, acquisition orientation, and earnings retention practices; and
- While Southern Union's higher debt ratio, and lower common equity ratio, impart additional financial risks, these are offset by the greater use of cheaper debt and preferred stock capital, and less use of significantly more expensive common equity capital.

Although not verbatim, Mr. Fairchild states essentially the same reasons for the use of Southern Union's capital structure in Case No. GR-98-140.

Q. Please provide some detail on Southern Union's recent transactions that supports your recommendation of the test-year capital structure and the possibility of the capital structure for the true-up period.

A. Southern Union completed its acquisition of Sid Richardson Energy Services on March 1, 2006. The acquisition was initially funded with a bridge loan of $1.6 billion. This bridge loan is available for 364 days, but the terms of the loan require Southern Union to apply 100 percent of the net cash proceeds from asset dispositions and from the issuance of equity and/or debt to the repayment of the bridge loan. Southern Union completed the sale of is Pennsylvania and Rhode Island natural gas distribution properties on August 25, 2006, which resulted in net proceeds of approximately $1.075 billion, which was required to be applied to the repayment of the bridge loan.

Staff believes that it is currently more appropriate to use the test year capital structure. However, considering that much of the bridge loan will have been retired by Staff's proposed true-up period of September 30, 2006, Staff believes that Southern Union's capital structure as of the true-up period may be the most appropriate capital structure. Staff will analyze this information when it becomes available and make its recommendation in true-up testimony.

Q. What was the embedded cost of long-term debt for Southern Union on December 31, 2005?

A. The embedded cost of long-term debt for Southern Union as of December 31, 2005, was 7.70 percent. The embedded cost of long-term debt was provided by Southern Union in response to Staff Data Request No. 0065. The embedded cost of long-term debt does not include the cost of Panhandle Energy's debt, which is consistent with the Commission's decision in the last MGE rate case.

Q. What was the embedded cost of preferred stock for Southern Union on December 31, 2005?

A. The embedded cost of preferred stock for Southern Union was 7.76 percent on December 31, 2005. The embedded cost of preferred stock was provided by Southern Union in response to Staff Data Request No. 0065.

COST OF COMMON EQUITY

Q. How do you propose to analyze those factors by which the cost of common equity for MGE may be determined?

A. In order to estimate the cost of common equity for MGE, I performed a comparable company cost of common equity analysis of six natural gas utility companies. For informational purposes, I also decided to analyze the cost of common equity for two other companies that have natural gas distribution operations in Missouri. I also decided to analyze Southern Union's cost of common equity for informational purposes. I have selected the DCF model (explained in detail in Schedule D) as the primary tool to determine the cost of common equity for MGE, but I also used the CAPM (explained in detail in Schedule E) to check the reasonableness of the DCF results.

I will also provide the opinions and views of some of the most prominent individuals in the finance field, whether they are investors, academics or monetary policy makers, to support a single digit cost of common equity recommendation. In addition, I reviewed some other external indicators to test the reasonableness of my recommendation. I will discuss these in more detail later in my testimony.

Q. Can you directly analyze MGE's cost of common equity?

A. No. In order to directly estimate the cost of common equity for MGE, it would have to be a stand-alone company that is publicly traded and pay a cash dividend. The only way that an investor can invest in the operations of MGE is by investing in the consolidated corporation of Southern Union. Southern Union started paying a cash dividend during the second quarter of 2006. Therefore, it is now possible to perform a DCF cost of common equity analysis on Southern Union (this would be without the benefit of historical cash dividend payment information). However, because Southern Union is transforming itself from a natural gas distribution utility company to a diversified natural gas company, Southern Union's cost of common equity no longer reflects the lower risks associated with natural gas distribution operations. Consequently, my cost of common equity analysis on Southern Union is for informational purposes only.

Q. How did you determine which companies you would include to represent comparable natural gas distribution companies?

A. Schedule 13 presents a list of fifteen market-traded natural gas distribution companies monitored by the financial-services firm of Edward Jones. This list was reviewed for the following criteria:

1. Classified as a natural gas distribution company by Edward Jones;
2. Stock publicly traded: this criterion did not eliminate any companies;
3. Information printed in Value Line: this criterion did not eliminate any companies;
4. Ten years of data available: this criterion eliminated one company;
5. Positive dividend per share annualized compound growth rate from 1995 through 2005: this criterion eliminated one additional company;
6. Total capitalization less than $5 billion: this criterion did not eliminate any companies;

7. Two sources for projected growth available with one of those being Value Line: this criterion eliminated three additional companies;

8. At least investment grade credit rating: this criterion did not eliminate any companies.

This final group of ten publicly traded natural gas distribution companies was further refined to eliminate Cascade Natural Gas Corporation and Peoples Energy Corporation because they are currently the subject of significant merger negotiations. I also removed the Laclede Group (Laclede) and Atmos Energy Corporation (Atmos) from the comparable group in order to analyze these companies separately because they have Missouri natural gas distribution operations. After removing these companies from the proxy group, six comparable companies (comparables) remained. The comparables are listed on Schedule 14.

Q. Why did you separately analyze natural gas distribution companies that have natural gas distribution operations in Missouri?

A. I performed this analysis because I believe it can be informative to analyze the cost of common equity of other companies that have similar operations in Missouri to that of MGE. However, I do not believe that any weight should be given to my cost of common equity estimations for Atmos. Atmos acquired TXU's natural gas operations in late 2004, which effectively doubled Atmos' size. Some analysts have expressed and are still expressing concerns about the challenge that Atmos faces in integrating such a large acquisition into its current operations. I believe that this significant acquisition may have caused increased risk to Atmos' shareholders, and therefore, its cost of common equity. It is not appropriate to recommend a higher ROE for MGE based on increased risk that is not related to the continuing natural gas distribution operations.

Although I did not give any weight to my Laclede DCF cost of common equity estimates shown on Schedule 18, I do believe that Laclede's cost of common estimation can be informative because most of its operations are confined to Missouri and are regulated by the Missouri PSC. Laclede's exposure to the Missouri regulatory climate is informative because Laclede's Missouri natural gas distribution operations are its core operations. Therefore, its cost of common equity is most likely to be affected by investors' assessment of the Missouri regulatory climate as compared to other publicly-traded companies that have natural gas distribution operations in Missouri.

Q. Why did you choose to analyze Southern Union's cost of common equity?

A. I chose to analyze Southern Union's cost of common equity for informational purposes only. I don't believe that any weight should be given to my Southern Union cost of common equity estimations. Because Southern Union is now a diversified gas company, its cost of common equity may not be consistent with that of the lower-risk natural gas distribution industry.

Q. Please explain how you approached the determination of the cost of common equity for the comparables.

A. I have calculated a DCF cost of common equity for each of the comparables. The first step was to estimate a growth rate. I reviewed the actual dividends per share (DPS), earnings per share (EPS), and book values per share (BVPS) as well as projected EPS growth rates for the comparables. Schedule 15-1 lists the annual compound growth rates for DPS, EPS, and BVPS for the past ten years. Schedule 15-2 lists the annual compound growth rates for DPS, EPS, and BVPS for the past five years. Schedule 15-3 presents the averages of the growth rates shown in Schedules 15-1 and 15-2. Schedule 16 presents the average historical

growth rates and the projected growth rates for the comparables. The projected EPS growth rates were obtained from three outside sources; I/B/E/S Inc.'s *Institutional Brokers Estimate System*, Standard & Poor's Corporation's *Earnings Guide*, and *The Value Line Investment Survey: Ratings and Reports*. The three projected EPS growth rates were averaged to develop an average projected growth rate of 4.77 percent, which was averaged with the historical growth rates to produce an average historical and projected growth rate of 4.93 percent. I estimated a range of growth of 4.50 percent to 5.10 percent, which encompasses the averages of each column shown on Schedule 16.

The next step was to calculate an expected yield for each of the comparables. The yield term of the DCF model is calculated by dividing the amount of DPS expected to be paid over the next twelve months by the market price per share of the firm's stock. Even though a strict technical application of the model requires the use of a current spot market price, I have chosen to use a monthly average market price for each of the comparables. This averaging technique is designed to minimize the effects on the dividend yield which can occur due to daily volatility in the stock market. Schedule 17 presents the average high / low stock price for the period of May 1, 2006, through August 31, 2006, for each comparable. Column 1 of Schedule 18 indicates the expected dividend for each comparable over the next 12 months as projected by *The Value Line Investment Survey: Ratings & Reports*, September 15, 2006. Column 3 of Schedule 18 shows the projected dividend yield for each of the comparables. The dividend yield for each comparable was averaged to estimate the projected dividend yield for the comparables of 3.85 percent.

As illustrated in Column 6 of Schedule 18, the average cost of common equity based on the projected dividend yield added to the average of historical and projected growth is

8.79 percent. The same schedule indicates an average cost of common equity of 8.63 percent using only projected growth rates. Giving weight to the projected growth rates and historical growth rates, my DCF proxy group cost of common equity estimation is 8.35 percent to 8.95 percent. While some witnesses have been dismissing the lower results obtained from a DCF analysis, I will explain later in my testimony why these lower results are actually consistent with the current capital market environment, in which the cost of money is low compared to recent historical standards.

Q. What analysis did you perform to determine the reasonableness of your DCF model-derived cost of common equity for the comparable company group?

A. I performed a CAPM cost-of-common-equity analysis for the comparables.

Q. What did you use for your risk-free rate?

A. For purposes of this analysis, the risk-free rate I used was the yield on Thirty year U.S. Treasury bonds. I determined the appropriate rate to be the average yield for the month of September 2006. The average yield of 4.85 percent was provided on the St. Louis Federal Reserve website.

For the second variable, beta, I researched Value Line in order to find the betas for my comparable group of companies. Schedule 19 contains the appropriate betas for the comparables.

The final term of the CAPM is the market risk premium (R_m - R_f). The market risk premium represents the expected return from holding the entire market portfolio less the expected return from holding a risk-free investment. Because I only used the CAPM as a test of reasonableness in this case, I only used risk premiums estimated based on historical differences between earned returns on stocks and earned returns on bonds. However, it is

very important to emphasize that there is much debate on the topic of estimating equity risk premiums. Consequently, the reliability of cost of common equity results obtained from performing a CAPM analysis or risk premium analysis is heavily dependent on the estimated risk premium used to determine the cost of common equity. Many times analysts will determine an implied equity risk premium by analyzing the current valuation levels of stocks. This can be done using the dividend discount model or some other derivation, such as an earnings model. Regardless of the model used, most of the estimates of implied equity risk premiums are lower than the risk premium estimates using the differences between realized returns on stocks and bonds.

Q. Are you aware of any treatises that question the use of historical realized return spreads when estimating the cost of capital?

A. Yes. In the textbook, *Investment Analysis & Portfolio Management*, seventh edition, 2003, written by Frank K. Reilly and Keith C. Brown, the authors discussed the concept of the appropriate equity risk premium. In this discussion, the authors explained the often-used method of estimating the current equity risk premium by analyzing historical spreads between stock returns and U.S. Treasury returns (the risk-free rate). This is the method that Staff has used for several years in order to test the reasonableness of its DCF recommendations. However, the authors of this textbook cite many examples of research that questions estimates based on the historical actual returns that are reported in Ibbotson and Sinquefield's yearbook, *Stocks, Bonds, Bills and Inflation*. As a result of this concern, Frank K. Reilly and Keith C. Brown used risk premium estimates based on historical returns for the high end of cost of capital estimates. Consequently, Staff's historical application of the CAPM has been on the high end of estimates made by many in the field of finance. Because

Staff had used the CAPM as a test of reasonableness for its DCF recommendation, Staff believes that its past recommendations using the DCF model have been reliable and consistent with the current low cost-of-capital environment. Staff is still recommending that the Commission adopt its DCF recommendation, but by providing the Commission with information regarding the debate about lower required equity risk premiums, Staff believes that this should make the Commission more confident about the reasonableness of Staff's ROE recommendations.

Q. Please explain your application of the CAPM using historical return differences.

A. The first risk premium used was based on the long-term, arithmetic average of historical return differences from 1926 to 2005, which was 6.50 percent. The second risk premium was based on the long-term, geometric average of historical return differences from 1926 to 2005, which was determined to be 4.90 percent. The third risk premium was based on a short-term, geometric average of returns from 1996 to 2005, which was determined to be 1.48 percent. These risk premiums were taken from Ibbotson Associates, Inc.'s *Stocks, Bonds, Bills, and Inflation: 2006 Yearbook.*

Schedule 19 presents the CAPM analysis of the comparables using historical actual return spreads to estimate the required equity risk premium. The CAPM analysis using the long-term arithmetic average risk premium, the long-term geometric average risk premium and the short-term geometric average risk premium produces estimated costs of common equity of 10.05 percent, 8.77 percent and 6.03 percent respectively. The long-term arithmetic average risk premium CAPM result would support a higher cost of common equity. The long-term geometric average risk premium CAPM result supports a cost of common equity

similar to what is currently produced in performing a DCF analysis. The short-term geometric average risk premium CAPM is not currently a good test of reasonableness for the DCF model, but it is interesting to note the recent smaller spread between earned returns on equity versus earned returns on long-term treasury bonds.

Considering the fact that the Reilly and Brown textbook advocates using geometric averages when estimating the cost of common equity for long-term asset classes, I believe that the CAPM cost of common equity estimates provide considerable support for my DCF proxy group cost of common equity estimate of 8.35 percent to 8.95 percent.

Q. Are you aware of any other influential individuals in the finance field that believe that equity risk premiums are currently quite low?

A. Yes. These experts include Warren Buffett, Jeremy Siegel and Cliff Asness. Warren Buffett is the chief executive officer of Berkshire Hathaway and is, in my opinion, one of the most respected and successful investors in the U.S. On December 20, 2001, in an interview on CNBC, Mr. Buffett indicated that "returns in the stock market should come in around an average 7-8 percent over the next ten years." He also said that he's "not finding" undervalued companies in this market, indicating that he remains watchful of valuation levels for stocks. As recently as the release of Berkshire Hathaway's 2005 Annual Report, Mr. Buffett stated that although Berkshire Hathaway owns major interests in a "number of strong, highly-profitable businesses, they are not selling at anything like bargain prices."

The other two financial experts are Dr. Asness, University of Chicago, who writes influential studies in academic journals while running the $5 billion hedge fund AQR Capital Management, and Dr. Siegel, The Wharton School of the University of Pennsylvania, whose book, *Stocks for the Long Run*, helped mold academic thinking on how equities perform over

long periods. These two experts were featured in a June 16, 2003, article in *Fortune*.[4] Although Dr. Siegel and Dr. Asness were the two main academicians featured in the article, Kenneth French of Dartmouth also urges caution when investing in today's market. Dr. French and Eugene Fama, University of Chicago, Ph.D., have published many influential stock market studies in the past two decades. Dr. Fama has been considered a possible candidate for a Nobel Prize in Economics since at least the early 1990s. While he hasn't received the Nobel Prize in Economics yet, much of Dr. Fama's research on the efficient market hypothesis has made him well-respected in the field of finance.

All of the influential individuals featured in this article have come to the conclusion that the equity risk premium, which is the additional return that investors demand over risk-free government securities, is lower than equity risk premiums suggested by long-term historical return differences. As a result of the lower equity-risk premium, they predict that the stock market as a whole can only provide 6 percent to 8 percent returns for the foreseeable future. Dr. Siegel, when speaking about total market returns, specifically states: "Better-than-average earnings, if they happen, could get us perhaps 8 percent. But 10 percent assumes earnings growth that is just too big." The fact is that well-respected investors and academicians are not predicting very high returns for the near future because of current stock valuation levels. This translates into a low-cost-of common equity environment.

Comparing my recommended proxy cost of common equity of 8.35 percent to 8.95 percent to the predictions of anywhere from 6 to 10 percent for the entire market by these well-respected individuals offers a barometer to the reasonableness of my recommendation in this case. Given that regulated utilities are less risky than the market, and therefore, investors

[4] Gene Grief, "Can Stocks Defy Gravity? That's what Wall Street wants you to believe. Don't buy it. The best minds say the market will rise, but it won't soar," *Fortune*, June 16, 2006, pp. 44 – 50.

would normally require less return than the market, my recommendation is quite reasonable considering the current capital market environment.

Q. Are you aware of any articles published by Dr. Fama and Dr. French (Fama and French), that address the use of historical return spreads when estimating required equity risk premiums?

A. Yes, in 2002 Fama and French published an article that challenged the notion that the realized return spreads between equities and risk-free securities were an accurate reflection of investors' actual required returns. [5] In this article, Fama and French maintained that the expected, i.e. required equity risk premium, for the period 1951 through 2000 was much lower than the realized equity risk premium that investors received for the same period. The authors specifically stated:

> Given the evidence that rational forecasts of long-term growth rates of dividends and earnings are not high in 2000, we conclude that the unexpected capital gains for 1951 to 2000 are largely due to a decline in the discount rate.

The decline in the discount rate is synonymous with stating that that cost of capital has decreased. Fama and French maintain that these excess returns were high enough to cause an upward bias in a risk premium estimate using the historical spread between equities and risk-free securities for the longer period of 1872 through 2000. Consequently, it is only logical to conclude that using the shorter-time period of 1926 through 2005 of Ibbotson Associates' data will be even more upwardly biased. In fact, in a December 26, 2005, article in *Fortune*[6], Roger Ibbotson agrees that he can no longer rely on the historical equity risk premium to

[5] Eugene F. Fama and Kenneth R. French, "The Equity Premium," *The Journal of Finance*, (April 2002).

[6] Justin Fox, "9% Forever?: That's economist Roger Ibbotson's forecast for stock market returns. He's been right-*very* right-in the past. So how come people think we shouldn't believe him anymore?" *Fortune*, December 26, 2005, pp. 64 -72.

predict future returns. As a result, he and Peng Chen, director of research at Ibbotson Associates, have started to estimate the market risk premium based on a supply-side earnings model.

It is also important to note that in Fama and French's study that only the required returns on equities for the 1951 through 2000 period were measured using the dividend growth model and an earnings growth model. For the longer period of 1872 through 2000, only the dividend growth model was used because of data limitations. Regardless, the authors concluded that the estimates using the dividend growth model are more precise. Based on their study, the authors stated the following:

> Based on this and other evidence, our main message is that the unconditional expected equity premium of the last 50 years is probably far below the realized premium.

This means that the realized returns on equity had exceeded the cost of the equity, which the authors believe also explain recent higher market-to-book ratios.

Q. Has any other influential financial expert made any comments concerning investors' reduced required equity risk premiums?

A. Yes. In an August 26, 2005, symposium sponsored by the Federal Reserve Bank of Kansas City at Jackson Hole, Wyoming, Alan Greenspan, Chairman of The Federal Reserve at the time, stated the following about investors' appetite for risk; i.e. lower required equity risk premiums:

> Whether the currently elevated level of the wealth-to-income ratio will be sustained in the longer run remains to be seen. But arguably, the growing stability of the world economy over the past decade may have encouraged investors to accept increasingly lower levels of compensation for risk. They are exhibiting a seeming willingness to project stability and commit over an ever more extended time horizon.
>
> The lowered risk premiums--the apparent consequence of a long period of economic stability--coupled with greater productivity growth have

> propelled asset prices higher. The rising prices of stocks, bonds and, more recently, of homes, have engendered a large increase in the market value of claims which, when converted to cash, are a source of purchasing power. Financial intermediaries, of course, routinely convert capital gains in stocks, bonds, and homes into cash for businesses and households to facilitate purchase transactions. The conversions have been markedly facilitated by the financial innovation that has greatly reduced the cost of such transactions.
>
> Thus, this vast increase in the market value of asset claims is in part the indirect result of investors accepting lower compensation for risk. Such an increase in market value is too often viewed by market participants as structural and permanent. To some extent, those higher values may be reflecting the increased flexibility and resilience of our economy. But what they perceive as newly abundant liquidity can readily disappear. Any onset of increased investor caution elevates risk premiums and, as a consequence, lowers asset values and promotes the liquidation of the debt that supported higher asset prices. This is the reason that history has not dealt kindly with the aftermath of protracted periods of low risk premiums.

Although Mr. Greenspan does not attempt to quantify investors' lower required equity risk premiums, it is clear that his views about investors not requiring much of a risk premium to invest in stocks, rather than risk-free treasuries, is similar to that of the other influential individuals in the field of finance that I have already mentioned. This provides further support for the lower results that are being achieved by a reasonable application of the DCF model. The lower results are not because the DCF model is unreliable; it is because the cost of common equity is lower. In fact, because the DCF model incorporates the price of the subject companies' stocks, a reasonable application of this model will directly reflect lower costs of common equity.

Q. Have you considered other evidence to test the reasonableness of your recommendation?

A. Yes. Page F-41 of Southern Union's 2005 Annual Report indicated an expected return of 9.00 percent on pension assets. Staff requested the supporting information

for this overall return in Staff Data Request No. 0182. In response to this data request, Southern Union provided the Financial Accounting Standard No. 132 Disclosure Exhibit provided by its actuary. The initial response to Staff Data Request No. 0182 did not provide expected returns for the various asset classes, but after further pursuit by Staff, the actuary provided the expected return on the general asset classes. The actuary's long-term expected return on equity securities was 10.0 percent. The actuary stated that it didn't break equity securities into further subsets, such as the S&P 500 or small capitalization stocks, but Staff's review of other utility companies' expected pension returns has shown that the expected return on the S&P 500 is usually below 10.0 percent. Considering that utility companies are generally less risky than the S&P 500, this provides a test of the reasonableness of my recommendation in this case.

Q. Did the Commission rely in part on authorized ROEs in other jurisdictions for its ROE decisions in the Report and Order in the MGE rate case, Case No. GR-2004-0209 and the Empire rate case, Case No. ER-2004-0570?

A. Yes. The Commission cited the average natural gas utility authorized ROEs for 2002, 2003 and the first quarter of 2004 in its decision in the last MGE rate case. The Commission stated that this information was important because "That is the market in which Southern Union will be seeking to raise capital." The Commission also cited the average electric utility authorized ROE of 11.00 percent for the first quarter of 2004 in its decision in Case No. ER-2004-0570.

Q. What were the average authorized ROEs for natural gas utilities since the first quarter of 2004?

A. According to Regulatory Research Associates (RRA), the average authorized ROE for natural gas utilities in 2004 was 10.59 percent based on 20 decisions for the entire year (first quarter – 11.10 percent based on 4 decisions; second quarter – 10.25 percent based on 2 decisions; third quarter – 10.37 percent based on 8 decisions; fourth quarter – 10.66 percent based on 6 decisions).

The average authorized ROE for natural gas utilities for 2005 was 10.46 percent based on 26 decisions (first quarter – 10.65 percent based on 2 decisions; second quarter – 10.54 percent based on 5 decisions; third quarter – 10.47 percent based on 5 decisions; fourth quarter – 10.40 percent based on 14 decisions).

The average authorized ROE for the first three quarters of 2006 was 10.49 percent based on nine decisions (first quarter – 10.63 percent based on 6 decisions; second quarter – 10.50 percent based on 2 decisions; third quarter – 9.60 percent based on 1 decision).

Q. Did RRA also provide overall rate of return (ROR) authorizations for the same time period?

A. Yes, but RRA did not break out the 2004 decisions into quarters. However 2005 and 2006 were broken out by each quarter.

Q. Please provide the information on ROR as well.

A. The average authorized ROR for natural gas utilities in 2004 was 8.34 percent based on 21 decisions for the entire year. The average authorized ROR for natural gas utilities for 2005 was 8.25 percent based on 29 decisions (first quarter – 8.19 percent based on 3 decisions; second quarter – 8.17 percent based on 5 decisions; third quarter – 8.15 percent based on 6 decisions; fourth quarter – 8.33 percent based on 15 decisions). The average authorized ROR for natural gas utilities for 2006 was 8.35 percent based on 8 decisions (first

quarter – 8.62 percent based on 6 decisions; second quarter – 7.98 percent based on 1 decision; third quarter – 7.05 percent based on 1 decision).

Q. Have you researched all of the cases mentioned above to determine the specifics of the cases?

A. No.

Q. For purposes of this proceeding, did you perform a "risk premium" analysis to test the reasonableness of your ROE recommendations?

A. No. Unlike the last MGE rate case, I did not perform the type of "risk premium" analysis that the Financial Analysis Department had performed in the past. The reason I eliminated this analysis was because it wasn't necessarily an indicator of a company's cost of common equity, because it was not a market-based model. It relied on actual book earned returns on common equity for approximately the most recent ten years for the proxy companies. The actual earned book return on common equity may not be reflective of a company's cost of common equity. For example, in Case No. EC-2002-1, if Staff had just relied on AmerenUE's past earned returns on common equity to determine AmerenUE's cost of common equity, then obviously AmerenUE would have continued to earn more than the cost of common equity reflected in Ameren's stock price.

Q. If you believed that the risk-premium analysis you were performing was not necessarily reflective of the subject utility company's cost of common equity, then why did you continue to perform such an analysis?

A. I only used it in prior rate cases to test the reasonableness of my DCF recommended cost of common equity. Now that the Commission appears to be giving weight to other models, I believe it is important for the Commission to have all of the information

about the differences in professional opinions about the appropriate inputs for a "risk premium" analysis.

Q. Please summarize your cost of common equity analysis to this point.

A. I have performed a DCF and CAPM cost of common equity analysis on a group of six comparable companies. The results are summarized below.

	DCF	CAPM
Comparable Companies	8.35% - 8.95%	10.05%; 8.77%; 6.03%

Q. Should there be any adjustments to the comparable group cost of common equity before it is applied to MGE?

A. Yes. Because the average credit rating of the comparable companies is an A and the credit rating of Southern Union is BBB, I increased the lower end and the upper end of the range by 30 basis points to reflect the higher risk implied by this credit rating differential. The average spread between A-rated utility bonds and BBB-rated utility bonds is usually around 30 basis points. This equates into a 10 basis point differential for each notch within the credit rating and, because Southern Union's credit rating is a full three notches below the average credit rating of the comparable companies, it is appropriate to increase the proxy group cost of common equity estimate by 30 basis points.

Q. Based on the analysis you performed, what is your recommended return on common equity in this proceeding?

A. I am recommending a return on common equity in the range of 8.65 percent to 9.25 percent based on the results of my comparable-company-DCF analysis and my 30 basis point adjustment.

RATE OF RETURN FOR MGE

Q. Please explain how the returns developed for each capital component are used in the ratemaking approach you have adopted for MGE.

A. The cost of service ratemaking method was adopted in this case to develop the public utility's revenue requirement. The cost of service (revenue requirement) is based on the following components: operating costs, rate base and a return allowed on the rate base (see Schedule 21).

It is my responsibility to calculate and recommend a rate of return that should be authorized on the Missouri jurisdictional natural gas utility rate base of MGE. Under the cost of service ratemaking approach, a weighted cost of capital in the range of 8.01 to 8.23 percent was developed for MGE's natural gas utility operations (see Schedule 22). This rate was calculated by applying an embedded cost of long-term debt of 7.70 percent, an embedded cost of preferred stock of 7.76 percent and a cost of common equity range of 8.65 percent to 9.25 percent to a capital structure consisting of 57.57 percent long-term debt, 5.00 percent preferred stock, 1.11 percent short-term debt and 36.31 percent common equity. Therefore, from a financial risk/return prospective, as I suggested earlier, I am recommending that MGE's electric utility operations be allowed to earn a return on its original cost rate base in the range of 8.01 percent to 8.23 percent.

Through my analysis, I believe that I have developed a fair and reasonable return, which, when applied to MGE's jurisdictional rate base, will allow MGE the opportunity to earn the revenue requirement developed in this rate case.

Q. How does your rate of return (ROR) recommendation compare to the Commission's authorized ROR in the last MGE rate case?

A. In the last MGE rate case the Commission did not specify an overall authorized ROR. However, the Commission did make decisions on the individual costs of capital and the appropriate capital structure. In its Report & Order the Commission decided the appropriate capital structure for determining a fair and reasonable ROR should be based on the following ratios: 29.99 percent common equity, 6.40 percent preferred stock and 63.61 percent long-term debt. The Commission decided that the appropriate costs of the capital components were as follows: long-term debt – 7.4155 percent, common stock – 10.50 percent and preferred stock – 7.758 percent. When I applied the costs of the capital to their corresponding ratios, I arrived at an authorized ROR of 8.36 percent.

The midpoint of my recommended ROE is 155 basis points (1.55%) lower than what the Commission authorized in the last MGE rate case. However, the midpoint of my recommended ROR is only 24 basis points lower than what the Commission authorized in the last MGE rate case.

Q. Does this conclude your prepared direct testimony?

A. Yes, it does.

CASE PROCEEDING PARTICIPATION

DAVID MURRAY

Date Filed	Issue	Case Number	Exhibit	Case Name
1/31/2001	Rate of Return Capital Structure	TC2001402	Direct	Ozark Telephone Company
2/28/2001	Rate of Return Capital Structure	TR2001344	Direct	Northeast Missouri Rural Telephone Company
3/1/2001	Rate of Return Capital Structure	TT2001328	Rebuttal	Oregon Farmers Mutual Telephone Company
4/19/2001	Rate of Return Capital Structure	GR2001292	Direct	Missouri Gas Energy, A Division of Southern Union Company
5/22/2001	Rate of Return Capital Structure	GR2001292	Rebuttal	Missouri Gas Energy, A Division of Southern Union Company
12/6/2001	Rate of Return Capital Structure	ER2001672	Direct	UtiliCorp United Inc. dba Missouri Public Service
12/6/2001	Rate of Return Capital Structure	EC2002265	Direct	UtiliCorp United Inc. dba Missouri Public Service
1/8/2002	Rate of Return Capital Structure	ER2001672	Rebuttal	UtiliCorp United Inc. dba Missouri Public Service
1/8/2002	Rate of Return Capital Structure	EC2002265	Rebuttal	UtiliCorp United Inc. dba Missouri Public Service
1/22/2002	Rate of Return Capital Structure	EC2002265	Surrebuttal	UtiliCorp United Inc. dba Missouri Public Service
1/22/2002	Rate of Return Capital Structure	ER2001265	Surrebuttal	UtiliCorp United Inc. dba Missouri Public Service
8/6/2002	Rate of Return Capital Structure	TC20021076	Direct	BPS Telephone Company
8/16/2002	Rate of Return Capital Structure	ER2002424	Direct	The Empire District Electric Company
9/24/2002	Rate of Return Capital Structure	ER2002424	Rebuttal	The Empire District Electric Company
10/16/2002	Rate of Return Capital Structure	ER2002424	Surrebuttal	The Empire District Electric Company
3/17/2003	Insulation	GM20030238	Rebuttal	Southern Union Co. dba Missouri Gas Energy
10/3/2003	Rate of Return Capital Structure	WC20040168	Direct	Missouri-American Water Company

Date Filed	Issue	Case Number	Exhibit	Case Name
10/3/2003	Rate of Return Capital Structure	WR20030500	Direct	Missouri-American Water Company
11/10/2003	Rate of Return Capital Structure	WR20030500	Rebuttal	Missouri-American Water Company
11/10/2003	Rate of Return Capital Structure	WC20040168	Rebuttal	Missouri-American Water Company
12/5/2003	Rate of Return Capital Structure	WC20040168	Surrebuttal	Missouri-American Water Co
12/5/2003	Rate of Return Capital Structure	WR20030500	Surrebuttal	Missouri-American Water Co
12/9/2003	Rate of Return Capital Structure	ER20040034	Direct	Aquila, Inc.
12/9/2003	Rate of Return Capital Structure	HR20040024	Direct	Aquila, Inc.
12/19/2003	Rate of Return Capital Structure	ST20030562	Direct	Osage Water Company
12/19/2003	Rate of Return Capital Structure	WT20030563	Direct	Osage Water Company
1/6/2004	Rate of Return Capital Structure	GR20040072	Direct	Aquila, Inc.
1/9/2004	Rate of Return Capital Structure	WT20030563	Rebuttal	Osage Water Company
1/9/2004	Rate of Return Capital Structure	ST20030562	Rebuttal	Osage Water Company
1/26/2004	Rate of Return Capital Structure	HR20040024	Rebuttal	Aquila, Inc. dba Aquila Networks-MPS and Aquila Networks L&P
1/26/2004	Rate of Return Capital Structure	ER20040034	Rebuttal	Aquila, Inc. dba Aquila Networks-MPS and Aquila Networks L&P
2/13/2004	Rate of Return Capital Structure	GR20040072	Rebuttal	Aquila, Inc. dba Aquila Networks-MPS and Aquila Networks-L&P
2/13/2004	Rate of Return Capital Structure	ER20040034	Surrebuttal	Aquila, Inc. dba Aquila Networks-MPS and Aquila Networks-L&P
2/13/2004	Rate of Return Capital Structure	HR20040024	Surrebuttal	Aquila, Inc. dba Aquila Networks-MPS and Aquila Networks-L&P
3/11/2004	Rate of Return Capital Structure	IR20040272	Direct	Fidelity Telephone Company

Date Filed	Issue	Case Number	Exhibit	Case Name
4/15/2004	Rate of Return Capital Structure	GR20040209	Direct	Missouri Gas Energy
5/24/04	Rate of Return Capital Structure	GR20040209	Rebuttal	Missouri Gas Energy
6/14/04	Rate of Return Capital Structure	GR20040209	Surrebuttal	Missouri Gas Energy
7/19/04	Rate of Return Capital Structure	GR20040209	True-Up Direct	Missouri Gas Energy
9/20/04	Rate of Return	ER20040570	Direct	Empire District Electric Co.
11/04/04	Rate of Return Capital Structure	ER20040570	Rebuttal	Empire District Electric Co.
11/24/04	Rate of Return Capital Structure	ER20040570	Surrebuttal	Empire District Electric Co.
10/14/05	Rate of Return Capital Structure	ER20050436	Direct	Aquila, Inc. dba Aquila Networks-MPS and Aquila Networks-L&P
11/18/05	Rate of Return Capital Structure	ER20050436	Rebuttal	Aquila, Inc. dba Aquila Networks-MPS and Aquila Networks-L&P
12/13/05	Rate of Return Capital Structure	ER20050436	Surrebuttal	Aquila, Inc. dba Aquila Networks-MPS and Aquila Networks-L&P

DAVID MURRAY

TESTIMONY SCHEDULES A THROUGH E

MISSOURI GAS ENERGY

CASE NO. GR-2006-0422

Q. Is the recommendation of the cost of common equity consistent with a fair rate of return on common equity?

A. Yes. It is generally recognized that authorizing an allowed return on common equity based on a utility's cost of common equity is consistent with a fair rate of return. It is for this very reason that the discounted cash flow (DCF) model is widely recognized as an appropriate model to utilize in arriving at a reasonable recommended return on equity that should be authorized for a utility. The concept underlying the DCF model is to determine the cost of common equity capital to the utility, which reflects the current economic and capital market environment. For example, a company may achieve a return on common equity that is higher than its cost of common equity. This situation will tend to increase the share price. However, this does not mean that this past achieved return is the barometer for what would be a fair authorized return in the context of a rate case. It is the lower cost of capital that should be recognized as a fair authorized return. If a utility continues to be allowed a return on common equity that is not reflective of today's current low-cost-of-capital environment, then this will result in the possibility of excessive returns.

The authorized return should provide a fair and reasonable return to the investors of the company, while ensuring that ratepayers do not support excessive earnings that could result from the utility's monopolistic powers. However, this fair and reasonable rate does not necessarily guarantee revenues or the continued financial integrity of the utility.

It should be noted that a reasonable return may vary over time as economic conditions, such as the level of interest rates, and business conditions change. Therefore, the past, present and projected economic and business conditions must be analyzed in order to calculate a fair and reasonable rate of return.

Q. Please discuss the historical economic conditions in which MGE has operated.

A. One of the most commonly accepted indicators of economic conditions is the discount rate set by the Federal Reserve Board (Federal Reserve or Fed). The Federal Reserve tries to achieve its monetary policy objectives by controlling the discount rate (the interest rate charged by the Federal Reserve for loans of reserves to depository institutions) and the Federal (Fed) Funds Rate (the overnight lending rate between banks). However, recently the Fed Funds Rate has become the primary means for the Federal Reserve to achieve its monetary policy, and the discount rate has become more of a symbolic interest rate. This explains why the Federal Reserve's decisions now focus on the Fed Funds rate and this is reflected in the discussion of interest rates. It should also be noted that on January 9, 2003, the Federal Reserve changed the administration of the discount window. Under the changed administration of the discount window an eligible institution does not need to exhaust other sources of funds before coming to the discount window, nor are there restrictions on the purposes for which the borrower can use primary credit. This explains why the discount rate jumped from 0.75 percent to 2.25 percent on January 9, 2003, when the Fed Funds rate didn't change. Therefore, discount rates before January 9, 2003, are not comparable to discount rates after January 9.

At the end of 1982, the U.S. economy was in the early stages of an economic expansion, following the longest post-World War II recession. This economic expansion began when the Federal Reserve reduced the discount rate seven times in the second half of 1982 in an attempt to stimulate the economy. This reduction in the discount rate led to a reduction in the prime interest rate (the rate charged by banks on short-term loans to borrowers with high credit ratings) from 16.50 percent in June 1982, to 11.50 percent in

December 1982. The economic expansion continued for approximately eight years until July 1990, when the economy entered into a recession.

In December 1990, the Federal Reserve responded to the slumping economy by lowering the discount rate to 6.50 percent (see Schedules 2-1 and 2-2). Over the next year-and-a-half, the Federal Reserve lowered the discount rate another six times to a low of 3.00 percent, which had the effect of lowering the prime interest rate to 6.00 percent (see Schedules 3-1 and 3-2).

In 1993, perhaps the most important factor for the U.S. economy was the passage of the North American Free Trade Agreement (NAFTA). NAFTA created a free trade zone consisting of the United States, Canada and Mexico. The rate of economic growth for the fourth quarter of 1993 was one the Federal Reserve believed could not be sustained without experiencing higher inflation. In the first quarter of 1994, the Federal Reserve took steps to try to restrict the economy by increasing interest rates. As a result, on March 24, 1994, the prime interest rate increased to 6.25 percent. On April 18, 1994, the Federal Reserve announced its intention to raise its targeted interest rates, which resulted in the prime interest rate increasing to 6.75 percent. The Federal Reserve took action again on May 17, 1994, by raising the discount rate to 3.50 percent. The Federal Reserve took three additional restrictive monetary actions, with the last occurring on February 1, 1995. These actions raised the discount rate to 5.25 percent, and in turn, banks raised the prime interest rate to 9.00 percent.

The Federal Reserve then reversed its policy in late 1995 by lowering its target for the Fed Funds Rate by 0.25 percentage points on two different occasions. This had the effect of lowering the prime interest rate to 8.50 percent. On January 31, 1996, the Federal Reserve lowered the discount rate to a rate of 5.00 percent.

The actions of the Federal Reserve from 1996 through 2000 were primarily focused on keeping the level of inflation under control, and it was successful. The inflation rate, as measured by the *Consumer Price Index - All Urban Consumers* (CPI), had never been higher than 3.70 percent during this period. The increase in CPI stood at 3.80 percent for the twelve months ending August 31, 2006 (see Schedule 6).

The unemployment rate was 4.60 percent as of September 2006 (see Schedule 6), which is fairly low by historical standards. A lower unemployment rate usually provides the Fed with some flexibility to raise the Fed Funds rate if it believes it is needed to contain inflation.

The combination of low inflation and low unemployment had led to a prosperous economy from 1993 through 2000 as evidenced by the fact that real gross domestic product (GDP) of the United States increased every quarter during this period. However, GDP actually declined for the first three quarters of 2001, indicating there was a contraction in the economy during these three quarters. This contraction of GDP for more than two quarters in a row meets the textbook definition of a recession. According to the National Bureau of Economic Research, the recession began in March of 2001 and ended eight months later. Since the recession ended, GDP had been low up until the second quarter of 2003, but since the second quarter of 2003, GDP has been fairly healthy. GDP grew at a rate of 2.60 percent for the second quarter of 2006 (see Schedule 6).

Q. Please explain the changes in utility bond yields and Thirty-year U.S. Treasury yields in a little more detail.

A. Cost of capital changes for utilities are closely reflected in the yields on public utility bonds and yields on Thirty-year U.S. Treasury bonds (see attached Schedules 5-1 and

5-2). Schedule 5-3, attached to this direct testimony, shows how closely the Mergent's "Public Utility Bond Yields" have followed the yields of Thirty-year U.S. Treasury bonds during the period from 1980 to the present. The average spread for this period between these two composite indices has been 151 basis points, with the spread ranging from a low of 80 basis points to a high of 304 basis points (see attached Schedule 5-4). Although there may be times when utility bond yield changes may lag the yield changes in the Thirty-year U.S. Treasury bond, these spread parameters show just how tightly correlated utilities' cost of capital is with the level of interest rates on long-term treasuries. This fact should be considered when determining the reasonableness of rate of return recommendations.

Q. What are the inflationary estimations and expectations for 2006 through 2008?

A. *The Value Line Investment Survey: Selection & Opinion*, August 25, 2006, estimates inflation to be 3.4 percent for 2006, 2.5 percent for 2007 and 2.3 percent for 2008. The Congressional Budget Office, *The Budget and Economic Outlook: Fiscal Years 2007-2016,* issued January 2006, states that inflation is expected to be 2.8 percent for 2006, 2.2 percent for 2007 and 2.2 percent for 2008 (see attached Schedule 6).

Q. What are the interest rate estimates and forecasts for 2006, 2007 and 2008?

A. Short-term interest rates, those measured by three-month U.S. Treasury Bills, are estimated to be 4.9 percent in 2006, 5.0 percent in 2007 and 4.8 percent in 2008 according to Value Line's predictions. Value Line expects long-term treasury bond rates to average 5.1 percent in 2006, 5.4 percent in 2007 and 5.5 percent in 2008.

The current rate for September 2006 was 4.81 percent for three-month U.S. Treasury Bills, as noted on the St. Louis Federal Reserve website, http://www.stls.frb.org/fred/data/rates.html. The rate for Thirty-Year U.S. Treasury Bonds was 4.85 percent as of September 2006, as noted on the St. Louis Federal Reserve website at http://research.stlouisfed.org/fred2/data/GS30.txt.

Q. What are the growth estimates and expectations for real GDP?

A. GDP is a benchmark utilized by the Commerce Department to measure economic growth within the U.S. borders. Real GDP is measured by the actual GDP, adjusted for inflation. Value Line stated that real GDP growth is expected to increase by 3.4 percent in 2006, 2.6 percent in 2007 and 3.1 percent in 2008. The Congressional Budget Office, *The Budget and Economic Outlook: Fiscal Years 2007-2016*, stated that real GDP is expected to

increase by 3.6 percent in 2006, 3.4 percent in 2007 and 3.1 percent in 2008 (see attached Schedule 6).

Q. Please summarize the expectations of the economic conditions for the next few years.

A. In summary, when combining the previously mentioned sources, inflation is expected to be in the range of 2.2 to 3.4 percent, increase in real GDP in the range of 2.6 to 3.6 percent and long-term interest rates are expected to range from 5.1 to 5.5 percent.

The Value Line Investment Survey: Selection & Opinion, October 6, 2006, stated the following in its Economic and Stock Market Commentary:

> **A soft housing market is putting added strain on an already slowing economy.** True, the overall economic outlook-except for housing-remains mixed. For example, a recent survey affirmed that consumer confidence had rebounded nicely, while nominal increases were recorded in personal income and spending. Durable goods orders fell in August, however, with particular softness being apparent in machinery and electronic products. There is little that seems mixed in the overall housing picture, though, as recent data show declines in housing starts and existing home sales. To be sure, new home sales did rise during August, but the downward revisions for June and July easily offset the aforementioned rise. More worrisome is the fact that home prices are down for the first time in a decade. Should prices fall further, a negative wealth effect would come into play perhaps causing homeowners to rein in their spending across a range of consumer markets.
>
> **There's an increasing chance the Federal Reserve is finished raising interest rates.** Although there is still talk at the Fed about higher inflation being more of a threat than slowing economic growth, we think such talk will be heard less as the economy slows and the consumption of oil and other commodities eases as well. In fact, the Fed, which has held rates steady for the past two FOMC meetings, could vote to relax the credit reins by this spring, or sooner, if the economy, which expanded by a revised 2.6% in the second quarter, fails to grow by more than 2% over the next six to nine months.
>
> **A recession is still unlikely, in our opinion.** Our optimism on this count reflects a sense that the Fed will vote to reduce interest rates in the next few months, a belief that lower oil prices will spur the

consumer, and a feeling that the drop in home prices may be signaling that sellers are now getting the dose of realism needed to get this key sector moving again. Our sense is that the economy will bend, but not break, in the months ahead.

Investors are cheering the bulls on. Worries about the global outlook aside, stocks are back in favor, with the leading averages showing gains for the year to date, in part, on hopes for a relaxation in Fed policies.

S&P stated the following in the September 27, 2006, issue of *The Outlook*:

Few investors were surprised on Wednesday, when Fed Chairman Ben Bernanke decided to leave short-term interest rates unchanged at 5.25%.

Although recent inflation data have been benign, the overall economic picture is far from clear. Nevertheless, S&P Economics believes the Fed is through tightening, and we look for the first rate decrease by the middle of 2007, as members of the Fed collect more data suggesting that economic growth is slowing.

S&P Equity Strategy advises emphasizing high-quality stocks and/or those that offer solid dividend yields.

There have been eight interest rate plateaus -- periods between the last rate hike and the first rate cut -- since 1974, each lasting seven months, on average. During the plateau periods, the S&P 500 index has gained an average of 3%, rising four times and falling four times.

But how have the individual sectors fared? S&P Equity Strategy studied each of the eight periods to determine how industries within each sector performed on an evenly weighted basis.

This analysis shows that the sectors that have gains outpacing those of the S&P 500 -- and that post those gains more than half of the time -- are consumer staples, financial services, health care, telecommunications, and utilities. Not surprisingly, these are the sectors that boast either a large number of high-quality names or stocks that have substantial dividend yields, or both.

Of course, S&P Equity Strategy does not only consider historical performance when making sector recommendations. After all, as we often note, "Past performance is no guarantee of future results." We also consider market fundamentals, the economic outlook, and technical factors.

Q. Please describe the DCF model.

A. The DCF model is a market-oriented approach for deriving the cost of common equity. The cost of common equity calculated from the DCF model is inherently capable of attracting capital. This results from the theory that security prices adjust continually over time, so that an equilibrium price exists and the stock is neither undervalued nor overvalued. It can also be stated that stock prices continually fluctuate to reflect the required and expected return for the investor.

The constant-growth form of the DCF model was used in this analysis. This model relies upon the fact that a company's common stock price is dependent upon the expected cash dividends and upon cash flows received through capital gains or losses that result from stock price changes. The interest rate which discounts the sum of the future expected cash flows to the current market price of the common stock is the calculated cost of common equity. This can be expressed algebraically as:

$$\text{Present Price} = \underset{\text{Discounted by k}}{\text{Expected Dividends}} + \underset{\text{Discounted by k}}{\text{Expected Price in 1 year}} \qquad (1)$$

where k equals the cost of equity. Since the expected price of a stock in one year is equal to the present price multiplied by one plus the growth rate, equation (1) can be restated as:

$$\text{Present Price} = \frac{\text{Expected Dividends}}{(1+k)} + \frac{\text{Present Price } (1+g)}{(1+k)} \qquad (2)$$

where g equals the growth rate and k equals the cost of equity. Letting the present price equal P_0 and expected dividends equal D_1, the equation appears as:

$$P_0 = \frac{D_1}{(1+k)} + \frac{P_0(1+g)}{(1+k)} \qquad (3)$$

The cost of equity equation may also be algebraically represented as:

$$k = \frac{D_1}{P_0} + g \qquad (4)$$

Thus, the cost of common stock equity, k, is equal to the expected dividend yield (D_1/P_0) plus the expected growth in dividends (g) continuously summed into the future. The growth in dividends and implied growth in earnings will be reflected in the current price. Therefore, this model also recognizes the potential of capital gains or losses associated with owning a share of common stock.

The discounted cash flow method is a continuous stock valuation model. The DCF theory is based on the following assumptions:

1. Market equilibrium;
2. Perpetual life of the company;
3. Constant payout ratio;
4. Payout of less than 100% earnings;
5. Constant price/earnings ratio;
6. Constant growth in cash dividends;
7. Stability in interest rates over time;
8. Stability in required rates of return over time; and
9. Stability in earned returns over time.

Flowing from these, it is further assumed that an investor's growth horizon is unlimited and that earnings, book values and market prices grow hand-in-hand. Although the entire list of the above assumptions is rarely met, the DCF model is a reasonable working model describing an actual investor's expectations and resulting behaviors.

Q. Please describe the CAPM.

A. The CAPM describes the relationship between a security's investment risk and its market rate of return. This relationship identifies the rate of return which investors expect a security to earn so that its market return is comparable with the market returns earned by other securities that have similar risk. The general form of the CAPM is as follows:

$$k = R_f + \beta (R_m - R_f)$$

where:

k = the expected return on equity for a specific security;
R_f = the risk-free rate;
β = beta; and
$R_m - R_f$ = the market risk premium.

The first term of the CAPM is the risk-free rate (Rf). The risk-free rate reflects the level of return that can be achieved without accepting any risk. In reality, there is no such risk-free asset, but it is generally represented by U.S. Treasury securities.

The second term of the CAPM is beta (β). Beta is an indicator of a security's investment risk. It represents the relative movement and relative risk between a particular security and the market as a whole (where beta for the market equals 1.00). Securities with betas greater than 1.00 exhibit greater volatility than do securities with betas less than 1.00. This causes a higher beta security to be less desirable to a risk-averse investor and therefore requires a higher return in order to attract investor capital away from a lower beta security.

The final term of the CAPM is the market risk premium ($R_m - R_f$). The market risk premium represents the expected return from holding the entire market portfolio less the expected return from holding a risk-free investment.

AN ANALYSIS OF THE COST OF CAPITAL

FOR

MISSOURI GAS ENERGY

CASE NO. GR-2006-0422

SCHEDULES

BY

DAVID MURRAY

UTILITY SERVICES DIVISION

MISSOURI PUBLIC SERVICE COMMISSION

OCOTBER 2006

List of Schedules

Federal Reserve Discount Rate Changes and Federal Reserve Funds Rate Changes

Date	Federal Reserve Discount Rate	Federal Reserve Funds Rate
07/19/82	11.50%	
07/31/82	11.00%	
08/14/82	10.50%	
08/26/82	10.00%	
10/10/82	9.50%	
11/20/82	9.00%	
12/14/82	8.50%	
01/01/83	8.50%	
12/31/83	8.50%	
04/09/84	9.00%	
11/21/84	8.50%	
12/24/84	8.00%	
05/20/85	7.50%	
03/07/86	7.00%	
04/21/86	6.50%	
07/11/86	6.00%	
08/21/86	5.50%	
09/04/87	6.00%	
08/09/88	6.50%	
02/24/89	7.00%	
07/13/90		8.00% *
10/29/90		7.75%
11/13/90		7.50%
12/07/90		7.25%
12/18/90		7.00%
12/19/90	6.50%	
01/09/91		6.75%
02/01/91	6.00%	6.25%
03/08/91		6.00%
04/30/91	5.50%	5.75%
08/06/91		5.50%
09/13/91	5.00%	5.25%
10/31/91		5.00%
11/06/91	4.50%	4.75%
12/06/91		4.50%
12/20/91	3.50%	4.00%
04/09/92		3.75%
07/02/92	3.00%	3.25%
09/04/92		3.00%
01/01/93		
12/31/93	No Changes	No Changes
02/04/94		3.25%
03/22/94		3.50%
04/18/94		3.75%
05/17/94	3.50%	4.25%
08/16/94	4.00%	4.75%
11/15/94	4.75%	5.50%
02/01/95	5.25%	6.00%
07/06/95		5.75%
12/19/95		5.50%

Date	Federal Reserve Discount Rate	Federal Reserve Funds Rate
01/31/96	5.00%	5.25%
03/25/97		5.50%
12/12/97	5.00%	
01/09/98	5.00%	
03/06/98	5.00%	
09/29/98		5.25%
10/15/98	4.75%	5.00%
11/17/98	4.50%	4.75%
06/30/99	4.50%	5.00%
08/24/99	4.75%	5.25%
11/16/99	5.00%	5.50%
02/02/00	5.25%	5.75%
03/21/00	5.50%	6.00%
05/19/00	6.00%	6.50%
01/03/01	5.75%	6.00%
01/04/01	5.50%	6.00%
01/31/01	5.00%	5.50%
03/20/01	4.50%	5.00%
04/18/01	4.00%	4.50%
05/15/01	3.50%	4.00%
06/27/01	3.25%	3.75%
08/21/01	3.00%	3.50%
09/17/01	2.50%	3.00%
10/02/01	2.00%	2.50%
11/06/01	1.50%	2.00%
12/11/01	1.25%	1.75%
11/06/02	0.75%	1.25%
01/09/03	2.25%**	1.25%
06/25/03	2.00%	1.00%
06/30/04	2.25%	1.25%
08/10/04	2.50%	1.50%
09/21/04	2.75%	1.75%
11/10/04	3.00%	2.00%
12/14/04	3.25%	2.25%
02/02/05	3.50%	2.50%
03/22/05	3.75%	2.75%
05/03/05	4.00%	3.00%
06/30/05	4.25%	3.25%
08/09/05	4.50%	3.50%
09/20/05	4.75%	3.75%
11/01/05	5.00%	4.00%
12/13/05	5.25%	4.25%
01/31/06	5.50%	4.50%
03/28/06	5.75%	4.75%
05/10/06	6.00%	5.00%
06/29/06	6.25%	5.25%

* Staff began tracking the Federal Funds Rate.
**Revised discount window program begins. Reflects rate on primary credit. This revised discount window policy results in incomparability of the discount rates after January 9, 2003 to discount rates before January 9, 2003.

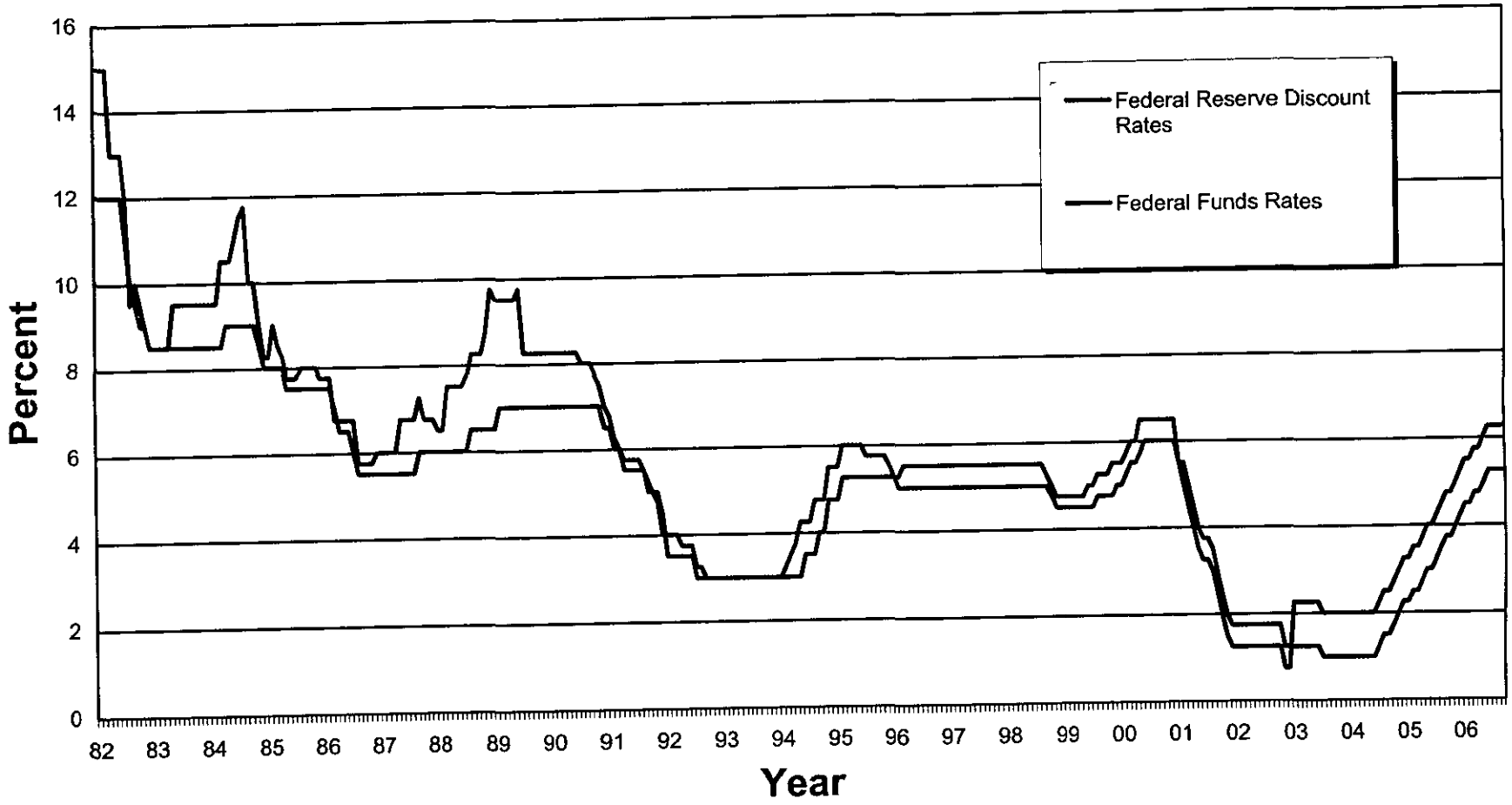
Source:
Federal Reserve Discount rate http://www.newyorkfed.org/markets/statistics/dlyrates/fedrate.html
Federal Reserve Funds rate http://www.newyorkfed.org/markets/statistics/dlyrates/fedrate.html

Note: Interest rates as of December 31 for each year are underlined.

MISSOURI GAS ENERGY
GR-2006-0422

Federal Reserve Discount Rates and Federal Funds Rates

1982 - 2006



SCHEDULE 2-2

MISSOURI GAS ENERGY
CASE NO. GR-2006-0422

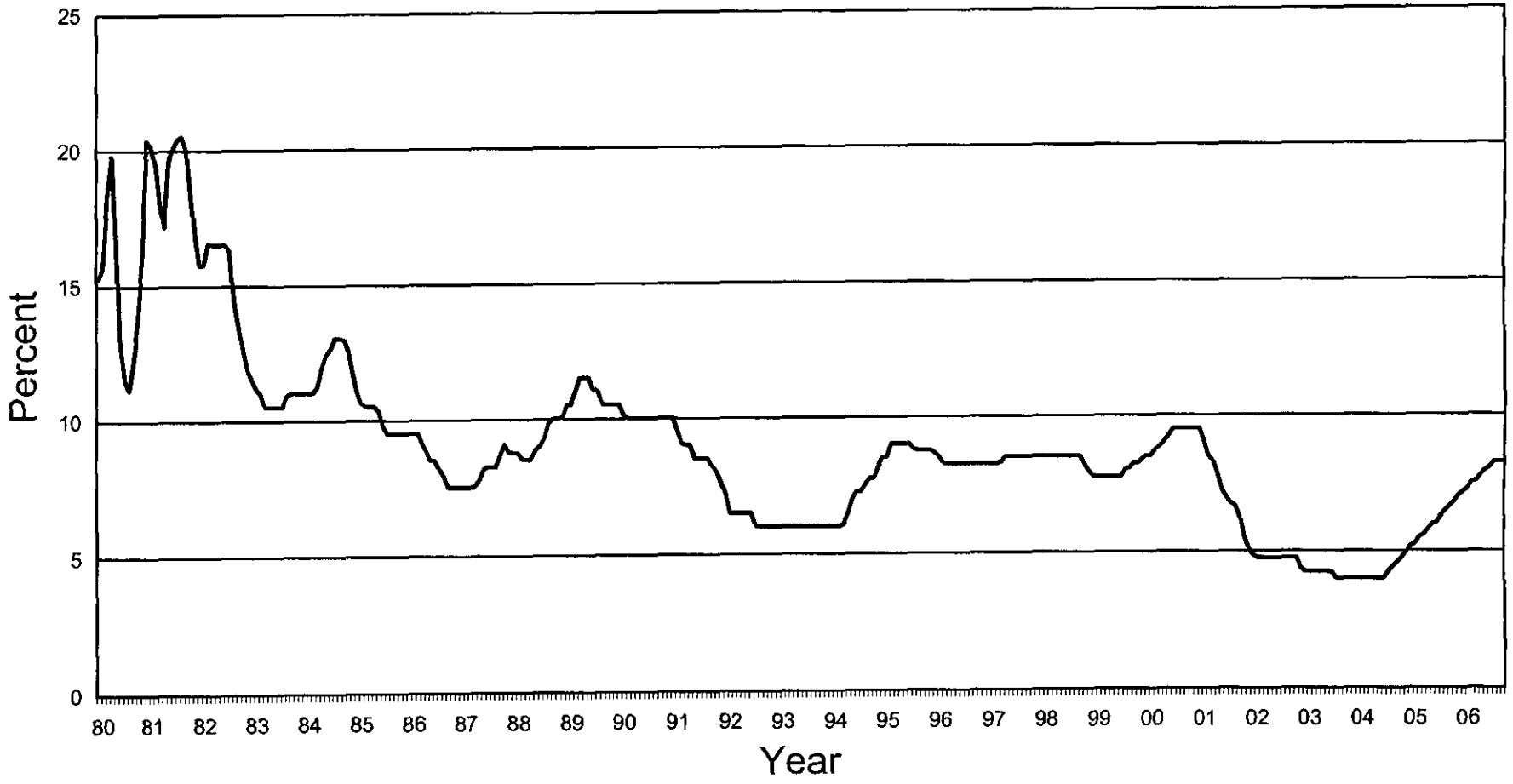
Average Prime Interest Rates

Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)
Jan 1980	15.25	Jan 1984	11.00	Jan 1988	8.75	Jan 1992	6.50	Jan 1996	8.50	Jan 2000	8.50	Jan 2004	4.00
Feb	15.63	Feb	11.00	Feb	8.51	Feb	6.50	Feb	8.25	Feb	8.73	Feb	4.00
Mar	18.31	Mar	11.21	Mar	8.50	Mar	6.50	Mar	8.25	Mar	8.83	Mar	4.00
Apr	19.77	Apr	11.93	Apr	8.50	Apr	6.50	Apr	8.25	Apr	9.00	Apr	4.00
May	16.57	May	12.39	May	8.84	May	6.50	May	8.25	May	9	May	4.00
Jun	12.63	Jun	12.60	Jun	9.00	Jun	6.50	Jun	8.25	Jun	9.50	Jun	4.00
Jul	11.48	Jul	13.00	Jul	9.29	Jul	6.02	Jul	8.25	Jul	9.50	Jul	4.25
Aug	11.12	Aug	13.00	Aug	9.84	Aug	6.00	Aug	8.25	Aug	9.50	Aug	4.43
Sep	12.23	Sep	12.97	Sep	10.00	Sep	6.00	Sep	8.25	Sep	9.50	Sep	4.58
Oct	13.79	Oct	12.58	Oct	10.00	Oct	6.00	Oct	8.25	Oct	9.50	Oct	4.75
Nov	16.06	Nov	11.77	Nov	10.05	Nov	6.00	Nov	8.25	Nov	9.50	Nov	4.93
Dec	20.35	Dec	11.06	Dec	10.50	Dec	6.00	Dec	8.25	Dec	9.50	Dec	5.15
Jan 1981	20.16	Jan 1985	10.61	Jan 1989	10.50	Jan 1993	6.00	Jan 1997	8.26	Jan 2001	9.05	Jan 2005	5.25
Feb	19.43	Feb	10.50	Feb	10.93	Feb	6.00	Feb	8.25	Feb	8.50	Feb	5.49
Mar	18.05	Mar	10.50	Mar	11.50	Mar	6.00	Mar	8.30	Mar	8.32	Mar	5.58
Apr	17.15	Apr	10.50	Apr	11.50	Apr	6.00	Apr	8.50	Apr	7.80	Apr	5.75
May	19.61	May	10.31	May	11.50	May	6.00	May	8.50	May	7	May	5.98
Jun	20.03	Jun	9.78	Jun	11.07	Jun	6.00	Jun	8.50	Jun	6.98	Jun	6.01
Jul	20.39	Jul	9.50	Jul	10.98	Jul	6.00	Jul	8.50	Jul	6.75	Jul	6.25
Aug	20.50	Aug	9.50	Aug	10.50	Aug	6.00	Aug	8.50	Aug	6.67	Aug	6.44
Sep	20.08	Sep	9.50	Sep	10.50	Sep	6.00	Sep	8.50	Sep	6.28	Sep	6.59
Oct	18.45	Oct	9.50	Oct	10.50	Oct	6.00	Oct	8.50	Oct	5.53	Oct	6.75
Nov	16.84	Nov	9.50	Nov	10.50	Nov	6.00	Nov	8.50	Nov	5.10	Nov	7.00
Dec	15.75	Dec	9.50	Dec	10.50	Dec	6.00	Dec	8.50	Dec	4.84	Dec	7.15
Jan 1982	15.75	Jan 1986	9.50	Jan 1990	10.11	Jan 1994	6.00	Jan 1998	8.50	Jan 2002	4.75	Jan 2006	7.26
Feb	16.56	Feb	9.50	Feb	10.00	Feb	6.00	Feb	8.50	Feb	4.75	Feb	7.50
Mar	16.50	Mar	9.10	Mar	10.00	Mar	6.06	Mar	8.50	Mar	4.75	Mar	7.53
Apr	16.50	Apr	8.83	Apr	10.00	Apr	6.45	Apr	8.50	Apr	4.75	Apr	7.75
May	16.50	May	8.50	May	10.00	May	6.99	May	8.50	May	4.75	May	7.93
Jun	16.50	Jun	8.50	Jun	10.00	Jun	7.25	Jun	8.50	Jun	4.75	June	8.02
Jul	16.26	Jul	8.16	Jul	10.00	Jul	7.25	Jul	8.50	Jul	4.75	July	8.25
Aug	14.39	Aug	7.90	Aug	10.00	Aug	7.51	Aug	8.50	Aug	4.75	Aug	8.25
Sep	13.50	Sep	7.50	Sep	10.00	Sep	7.75	Sep	8.49	Sep	4.75	Sep	8.25
Oct	12.52	Oct	7.50	Oct	10.00	Oct	7.75	Oct	8.12	Oct	4.75		
Nov	11.85	Nov	7.50	Nov	10.00	Nov	8.15	Nov	7.89	Nov	4.35		
Dec	11.50	Dec	7.50	Dec	10.00	Dec	8.50	Dec	7.75	Dec	4.25		
Jan 1983	11.16	Jan 1987	7.50	Jan 1991	9.52	Jan 1995	8.50	Jan 1999	7.75	Jan 2003	4.25		
Feb	10.98	Feb	7.50	Feb	9.05	Feb	9.00	Feb	7.75	Feb	4.25		
Mar	10.50	Mar	7.50	Mar	9.00	Mar	9.00	Mar	7.75	Mar	4.25		
Apr	10.50	Apr	7.75	Apr	9.00	Apr	9.00	Apr	7.75	Apr	4.25		
May	10.50	May	8.14	May	8.50	May	9.00	May	7.75	May	4.25		
Jun	10.50	Jun	8.25	Jun	8.50	Jun	9.00	Jun	7.75	Jun	4.22		
Jul	10.50	Jul	8.25	Jul	8.50	Jul	8.80	Jul	8.00	Jul	4.00		
Aug	10.89	Aug	8.25	Aug	8.50	Aug	8.75	Aug	8.06	Aug	4.00		
Sep	11.00	Sep	8.70	Sep	8.20	Sep	8.75	Sep	8.25	Sep	4.00		
Oct	11.00	Oct	9.07	Oct	8.00	Oct	8.75	Oct	8.25	Oct	4.00		
Nov	11.00	Nov	8.78	Nov	7.58	Nov	8.75	Nov	8.37	Nov	4.00		
Dec	11.00	Dec	8.75	Dec	7.21	Dec	8.65	Dec	8.50	Dec	4.00		

Source:
http://research.stlouisfed.org/fred2/data/MPRIME.txt

MISSOURI GAS ENERGY
GR-2006-0422

Average Prime Interest Rates
1980 - 2006



SCHEDULE 3-2

MISSOURI GAS ENERGY
CASE NO. GR-2006-0422

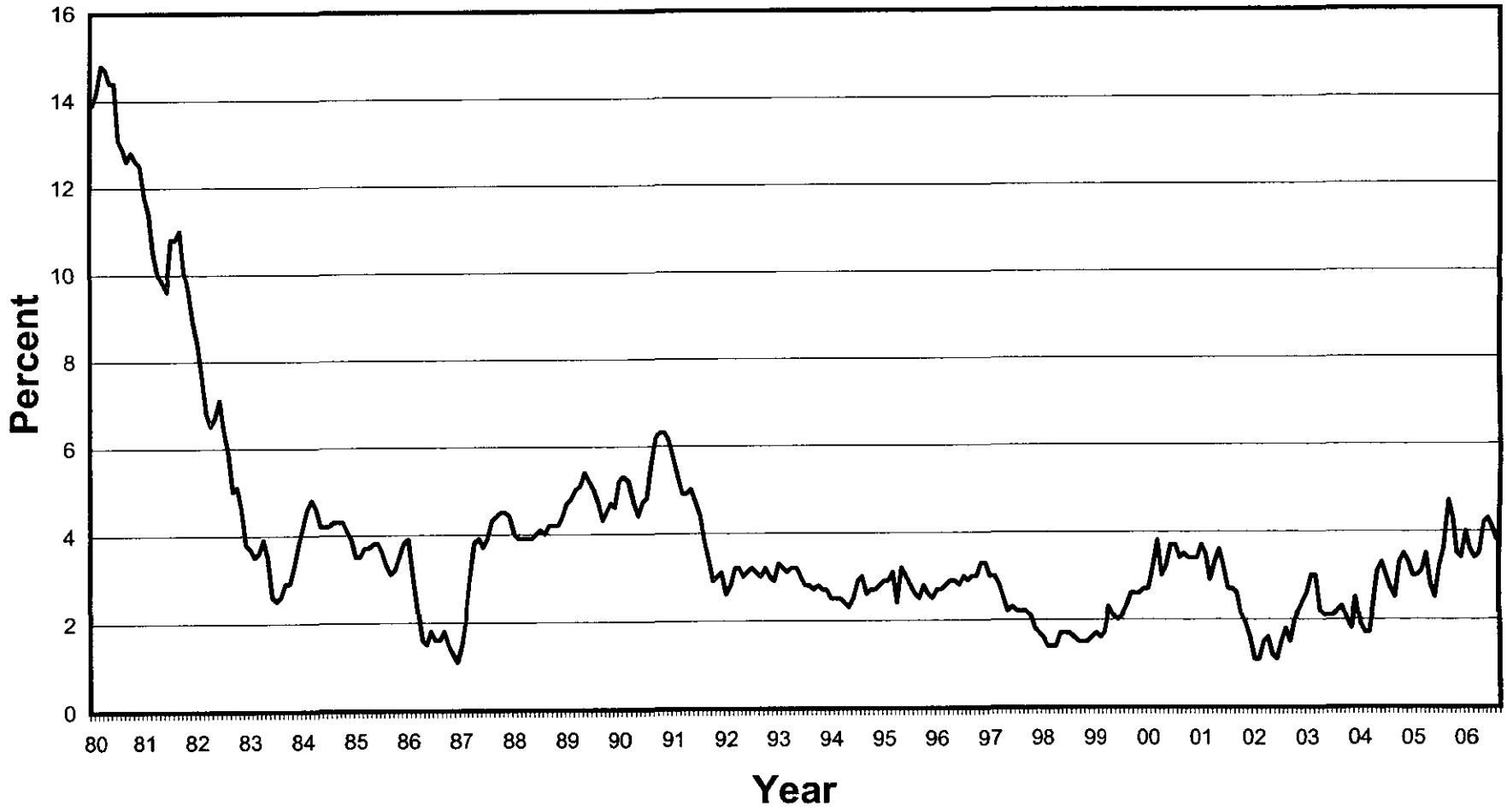
Rate of Inflation

Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)
Jan 1980	13.90	Jan 1984	4.20	Jan 1988	4.00	Jan 1992	2.60	Jan 1996	2.70	Jan 2000	2.70	Jan 2004	1.90
Feb	14.20	Feb	4.60	Feb	3.90	Feb	2.80	Feb	2.70	Feb	3.20	Feb	1.70
Mar	14.80	Mar	4.80	Mar	3.90	Mar	3.20	Mar	2.80	Mar	3.70	Mar	1.70
Apr	14.70	Apr	4.60	Apr	3.90	Apr	3.20	Apr	2.90	Apr	3.00	Apr	2.30
May	14.40	May	4.20	May	3.90	May	3.00	May	2.90	May	3.20	May	3.10
Jun	14.40	Jun	4.20	Jun	4.00	Jun	3.10	Jun	2.80	Jun	3.70	Jun	3.30
Jul	13.10	Jul	4.20	Jul	4.10	Jul	3.20	Jul	3.00	Jul	3.70	Jul	3.00
Aug	12.90	Aug	4.30	Aug	4.00	Aug	3.10	Aug	2.90	Aug	3.40	Aug	2.70
Sep	12.60	Sep	4.30	Sep	4.20	Sep	3.00	Sep	3.00	Sep	3.50	Sep	2.50
Oct	12.80	Oct	4.30	Oct	4.20	Oct	3.20	Oct	3.00	Oct	3.40	Oct	3.30
Nov	12.60	Nov	4.10	Nov	4.20	Nov	3.00	Nov	3.30	Nov	3.40	Nov	3.50
Dec	12.50	Dec	3.90	Dec	4.40	Dec	2.90	Dec	3.30	Dec	3.40	Dec	3.30
Jan 1981	11.80	Jan 1985	3.50	Jan 1989	4.70	Jan 1993	3.30	Jan 1997	3.00	Jan 2001	3.70	Jan 2005	3.00
Feb	11.40	Feb	3.50	Feb	4.80	Feb	3.20	Feb	3.00	Feb	3.50	Feb	3.00
Mar	10.50	Mar	3.70	Mar	5.00	Mar	3.10	Mar	2.80	Mar	2.90	Mar	3.10
Apr	10.00	Apr	3.70	Apr	5.10	Apr	3.20	Apr	2.50	Apr	3.30	Apr	3.50
May	9.80	May	3.80	May	5.40	May	3.20	May	2.20	May	3.60	May	2.80
Jun	9.60	Jun	3.80	Jun	5.20	Jun	3.00	Jun	2.30	Jun	3.20	Jun	2.50
Jul	10.80	Jul	3.60	Jul	5.00	Jul	2.80	Jul	2.20	Jul	2.70	Jul	3.20
Aug	10.80	Aug	3.30	Aug	4.70	Aug	2.80	Aug	2.20	Aug	2.70	Aug	3.60
Sep	11.00	Sep	3.10	Sep	4.30	Sep	2.70	Sep	2.20	Sep	2.60	Sep	4.70
Oct	10.10	Oct	3.20	Oct	4.50	Oct	2.80	Oct	2.10	Oct	2.10	Oct	4.30
Nov	9.60	Nov	3.50	Nov	4.70	Nov	2.70	Nov	1.80	Nov	1.90	Nov	3.50
Dec	8.90	Dec	3.80	Dec	4.60	Dec	2.70	Dec	1.70	Dec	1.60	Dec	3.40
Jan 1982	8.40	Jan 1986	3.90	Jan 1990	5.20	Jan 1994	2.50	Jan 1998	1.60	Jan 2002	1.10	Jan 2006	4.00
Feb	7.60	Feb	3.10	Feb	5.30	Feb	2.50	Feb	1.40	Feb	1.10	Feb	3.60
Mar	6.80	Mar	2.30	Mar	5.20	Mar	2.50	Mar	1.40	Mar	1.50	Mar	3.40
Apr	6.50	Apr	1.60	Apr	4.70	Apr	2.40	Apr	1.40	Apr	1.60	Apr	3.50
May	6.70	May	1.50	May	4.40	May	2.30	May	1.70	May	1.20	May	4.20
Jun	7.10	Jun	1.80	Jun	4.70	Jun	2.50	Jun	1.70	Jun	1.10	June	4.30
Jul	6.40	Jul	1.60	Jul	4.80	Jul	2.90	Jul	1.70	Jul	1.50	July	4.10
Aug	5.90	Aug	1.60	Aug	5.60	Aug	3.00	Aug	1.60	Aug	1.80		
Sep	5.00	Sep	1.80	Sep	6.20	Sep	2.60	Sep	1.50	Sep	1.50		
Oct	5.10	Oct	1.50	Oct	6.30	Oct	2.70	Oct	1.50	Oct	2.00		
Nov	4.60	Nov	1.30	Nov	6.30	Nov	2.70	Nov	1.50	Nov	2.20		
Dec	3.80	Dec	1.10	Dec	6.10	Dec	2.80	Dec	1.60	Dec	2.40		
Jan 1983	3.70	Jan 1987	1.50	Jan 1991	5.70	Jan 1995	2.90	Jan 1999	1.70	Jan 2003	2.60		
Feb	3.50	Feb	2.10	Feb	5.30	Feb	2.90	Feb	1.60	Feb	3.00		
Mar	3.60	Mar	3.00	Mar	4.90	Mar	3.10	Mar	1.70	Mar	3.00		
Apr	3.90	Apr	3.80	Apr	4.90	Apr	2.40	Apr	2.30	Apr	2.20		
May	3.50	May	3.90	May	5.00	May	3.20	May	2.10	May	2.10		
Jun	2.60	Jun	3.70	Jun	4.70	Jun	3.00	Jun	2.00	Jun	2.10		
Jul	2.50	Jul	3.90	Jul	4.40	Jul	2.80	Jul	2.10	Jul	2.10		
Aug	2.60	Aug	4.30	Aug	3.80	Aug	2.60	Aug	2.30	Aug	2.20		
Sep	2.90	Sep	4.40	Sep	3.40	Sep	2.50	Sep	2.60	Sep	2.30		
Oct	2.90	Oct	4.50	Oct	2.90	Oct	2.80	Oct	2.60	Oct	2.00		
Nov	3.30	Nov	4.50	Nov	3.00	Nov	2.60	Nov	2.60	Nov	1.80		
Dec	3.80	Dec	4.40	Dec	3.10	Dec	2.50	Dec	2.70	Dec	1.90		

Source: U.S. Dept of Labor, Bureau of Labor Statistics, Consumer Price Index - All Urban Consumers,
Change for 12-Month Period, Bureau of Labor Statistics,
http://www.bls.gov/schedule/archives/cpi_nr.htm

MISSOURI GAS ENERGY
CASE NO. GR-2006-0422

Rate of Inflation
1980 - 2006



SCHEDULE 4-2

MISSOURI GAS ENERGY
CASE NO. GR-2006-0422

Average Yields on Mergent's Public Utility Bonds

Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)
Jan 1980	12.12	Jan 1984	13.40	Jan 1988	10.75	Jan 1992	8.67	Jan 1996	7.20	Jan 2000	8.22	Jan 2004	6.23
Feb	13.48	Feb	13.50	Feb	10.11	Feb	8.77	Feb	7.37	Feb	8.10	Feb	6.17
Mar	14.33	Mar	14.03	Mar	10.11	Mar	8.84	Mar	7.72	Mar	8.14	Mar	6.01
Apr	13.50	Apr	14.30	Apr	10.53	Apr	8.79	Apr	7.88	Apr	8.14	Apr	6.38
May	12.17	May	14.95	May	10.75	May	8.72	May	7.99	May	9	May	6.68
Jun	11.87	Jun	15.16	Jun	10.71	Jun	8.64	Jun	8.07	Jun	8	Jun	6.53
Jul	12.12	Jul	14.92	Jul	10.96	Jul	8.46	Jul	8.02	Jul	8	Jul	6.34
Aug	12.82	Aug	14.29	Aug	11.09	Aug	8.34	Aug	7.84	Aug	8	Aug	6.18
Sep	13.29	Sep	14.04	Sep	10.56	Sep	8.32	Sep	8.01	Sep	8	Sep	6.01
Oct	13.53	Oct	13.68	Oct	9.92	Oct	8.44	Oct	7.76	Oct	8.08	Oct	5.95
Nov	14.07	Nov	13.15	Nov	9.89	Nov	8.53	Nov	7.48	Nov	8.03	Nov	5.97
Dec	14.48	Dec	12.96	Dec	10.02	Dec	8.36	Dec	7.58	Dec	7.79	Dec	5.93
Jan 1981	14.22	Jan 1985	12.88	Jan 1989	10.02	Jan 1993	8.23	Jan 1997	7.79	Jan 2001	7.76	Jan 2005	5.80
Feb	14.84	Feb	13.00	Feb	10.02	Feb	8.00	Feb	7.68	Feb	7.69	Feb	5.64
Mar	14.86	Mar	13.66	Mar	10.16	Mar	7.85	Mar	7.92	Mar	7.59	Mar	5.86
Apr	15.32	Apr	13.42	Apr	10.14	Apr	7.76	Apr	8.08	Apr	7.81	Apr	5.72
May	15.84	May	12.89	May	9.92	May	7.78	May	7.94	May	7.88	May	5.60
Jun	15.27	Jun	11.91	Jun	9.49	Jun	7.68	Jun	7.77	Jun	7.75	Jun	5.39
Jul	15.87	Jul	11.88	Jul	9.34	Jul	7.53	Jul	7.52	Jul	7.71	Jul	5.50
Aug	16.33	Aug	11.93	Aug	9.37	Aug	7.21	Aug	7.57	Aug	7.57	Aug	5.51
Sep	16.89	Sep	11.95	Sep	9.43	Sep	7.01	Sep	7.50	Sep	7.73	Sep	5.54
Oct	16.76	Oct	11.84	Oct	9.37	Oct	6.99	Oct	7.37	Oct	7.64	Oct	5.79
Nov	15.50	Nov	11.33	Nov	9.33	Nov	7.30	Nov	7.24	Nov	7.61	Nov	5.88
Dec	15.77	Dec	10.82	Dec	9.31	Dec	7.33	Dec	7.16	Dec	7.86	Dec	5.83
Jan 1982	16.73	Jan 1986	10.66	Jan 1990	9.44	Jan 1994	7.31	Jan 1998	7.03	Jan 2002	7.69	Jan 2006	5.77
Feb	16.72	Feb	10.16	Feb	9.66	Feb	7.44	Feb	7.09	Feb	7.62	Feb	5.83
Mar	16.07	Mar	9.33	Mar	9.75	Mar	7.83	Mar	7.13	Mar	7.83	Mar	5.98
Apr	15.82	Apr	9.02	Apr	9.87	Apr	8.20	Apr	7.12	Apr	7.74	Apr	6.28
May	15.60	May	9.52	May	9.89	May	8.32	May	7.11	May	7.76	May	6.39
Jun	16.18	Jun	9.51	Jun	9.69	Jun	8.31	Jun	6.99	Jun	7.67	June	6.39
Jul	16.04	Jul	9.19	Jul	9.66	Jul	8.47	Jul	6.99	Jul	7.54	July	6.37
Aug	15.22	Aug	9.15	Aug	9.84	Aug	8.41	Aug	6.96	Aug	7.34	Aug	6.20
Sep	14.56	Sep	9.42	Sep	10.01	Sep	8.65	Sep	6.88	Sep	7.23		
Oct	13.88	Oct	9.39	Oct	9.94	Oct	8.88	Oct	6.88	Oct	7.43		
Nov	13.58	Nov	9.15	Nov	9.76	Nov	9.00	Nov	6.96	Nov	7.31		
Dec	13.55	Dec	8.96	Dec	9.57	Dec	8.79	Dec	6.84	Dec	7.20		
Jan 1983	13.46	Jan 1987	8.77	Jan 1991	9.56	Jan 1995	8.77	Jan 1999	6.87	Jan 2003	7.13		
Feb	13.60	Feb	8.81	Feb	9.31	Feb	8.56	Feb	7.00	Feb	6.92		
Mar	13.28	Mar	8.75	Mar	9.39	Mar	8.41	Mar	7.18	Mar	6.80		
Apr	13.03	Apr	9.30	Apr	9.30	Apr	8.30	Apr	7.16	Apr	6.68		
May	13.00	May	9.82	May	9.29	May	7.93	May	7.42	May	6.35		
Jun	13.17	Jun	9.87	Jun	9.44	Jun	7.62	Jun	7.70	Jun	6.21		
Jul	13.28	Jul	10.01	Jul	9.40	Jul	7.73	Jul	7.66	Jul	6.54		
Aug	13.50	Aug	10.33	Aug	9.16	Aug	7.86	Aug	7.86	Aug	6.78		
Sep	13.35	Sep	11.00	Sep	9.03	Sep	7.62	Sep	7.87	Sep	6.58		
Oct	13.19	Oct	11.32	Oct	8.99	Oct	7.46	Oct	8.02	Oct	6.50		
Nov	13.33	Nov	10.82	Nov	8.93	Nov	7.40	Nov	7.86	Nov	6.44		
Dec	13.48	Dec	10.99	Dec	8.76	Dec	7.21	Dec	8.04	Dec	6.36		

Source:
Mergent Bond Record for June 2006 PU Bonds (page 8)

MISSOURI GAS ENERGY
CASE NO. GR-2006-0422

Average Yields on Thirty-Year U.S. Treasury Bonds

Mo/Year	Rate (%)
Jan 1980	10.60
Feb	12.13
Mar	12.34
Apr	11.40
May	10.36
Jun	9.81
Jul	10.24
Aug	11.00
Sep	11.34
Oct	11.59
Nov	12.37
Dec	12.40
Jan 1981	12.14
Feb	12.80
Mar	12.69
Apr	13.20
May	13.60
Jun	12.96
Jul	13.59
Aug	14.17
Sep	14.67
Oct	14.68
Nov	13.35
Dec	13.45
Jan 1982	14.22
Feb	14.22
Mar	13.53
Apr	13.37
May	13.24
Jun	13.92
Jul	13.55
Aug	12.77
Sep	12.07
Oct	11.17
Nov	10.54
Dec	10.54
Jan 1983	10.63
Feb	10.88
Mar	10.63
Apr	10.48
May	10.53
Jun	10.93
Jul	11.40
Aug	11.82
Sep	11.63
Oct	11.58
Nov	11.75
Dec	11.88

Mo/Year	Rate (%)
Jan 1984	11.75
Feb	11.95
Mar	12.38
Apr	12.65
May	13.43
Jun	13.44
Jul	13.21
Aug	12.54
Sep	12.29
Oct	11.98
Nov	11.56
Dec	11.52
Jan 1985	11.45
Feb	11.47
Mar	11.81
Apr	11.47
May	11.05
Jun	10.44
Jul	10.50
Aug	10.56
Sep	10.61
Oct	10.50
Nov	10.06
Dec	9.54
Jan 1986	9.40
Feb	8.93
Mar	7.96
Apr	7.39
May	7.52
Jun	7.57
Jul	7.27
Aug	7.33
Sep	7.62
Oct	7.70
Nov	7.52
Dec	7.37
Jan 1987	7.39
Feb	7.54
Mar	7.55
Apr	8.25
May	8.78
Jun	8.57
Jul	8.64
Aug	8.97
Sep	9.59
Oct	9.61
Nov	8.95
Dec	9.12

Mo/Year	Rate (%)
Jan 1988	8.83
Feb	8.43
Mar	8.63
Apr	8.95
May	9.23
Jun	9.00
Jul	9.14
Aug	9.32
Sep	9.06
Oct	8.89
Nov	9.02
Dec	9.01
Jan 1989	8.93
Feb	9.01
Mar	9.17
Apr	9.03
May	8.83
Jun	8.27
Jul	8.08
Aug	8.12
Sep	8.15
Oct	8.00
Nov	7.90
Dec	7.90
Jan 1990	8.26
Feb	8.50
Mar	8.56
Apr	8.76
May	8.73
Jun	8.46
Jul	8.50
Aug	8.86
Sep	9.03
Oct	8.86
Nov	8.54
Dec	8.24
Jan 1991	8.27
Feb	8.03
Mar	8.29
Apr	8.21
May	8.27
Jun	8.47
Jul	8.45
Aug	8.14
Sep	7.95
Oct	7.93
Nov	7.92
Dec	7.70

Mo/Year	Rate (%)
Jan 1992	7.58
Feb	7.85
Mar	7.97
Apr	7.96
May	7.89
Jun	7.84
Jul	7.60
Aug	7.39
Sep	7.34
Oct	7.53
Nov	7.61
Dec	7.44
Jan 1993	7.34
Feb	7.09
Mar	6.82
Apr	6.85
May	6.92
Jun	6.81
Jul	6.63
Aug	6.32
Sep	6.00
Oct	5.94
Nov	6.21
Dec	6.25
Jan 1994	6.29
Feb	6.49
Mar	6.91
Apr	7.27
May	7.41
Jun	7.40
Jul	7.58
Aug	7.49
Sep	7.71
Oct	7.94
Nov	8.08
Dec	7.87
Jan 1995	7.85
Feb	7.61
Mar	7.45
Apr	7.36
May	6.95
Jun	6.57
Jul	6.72
Aug	6.86
Sep	6.55
Oct	6.37
Nov	6.26
Dec	6.06

Mo/Year	Rate (%)
Jan 1996	6.05
Feb	6.24
Mar	6.60
Apr	6.79
May	6.93
Jun	7.06
Jul	7.03
Aug	6.84
Sep	7.03
Oct	6.81
Nov	6.48
Dec	6.55
Jan 1997	6.83
Feb	6.69
Mar	6.93
Apr	7.09
May	6.94
Jun	6.77
Jul	6.51
Aug	6.58
Sep	6.50
Oct	6.33
Nov	6.11
Dec	5.99
Jan 1998	5.81
Feb	5.89
Mar	5.95
Apr	5.92
May	5.93
Jun	5.70
Jul	5.68
Aug	5.54
Sep	5.20
Oct	5.01
Nov	5.25
Dec	5.06
Jan 1999	5.16
Feb	5.37
Mar	5.58
Apr	5.55
May	5.81
Jun	6.04
Jul	5.98
Aug	6.07
Sep	6.07
Oct	6.26
Nov	6.15
Dec	6.35

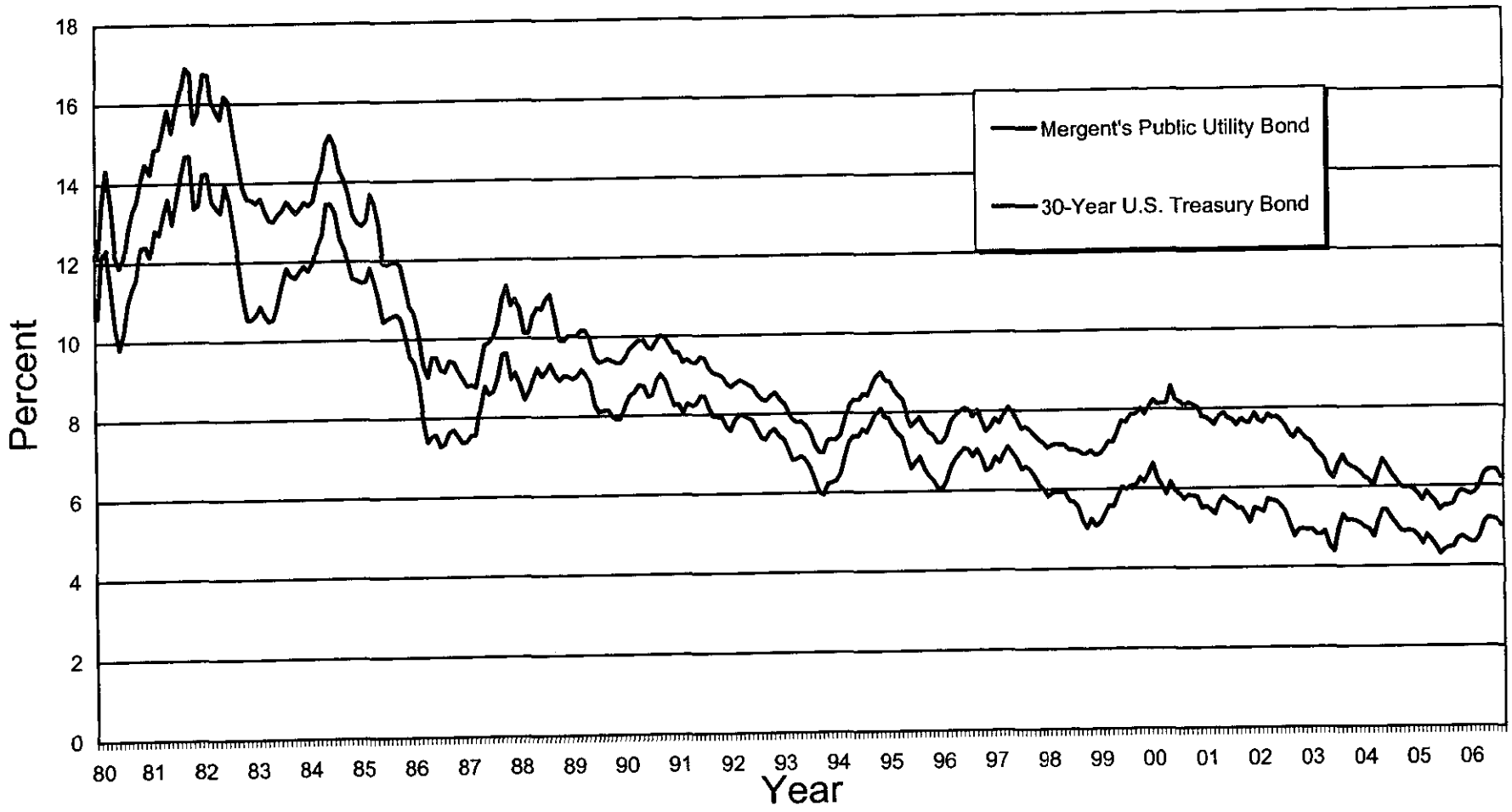
Mo/Year	Rate (%)
Jan 2000	6.63
Feb	6.23
Mar	6.05
Apr	5.85
May	6
Jun	6
Jul	6
Aug	5.72
Sep	5.83
Oct	5.80
Nov	6
Dec	5
Jan 2001	5.54
Feb	5.45
Mar	5.34
Apr	5.65
May	5.78
Jun	5.67
Jul	5.61
Aug	5.48
Sep	5.48
Oct	5.32
Nov	5.12
Dec	5.48
Jan 2002	5.44
Feb	5.39
Mar	5.71
Apr	5.67
May	5.64
Jun	5.52
Jul	5.38
Aug	5.08
Sep	4.76
Oct	4.93
Nov	4.95
Dec	4.92
Jan 2003	4.94
Feb	4.81
Mar	4.80
Apr	4.90
May	4.53
Jun	4.37
Jul	4.93
Aug	5.30
Sep	5.14
Oct	5.16
Nov	5.13
Dec	5.08

Mo/Year	Rate (%)
Jan 2004	5
Feb	5
Mar	5
Apr	5.14
May	5.42
Jun	5.41
Jul	5.22
Aug	5.06
Sep	4.90
Oct	4.86
Nov	4.89
Dec	4.86
Jan 2005	4.73
Feb	4.55
Mar	4.78
Apr	4.65
May	4.49
Jun	4.29
Jul	4.41
Aug	4.46
Sep	4.47
Oct	4.67
Nov	4.73
Dec	4.66
Jan 2006	4.59
Feb	4.58
Mar	4.73
Apr	5.06
May	5.20
Jun	5.16
July	5.13
Aug	5.00
Sep	4.85

Sources:
http://finance.yahoo.com/q/hp?s=^TYX

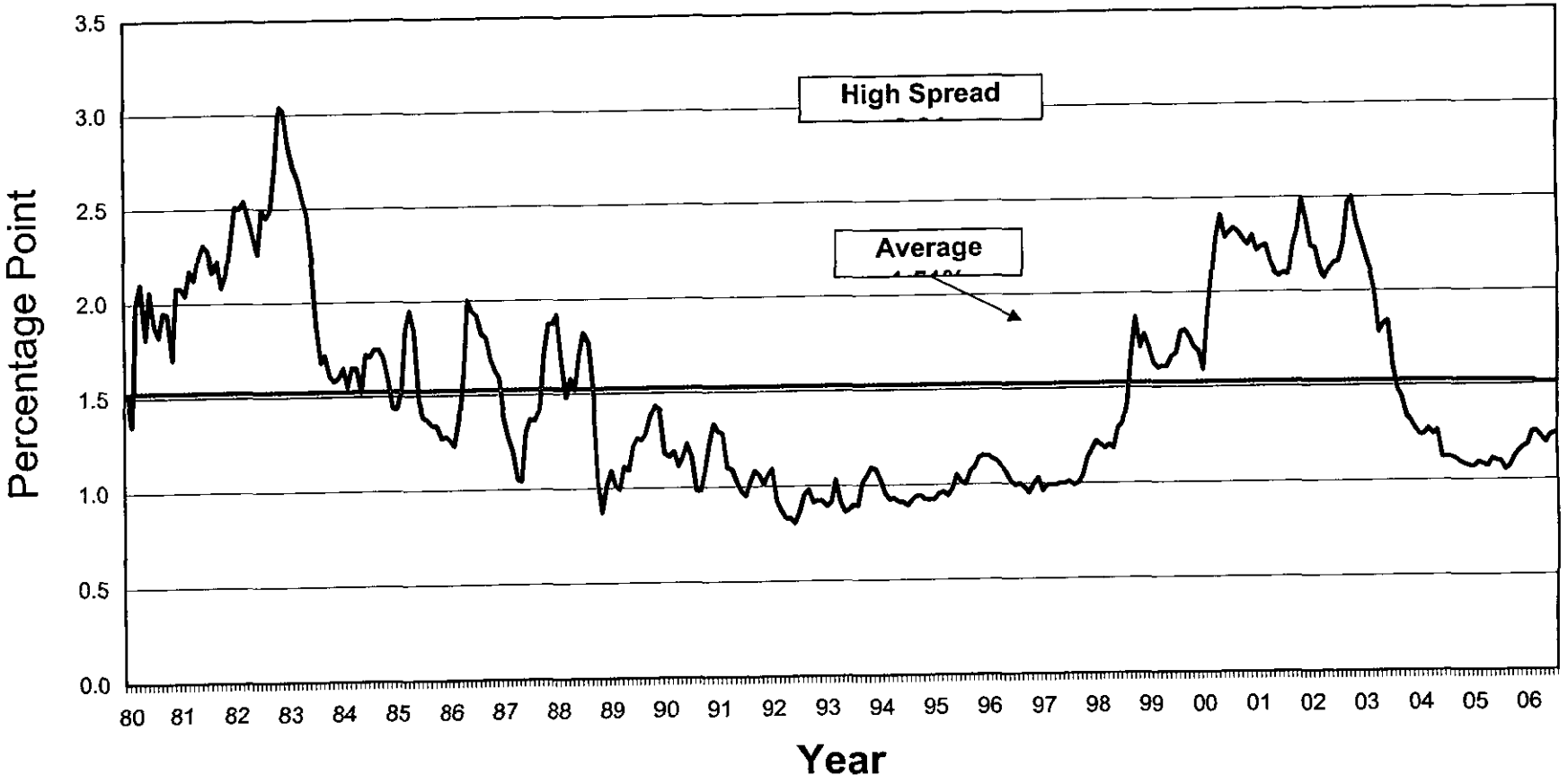
MISSOURI GAS ENERGY
GR-2006-0422

Average Yields on Mergent's Public Utility Bonds and Thirty-Year U.S. Treasury Bonds (1980 - 2006)

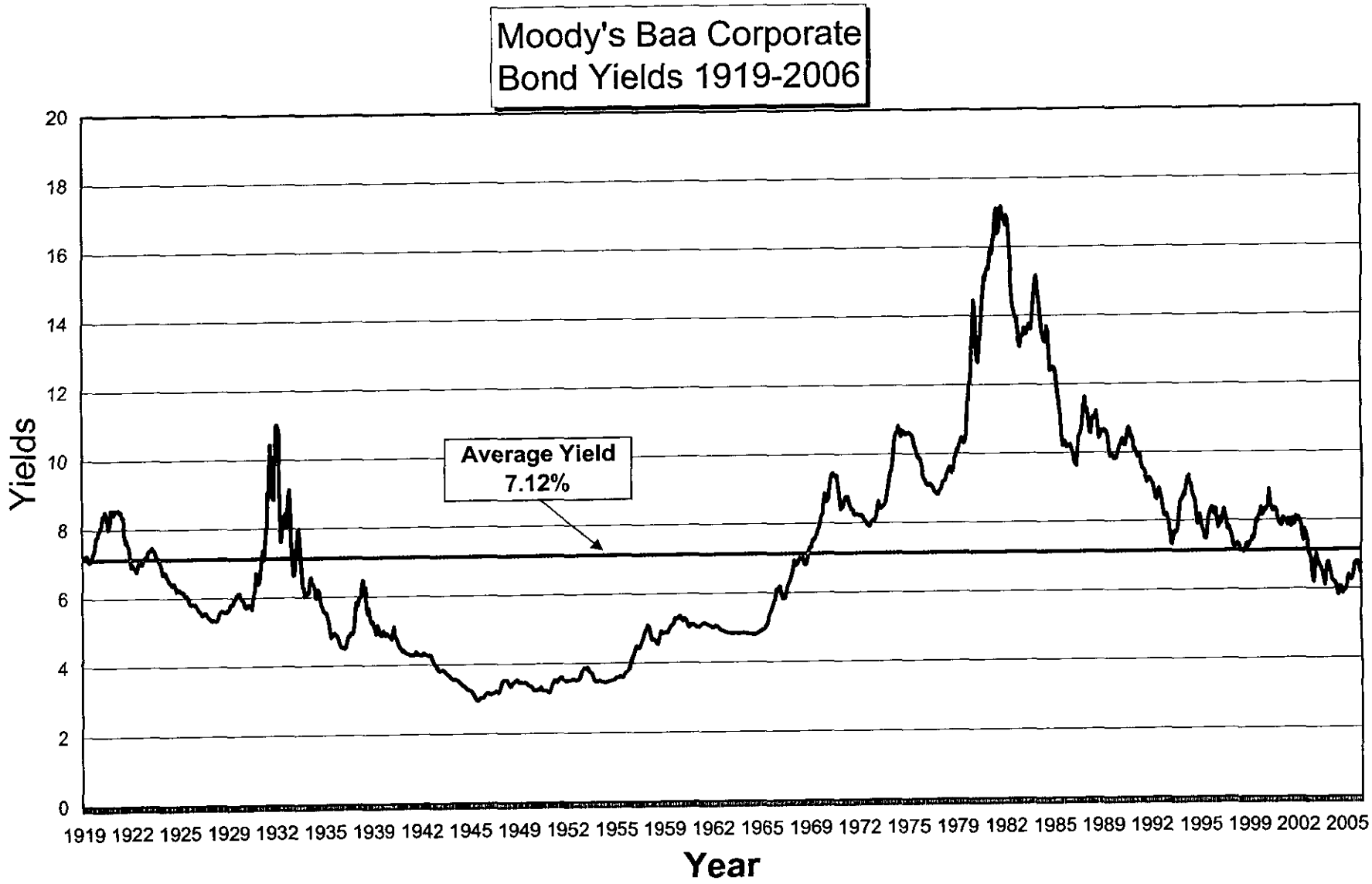


SCHEDULE 5-3

Monthly Spreads Between Yields on Mergent's Public Utility Bonds and Thirty-Year U.S. Treasury Bonds (1980 - 2006)



MISSOURI GAS ENERGY
GR-2006-0422



Source: St. Louis Federal Reserve Website: http://stlouisfed.org

SCHEDULE 5-5

Economic Estimates and Projections, 2006 - 2008

	Inflation Rate			Real GDP			Unemployment			3-Mo. T-Bill Rate			30-Year T-Bond Rate		
Source	2006	2007	2008	2006	2007	2008	2006	2007	2008	2006	2007	2008	2006	2007	2008
Value Line Investment Survey -- Selection & Opinion (08-25-06, page 961)	3.40%	2.50%	2.30%	3.40%	2.60%	3.10%	4.70%	4.90%	4.90%	4.90%	5.00%	4.80%	5.10%	5.40%	5.50%
The Budget and *Economic* Outlook FY2007-2016	2.80%	2.20%	2.20%	3.60%	3.40%	3.10%	5.00%	5.00%	5.20%	4.50%	4.50%	4.40%	N.A.	N.A.	N.A.
Current rate	3.80%			2.60%			4.60%			4.81%			4.85%		

Notes: N.A. = Not Available.
Value Line data for 2006-2008 are estimated.
CBO data for 2006 and 2007 are forecasted, data for 2008 is projected.

Sources of Current Rates:

Inflation:	The Bureau of Labor Statistics, Consumer Price Index - All Urban Consumers, 12-Month Period Ending, August 31, 2006 (see first paragraph). http://www.bls.gov/schedule/archives/cpi_nr.htm
GDP:	*U.S. Department of Commerce, Bureau of Economic* Analysis for the Quarter Ending June 31, 2006 (see first paragraph). http://www.bea.gov/bea/newsrel/gdpnewsrelease.htm
Unemployment:	The Bureau of Labor Statistics, Economy Situation Summary - Unemployment Rate, September 2006. http://www.bls.gov/news.release/empsit.nr0.htm
3-Month Treasury:	St. Louis Federal Reserve website for September 1, 2006. http://research.stlouisfed.org/fred2/series/TB3MS/22
30-Yr. T-Bond:	St. Louis Federal Reserve website for September 1, 2006. http://research.stlouisfed.org/fred2/series/GS30?&cid=115
Other Sources (2006 - 2008):	ValueLine Investment Survey Selection & Opinion, August 25, 2006, page 961.
	The Congressional Budget Office, The Budget and Economic Outlook: Fiscal Years 2007-2016, January 2006, page 46. http://www.cbo.gov/ftpdocs/70xx/doc7027/01-26-BudgetOutlook.pdf

MISSOURI GAS ENERGY
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Historical Capital Structures for Southern Union Company
Consolidated Basis
(Thousands of Dollars)

Capital Components	2001 [1]	2002 [1]	2003 [1]	2004 [2]	2005 [2]
Common Equity	$721,857	$685,346	$920,418	$1,267,557	$1,624,069
Preferred Stock	$100,000	$100,000	$100,000	$230,000	$230,000
Long-Term Debt	$1,335,544 [3]	$1,190,413 [3]	$2,346,405 [3]	$2,160,003 [3]	$2,175,789 [3]
Short-Term Debt	$190,600	$131,800	$251,500	$699,000	$420,000
Total	$2,348,001	$2,107,559	$3,618,323	$4,356,560	$4,449,858

Capital Structure	2001	2002	2003	2004	2005	*5-Year* Average
Common Equity	30.74%	32.52%	25.44%	29.10%	36.50%	30.86%
Preferred Stock	4.26%	4.74%	2.76%	5.28%	5.17%	4.44%
Long-Term Debt	56.88%	56.48%	64.85%	49.58%	48.90%	55.34%
Short-Term Debt	8.12%	6.25%	6.95%	16.04%	9.44%	9.36%
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Notes:
1. Based on June 30 fiscal year-end.
2. Based on December 31 fiscal year-end.
3. The amount of long-term debt includes current maturities.

Source: Southern Union Company's Stockholders 2001, 2003 and 2005 Annual Reports.

SCHEDULE 7

MISSOURI GAS ENERGY
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Selected Financial Ratios for Southern Union Company
Consolidated Basis

Financial Ratios	2001	2002	2003	2004	2005
Return on Common Equity	1.80%	5.30%	4.70%	10.20%	11.00%
Earnings Per Common Share	$0.19	$0.56	$0.67	$1.24	$1.58
Cash Dividends Per Common Share	NA	NA	NA	NA	NA
Common Dividend Payout Ratio	0.00%	0.00%	0.00%	0.00%	0.00%
Market Price Per Common Share	$18.86	$16.50	$18.40	$23.98	$23.63
Book Value Per Common Share	$11.12	$10.78	$11.42	$12.74	$14.43
Year-End Market to Book Ratio	1.70 x	1.53 x	1.61 x	1.88 x	1.64 x
Corporate Credit Rating	BBB+	BBB+	BBB	BBB	BBB

Notes: Common Dividend Payout Ratio = Cash Dividends Per Common Share / Earnings Per Common Share.

Market to Book Ratio = Market Price Per Common Share / Book Value Per Common Share.

Sources: -Standard & Poor's Stock Guide, January 2002, January 2003, January 2004, January 2005 and January 2006 for market-value per share.
-Value Line Investment Survey: Ratings and Reports, September 15, 2006 for return on common equity, earnings per common share, and book value per common share.
-Standard & Poor's RatingsDirect for credit ratings.

SCHEDULE 8

MISSOURI GAS ENERGY
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Capital Structure as of December 31, 2005
for Southern Union Company

Capital Component	Amount in Dollars		Percentage of Capital
Common Stock Equity	$1,624,069,000		36.31%
Preferred Stock	223,828,509		5.00%
Long-Term Debt	2,574,937,728	*	57.57%
Short-Term Debt	49,818,667	**	1.11%
Total Capitalization	**$4,472,653,904**		**100.00%**

Gas Distribution Financial Ratio Benchmarks
Total Debt / Total Capital

Standard & Poor's Corporation's RatingsDirect, Revised Financial Guidelines as of June 2, 2004	BBB Credit Rating based on a "3" Business Profil 55% to 65%

Note: * Based on the principal amount of long-term debt outstanding less total unamortized issuance costs as of December 31, 2005 (2,589,238,300 - 14,300,572).
**Short-term debt balance equals average monthly short-term debt balance for 2005 calendar year less 2005 year-end construction work in progress balance (234,241,667 - 184,423,000).

Source: Southern Union Company's response to Staff's Data Request No. 0065.1 and Southern Union Company's 2005 Annual Report.

SCHEDULE 9

MISSOURI GAS ENERGY
GR-2006-0422

Embedded Cost of Long-Term Debt as of December 31, 2005
for Southern Union Company (Excluding Debt Held at Panhandle Eastern Pipe Line Subsidiary)

Description	Outstanding LTD December 31, 2005	Annual Interest Rate	Annual Interest	Unamortized Issuance Costs, Discounts, and Premiums	Amortization of Issuance Cost	Embeded rate
7.6% Senior Notes	359,765,000	7.60%	27,342,140	(2,491,305)	137,768	7.692%
8.25% Senior Notes	300,000,000	8.25%	24,750,000	(5,281,324)	221,594	8.473%
PGE MTG 9.34%	15,000,000	9.34%	1,401,000	(236,264)	17,288	9.607%
Providence Series M 10.25%	817,000	10.25%	83,743	(27,112)	10,495	11.930%
Providence Series N 9.63%	10,000,000	9.63%	963,000	(214,396)	14,871	9.993%
Providence Series O 8.46%	12,500,000	8.46%	1,057,500	(524,788)	31,331	9.092%
Providence Series P 8.09%	10,625,000	8.09%	859,563	(253,944)	15,161	8.434%
Providence Series R 7.5%	15,000,000	7.50%	1,125,000	(300,713)	15,096	7.756%
Providence Series S 6.82%	14,464,000	6.82%	986,445	(282,817)	23,080	7.119%
Providence Series T 6.5%	13,513,000	6.50%	878,345	(2,026,370)	87,770	8.411%
Fall River 9.44%	6,500,000	9.44%	613,600	(166,426)	11,782	9.874%
Fall River 7.99%	7,000,000	7.96%	557,200	(108,225)	5,226	8.161%
Fall River 7.24%	6,000,000	7.24%	434,400	(88,955)	4,051	7.417%
Mandatory Convertibles 5.75%	125,000,000	5.75%	7,187,500	(103,820)	155,730	5.879%
Mandatory Convertibles 5.00%	100,000,000	5.00%	5,000,000	(224,753)	102,840	5.114%
Acct 189 unamortized issue costs/discounts				(14,718,154)	799,668	
Acct 257 unamortorized premiums				1,837,938	(104,372)	
Total LTD	996,184,000		73,239,435	(25,211,428)	1,549,379	7.702%

Source: Southern Union Company's response to Staff's Data Request 0065.1

SCHEDULE 10

Embedded Cost of Preferred Stock as of December 31, 2005
for Southern Union Company

Preferred Stock	Issuance Date	Original Issue	Outstanding as of 12/31/2005	Annual Interest Rate	Unamortized Issuance Cost	Annualized Cost to Company (1 * 2)
7.55% Preferred Securities	10/1/03	230,000,000	$230,000,000	7.55%	($6,171,491)	$17,365,000
			$230,000,000			**$17,365,000**

Embedded Cost of Preferred Stock	=	$17,365,000 / $223,828,509	
	=		**7.76%**

Source: Southern Union Company's response to Staff's Data Request 0065

MISSOURI GAS ENERGY
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Weighted Average Cost of Short-Term Debt as of December 31, 2005 for Southern Union Company

Month	Average STD Balance During Month	Interest Cost per Month
1/31/05	$267,000,000	$748,860
2/28/05	$220,000,000	$619,362
3/31/05	$120,000,000	$451,736
4/30/05	$93,500,000	$302,010
5/31/05	$114,900,000	$265,821
6/30/05	$152,000,000	$425,745
7/31/05	$197,500,000	$647,090
8/31/05	$269,000,000	$917,876
9/30/05	$273,000,000	$1,023,469
10/31/05	$307,000,000	$1,137,264
11/30/05	$377,000,000	$1,212,760
12/31/05	$420,000,000	$1,565,016
	$234,241,667	**$9,317,009**
AVERAGE	$234,241,667	$776,417
		= **3.98%**

Source: Southern Union's response to Staff Data Request No. 0066

SCHEDULE 12

MISSOURI GAS ENERGY
CASE NO. GR-2006-0422

Criteria for Selecting Comparable Natural Gas Distribution Companies

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Natural Gas Distribution Companies	Stock Publicly Traded	Information Printed In Value Line	10-Years of Data Available	*Positive DPS* Annualized Compound Growth Rate (1995 - 2005)	Total Capitalization <5 Billion	*Two* Sources for Projected Growth Available with One from Value Line	At Least Investment Grade Credit Rating	**Comparable Company Met All Criteria**
AGL Resources, Inc.	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Atmos Energy Corporation	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Cascade Natural Gas Corporation	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***
Delta Natural Gas Company, Inc.	Yes	Yes	Yes	Yes	Yes	No		
Energy West	Yes	Yes	No					
Energysouth, Inc.	Yes	Yes	Yes	Yes	Yes	No		
Laclede Group	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
New Jersey Resources Corporation	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Northwest Natural Gas Company	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Peoples Energy Corporation	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Piedmont Natural Gas Company, Inc.	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
RGC Resources, Inc.	Yes	Yes	Yes	Yes	Yes	No		
Semco Energy, Inc.	Yes	Yes	Yes	No				
South Jersey Industries, Inc.	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***
WGL Holdings, Inc.	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**

Sources: Column 1 = Edward Jones' Natural Gas Industry Summary, June 30, 2006.
Columns 2, 3, 4, 5, 6 and 7 = The Value Line Investment Survey: Ratings & Reports, September 15, 2006.
Column 7 = I/B/E/S Inc.'s Institutional Brokers Estimate System, September 14, 2006 and Standard & Poor's Earnings Guide, September 2006
Column 8 = Standard & Poor's RatingsDirect

Six Comparable Natural Gas Distribution Companies For Missouri Gas Energy

Number	Ticker Symbol	Company Name
1	ATG	AGL Resources, Inc.
2	NJR	New Jersey Resources Corporation
3	NWN	Northwest Natural Gas
4	PNY	Piedmont Natural Gas Company, Inc.
5	SJI	South Jersey Industries, Inc.
6	WGL	WGL Holdings, Inc.

Notes:
-Removed Atmos and Laclede from the comparable group because they have Missouri operations, but will analyze to determine possible effects of Missouri regulation.

-Removed Cascade Natural Gas and Peoples Energy Corporation because both companies are involved in mergers.

MISSOURI GAS ENERGY
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Ten-Year Dividends Per Share, Earnings Per Share & Book Value Per Share Growth Rates for the Six Comparable Natural Gas Distribution Companies, Atmos Energy Corporation, Laclede Group and Southern Union

	10-Year Annual Compound Growth Rates			
Company Name	DPS	EPS	BVPS	Average of 10 Year Annual Compound Growth Rates
AGL Resources, Inc.	1.50%	6.50%	5.50%	4.50%
New Jersey Resources Corp.	2.50%	7.50%	5.00%	5.00%
Northwest Natural Gas Co.	1.00%	1.50%	4.00%	2.17%
Piedmont Natural Gas Co.	5.50%	5.50%	6.50%	5.83%
South Jersey Industries, Inc.	1.50%	8.00%	5.50%	5.00%
WGL Holdings, Inc.	1.50%	4.50%	4.00%	3.33%
Average	**2.25%**	**5.58%**	**5.08%**	**4.31%**
Standard Deviation	1.52%	2.17%	0.89%	1.21%
Companies with Missouri Operations				
Atmos Energy Corporation	3.00%	4.00%	6.50%	4.50%
Laclede Group	1.00%	2.50%	3.00%	2.17%
Southern Union	NA	14.00%	10.50%	8.17%

Source: The Value Line Investment Survey: Ratings & Reports, September 15, 2006.

Notes:
NA = Not Applicable

MISSOURI GAS ENERGY
CASE NO. GR-2006-0422

Five-Year Dividends Per Share, Earnings Per Share & Book Value Per Share Growth Rates for the Six Comparable Natural Gas Distribution Companies, Atmos Energy Corporation, Laclede Group and Southern Union

	5-Year Annual Compound Growth Rates			
Company Name	DPS	EPS	BVPS	Average of 5 Year Annual Compound Growth Rates
AGL Resources, Inc.	2.00%	13.50%	8.50%	8.00%
New Jersey Resources Corp.	3.00%	8.50%	7.00%	6.17%
Northwest Natural Gas Co.	1.00%	5.00%	3.50%	3.17%
Piedmont Natural Gas Co.	5.00%	5.00%	6.50%	5.50%
South Jersey Industries, Inc.	2.50%	11.50%	13.00%	9.00%
WGL Holdings, Inc.	1.50%	6.00%	3.00%	3.50%
Average	**2.50%**	**8.25%**	**6.92%**	**5.89%**
Standard Deviation	1.29%	3.28%	3.33%	2.14%
Companies with Missouri Operations				
Atmos Energy Corporation	2.00%	6.50%	8.50%	5.67%
Laclede Group	0.50%	4.50%	2.50%	2.50%
Southern Union	NA	35.50%	6.00%	20.75%

Source: The Value Line Investment Survey: Ratings & Reports, September 15, 2006.

Notes:
NA = Not Applicable

SCHEDULE 15-2

MISSOURI GAS ENERGY
CASE NO. GR-2006-0422

Average of Ten and Five-Year Dividends Per Share, Earnings Per Share & Book Value Per Share Growth Rates for the Six Comparable Natural Gas Distribution Companies, Atmos Energy Corporation, Laclede Group and Southern Union

Company Name	10-Year Average DPS, EPS & BVPS	5-Year Average DPS, EPS & BVPS	Average of 5-Year & 10-Year Averages
AGL Resources, Inc.	4.50%	8.00%	6.25%
New Jersey Resources Corporation	5.00%	6.17%	5.58%
Northwest Natural Gas	2.17%	3.17%	2.67%
Piedmont Natural Gas Company, Inc.	5.83%	5.50%	5.67%
South Jersey Industries, Inc.	5.00%	9.00%	7.00%
WGL Holdings, Inc.	3.33%	3.50%	3.42%
Average	**4.31%**	**5.89%**	**5.10%**
Companies with Missouri Operations			
Atmos Energy Corporation	4.50%	5.67%	5.08%
Laclede Group	2.17%	2.50%	2.33%
Southern Union	8.17%	20.75%	14.46%

SCHEDULE 15-3

MISSOURI GAS ENERGY
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Historical and Projected Growth Rates for the Six Comparable Natural Gas Distribution Companies, Atmos Energy Corporation, Laclede Group and Southern Union

Company Name	(1) Historical Growth Rate (*DPS, EPS and* BVPS)	(2) Projected 5-Year Growth *IBES* (Mean)	(3) Projected 5-Year *EPS Growth* S&P	(4) Projected 3-5 Year *EPS Growth* Value Line	(5) Average *Projected* Growth	(6) Average of Historical & Projected Growth
AGL Resources, Inc.	6.25%	4.33%	4.00%	4.50%	4.28%	5.26%
New Jersey Resources Corporation	5.58%	5.25%	5.00%	4.50%	4.92%	5.25%
Northwest Natural Gas	2.67%	5.36%	5.00%	7.00%	5.79%	4.23%
Piedmont Natural Gas Company, Inc.	5.67%	4.00%	4.00%	6.00%	4.67%	5.17%
South Jersey Industries, Inc.	7.00%	6.00%	6.00%	7.00%	6.33%	6.67%
WGL Holdings, Inc.	3.42%	3.33%	3.00%	1.50%	2.61%	3.01%
	5.10%	**4.71%**	**4.50%**	**5.08%**	**4.77%**	**4.93%**
Companies with Missouri Operations						
Atmos Energy Corporation	5.08%	5.38%	5.00%	7.00%	5.79%	5.44%
Laclede Group	2.33%	4.00%	4.00%	5.00%	4.33%	3.33%
Southern Union	14.46%	7.75%	8.00%	12.00%	9.25%	11.85%

Proposed Range of Growth: 4.50%-5.10%

Column 5 = [(Column 2 + Column 3 + Column 4) / 3]

Column 6 = [(Column 1 + Column 5) / 2]

Sources: Column 1 = Average of 10-Year and 5-Year Annual Compound Growth Rates from Schedule 15-3.

Column 2 = I/B/E/S Inc.'s Institutional Brokers Estimate System, September 14, 2006.

Column 3 = Standard & Poor's Earnings Guide, September 2006.

Column 4 = The Value Line Investment Survey: Ratings and Reports, September 15, 2006.

MISSOURI GAS ENERGY
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Average High / Low Stock Price for May 2006 through August 2006
for the Six Comparable Natural Gas Distribution Companies,
Atmos Energy Corporation, Laclede Group and Southern Union

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	-- May 2006 --		-- June 2006 --		-- July 2006 --		-- August 2006 --		**Average High/Low Stock Price (5/06 - 8/06)**
Company Name	High Stock Price	Low Stock Price	High Stock Price	Low Stock Price	High Stock Price	Low Stock Price	High Stock Price	Low Stock Price	
AGL Resources, Inc.	$36.670	$34.630	$38.130	$35.360	$39.400	$37.160	$40.000	$34.970	**$37.040**
New Jersey Resources Corp.	$45.720	$42.850	$47.380	$43.950	$50.900	$46.340	$51.390	$47.410	**$46.993**
Northwest Natural Gas Co.	$36.000	$33.300	$37.040	$34.230	$38.430	$35.810	$38.530	$36.700	**$36.255**
Piedmont Natural Gas Co.	$24.880	$23.310	$25.400	$23.460	$26.170	$24.300	$26.180	$25.040	**$24.843**
South Jersey Industries, Inc.	$27.890	$25.630	$27.520	$25.800	$30.000	$27.200	$30.000	$28.000	**$27.755**
WGL Holdings, Inc.	$29.930	$27.040	$29.390	$27.820	$30.320	$28.440	$31.180	$29.010	**$29.141**
Companies with Missouri Operations									
Atmos Energy Corporation	$27.730	$25.550	$28.030	$26.010	$29.250	$27.750	$29.150	$27.630	**$27.638**
Laclede Group	$34.710	$31.700	$34.660	$32.010	$35.650	$33.100	$33.270	$31.600	**$33.338**
Southern Union	$26.220	$22.760	$27.220	$23.290	$27.750	$26.000	$27.750	$26.640	**$25.954**

Notes:

Column 9 = [(Column 1 + Column 2 + Column 3 + Column 4 + Column 5 + Column 6 + Column 7 + Column 8) / 8].

Sources: S & P Stock Guides: June, July, August, and September 2006.

MISSOURI GAS ENERGY
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Discounted Cash Flow (DCF) Estimated Costs of Common Equity for the Six Comparable Natural Gas Distribution Companies, Atmos Energy Corporation, Laclede Group and Southern Union

Company Name	(1) Expected Annual Dividend	(2) Average High/Low Stock Price	(3) Projected Dividend Yield	(4) Average of Historical & Projected Growth	(5) Average of Projected Growth	(6) Estimated Cost of Common Equity (Historical & Projected)	(7) Estimated Cost of Common Equity (Projected Only)
AGL Resources, Inc.	$1.54	$37.040	4.16%	5.26%	4.28%	9.42%	8.43%
New Jersey Resources Corp.	$1.48	$46.993	3.14%	5.25%	4.92%	8.39%	8.06%
Northwest Natural Gas Co.	$1.40	$36.255	3.86%	4.23%	5.79%	8.09%	9.65%
Piedmont Natural Gas Co.	$0.98	$24.843	3.94%	5.17%	4.67%	9.11%	8.61%
South Jersey Industries, Inc.	$0.94	$27.755	3.39%	6.67%	6.33%	10.05%	9.72%
WGL Holdings, Inc.	$1.37	$29.141	4.68%	3.01%	2.61%	7.70%	7.29%
Average			**3.86%**	**4.93%**	**4.77%**	**8.79%**	**8.63%**
Companies with Missouri Operations							
Atmos Energy Corporation	$1.27	$27.638	4.60%	5.44%	5.79%	10.03%	10.39%
Laclede Group	$1.42	$33.338	4.24%	3.33%	4.33%	7.58%	8.58%
Southern Union	$0.41	$25.954	1.58%	11.85%	9.25%	13.43%	10.83%
		Proposed Dividend Yield:					**3.85%**
		Proposed Range of Growth:					**4.50% - 5.10%**
		Estimated Proxy Cost of Common Equity:					**8.35%-8.95%**
		Recommended Cost of Common Equity					**8.65%-9.25%**

Notes: Column 1 = Estimated Dividends Declared per share represents the average projected dividends for 2006 and 2007.

Column 3 = (Column 1 / Column 2).

Column 6 = (Column 3 + Column 4).

Column 7 = (Column 3 + Column 5).

Sources: Column 1 = The Value Line Investment Survey: Ratings and Reports, September 15, 2006.

Column 2 = Schedule 17.

Column 4 = Schedule 16.

Column 5 = Schedule 16.

Capital Asset Pricing Model (CAPM) Costs of Common Equity Estimates
Based on Historical Return Differences Between Common Stocks and Long-Term U.S. Treasuries
for the Six Comparable Natural Gas Distribution Companies, Atmos Energy Corporation, Laclede Group and Southern Union

Company Name	(1) Risk Free Rate	(2) Company's Value Line Beta	(3) Arithmetic Average Market Risk Premium (1926-2005)	(4) Geometric Average Market Risk Premium (1926-2005)	(5) Geometric Average Market Risk Premium (1996-2005)	(6) Arithmetic CAPM Cost of Common Equity (1926-2005)	(7) Geometric CAPM Cost of Common Equity (1926-2005)	(8) Geometric CAPM Cost of Common Equity (1996-2005)
AGL Resources, Inc.	4.85%	0.95	6.50%	4.90%	1.48%	11.03%	9.51%	6.26%
New Jersey Resources Corp.	4.85%	0.80	6.50%	4.90%	1.48%	10.05%	8.77%	6.03%
Northwest Natural Gas Co.	4.85%	0.75	6.50%	4.90%	1.48%	9.73%	8.53%	5.96%
Piedmont Natural Gas Co.	4.85%	0.80	6.50%	4.90%	1.48%	10.05%	8.77%	6.03%
South Jersey Industries, Inc.	4.85%	0.70	6.50%	4.90%	1.48%	9.40%	8.28%	5.89%
WGL Holdings, Inc.	4.85%	0.80	6.50%	4.90%	1.48%	10.05%	8.77%	6.03%
Average		**0.80**				**10.05%**	**8.77%**	**6.03%**
Companies with Missouri Operations								
Atmos Energy Corporation	4.85%	0.75	6.50%	4.90%	1.48%	9.73%	8.53%	5.96%
Laclede Group	4.85%	0.85	6.50%	4.90%	1.48%	10.38%	9.02%	6.11%
Southern Union	4.85%	1.05	6.50%	4.90%	1.48%	11.68%	10.00%	6.40%

Sources:

Column 1 = The appropriate yield is equal to the average 30-year U.S. Treasury Bond yield for September 2006 which was obtained from the St. Louis Federal Reserve website at http://research.stlouisfed.org/fred2/series/GS30/22.

Column 2 = Beta is a measure of the movement and relative risk of an individual stock to the market as a whole as reported by the Value Line Investment Survey: Ratings & Reports, September 15, 2006.

Column 3 = The Market Risk Premium represents the expected return from holding the entire market portfolio less the expected return from holding a risk free investment. The appropriate Market Risk Premium for the period 1926 - 2005 was determined to be 6.50% based on an arithmetic average as calculated in Ibbotson Associates, Inc.'s Stocks, Bonds, Bills, and Inflation: 2006 Yearbook.

Column 4 = The Market Risk Premium represents the expected return from holding the entire market portfolio less the expected return from holding a risk free investment. The appropriate Market Risk Premium for the period 1926 - 2005 was determined to be 4.90% based on a geometric average as calculated in Ibbotson Associates, Inc.'s Stocks, Bonds, Bills, and Inflation: 2006 Yearbook.

Column 5 = The Market Risk Premium represents the expected return from holding the entire market portfolio less the expected return from holding a risk free investment. The appropriate Market Risk Premium for the period 1996 - 2005 was determined to be 1.48% as calculated in Ibbotson Associates, Inc.'s Stocks, Bonds, Bills, and Inflation: 2006 Yearbook.

Column 6 = (Column 1 + (Column 2 * Column 3)).

Column 7 = (Column 1 + (Column 2 * Column 4)).

Column 8 = (Column 1 + (Column 2 * Column 5)).

Selected Financial Ratios for the Six Comparable Natural Gas Distribution Companies, Atmos Energy Corporation, Laclede Group and Southern Union

Company Name	(1) 2005 Common Equity Ratio	(2) 2005 Long-Term Debt Ratio	(3) EBITDA Interest Coverage	(4) Funds From Operations to Total Debt	(5) Market-to-Book Value	(6) 2005 Return on Common Equity	(7) 2006 Projected Return on Common Equity	(8) Bond Rating
AGL Resources, Inc.	48.10%	51.90%	5.00 x	18.2%	1.78 x	12.90%	13.00%	A-
New Jersey Resources Corp.	58.00%	42.00%	NA	NA	2.33 x	17.00%	16.00%	A+
Northwest Natural Gas Co.	53.00%	47.00%	4.80 x	19.9%	1.72 x	9.90%	10.00%	AA-
Piedmont Natural Gas Co.	58.60%	41.40%	5.40 x	24.1%	2.09 x	11.50%	12.00%	A
South Jersey Industries, Inc.	55.10%	44.90%	5.00 x	13.5%	2.00 x	12.40%	13.00%	BBB+
WGL Holdings, Inc.	58.60%	39.50%	6.70 x	25.7%	1.58 x	12.00%	10.00%	AA-
Average	**55.23%**	**44.45%**	**5.38 x**	**20.3%**	**1.92 x**	**12.62%**	**12.33%**	**A**
Companies with Missouri Operations								
Atmos Energy Corporation	42.30%	57.70%	3.90 x	14.1%	1.37 x	8.50%	9.00%	BBB
Laclede Group	51.80%	48.10%	3.50 x	14.8%	1.71 x	10.90%	11.00%	A
Southern Union	41.60%	52.50%	3.80 x	13.6%	1.59 x	11.00%	12.00%	BBB

Sources:

The Value Line Investment Survey Ratings & Reports, September 15, 2006: for columns (1), (2), (6) and (7).
Standard & Poor's CreditStats for columns (3) and (4).
Standard & Poor's research reports for column (8).
AUS Utility Reports, September 2006 for column (5).

Notes:
NA = Not Available from CreditStats

MISSOURI GAS ENERGY
CASE NO. GR-2006-0422

Public Utility Revenue Requirement

or

Cost of Service

The formula for the revenue requirement of a public utility may be stated as follows :

Equation 1 : **Revenue Requirement = Cost of Service**

or

Equation 2 : **R R = O + (V - D) R**

The symbols in the second equation are represented by the following factors :

R R	=	Revenue Requirement
O	=	Prudent Operating Costs, including Depreciation and Taxes
V	=	Gross Valuation of the Property Serving the Public
D	=	Accumulated Depreciation
(V - D)	=	Rate Base (Net Valuation)
(V - D) R	=	Return Amount ($$) or Earnings Allowed on Rate Base
R	=	i L + d P + k E or Overall Rate of Return (%)
i	=	Embedded Cost of Debt
L	=	Proportion of Debt in the Capital Structure
d	=	Embedded Cost of Preferred Stock
P	=	Proportion of Preferred Stock in the Capital Structure
k	=	Required Return on Common Equity (ROE)
E	=	Proportion of Common Equity in the Capital Structure

MISSOURI GAS ENERGY
CASE NO. GR-2006-0422

Weighted Cost of Capital as of December 31, 2005 for Missouri Gas Energy

Capital Component	Percentage of Capital	Embedded Cost	Weighted Cost of Capital Using Common Equity Return of: 8.65%	8.95%	9.25%
Common Stock Equity	36.31%	---	3.14%	3.25%	3.36%
Preferred Stock	5.00%	7.76%	0.39%	0.39%	0.39%
Long-Term Debt	57.57%	7.70%	4.43%	4.43%	4.43%
Short-Term Debt	1.11%	3.98%	0.04%	0.04%	0.04%
	100.00%		**8.01%**	**8.12%**	**8.23%**

Notes:

See Schedule 9 for the Capital Structure Ratios.

See Schedule 10 for the Embedded Cost of Long-Term Debt.

See Schedule 11 for the Embedded Cost of Preferred Stock.

See Schedule 12 for Weighted Average Cost of Short-Term Debt.

SCHEDULE 22

STANDARD & POOR'S RATINGSDIRECT

RESEARCH

Research Update:

Southern Union And Affiliates 'BBB' Ratings Put On Watch Neg

Publication date: 15-Sep-2006
Primary Credit Analyst: Plana Lee, New York (1) 212-438-3119; plana_lee@standardandpoors.com

Rationale

On Sept. 15, 2006, Standard & Poor's Ratings Services placed its 'BBB' corporate credit ratings on Southern Union Co. and affiliates Panhandle Eastern Pipe Line L.P., CrossCountry Energy LLC, Transwestern Holding Co. LLC, and Transwestern Pipeline Co. LLC on CreditWatch with negative implications following Southern Union's announcement of a series of transactions that will effectively increase its ownership interest in Citrus Corp., parent to Florida Gas Transmission Co. (BBB+/Stable/--), to 50% from 25%, and eliminate its ownership interest in Transwestern Pipeline.

At the same time, Standard & Poor's affirmed its 'BBB+' corporate credit rating on Florida Gas Transmission. The outlook is stable.

The rating affirmation for Florida Gas is based on its continued ownership by affiliates of Southern Union and El Paso Corp. As a result of the transactions, GE Commercial Finance Energy Financial Services will exit its ownership interest in CCE Holdings LLC (CCEH), and Energy Transfer Partners L.P. will own 100% of Transwestern Pipeline.

The CreditWatch listing on Southern Union reflects its expected contribution of approximately $455 million to repay its pro rata share of CCEH's existing debt and to fund the remainder of the transactions. Resolution of the CreditWatch listing on Southern Union will depend on the way in which it finances the transactions.

The CreditWatch listing on Transwestern Pipeline and Transwestern Holding reflects the uncertain effect that its change of ownership will have on its financial profile and future strategic direction.

Although Southern Union's increased ownership interest in Florida Gas Transmission and decreased ownership interest in Transwestern Pipeline should improve its business risk profile, the company's credit quality may also be affected by its financing plan for the transactions. On Aug. 24, 2006, Southern Union completed the sale of its Pennsylvania and Rhode Island utilities for $1.15 billion, which was an important step in repairing its financial credit protection measures following the company's $1.6 billion purchase of Sid Richardson Energy Services.

The CreditWatch listings will likely be resolved closer to the closing of the transactions. Completion of the regulatory approval process is expected to occur in the fourth quarter of 2006.

Ratings List

Ratings Placed On Watch Neg

	To	From
Southern Union Co.		
Corporate Credit Rating	BBB/Watch Neg/--	BBB/Negative/--
Senior Unsecured		
Local Currency	BBB/Watch Neg	BBB
Preferred Stock		

Local Currency	BB+/Watch Neg	BB+
Panhandle Eastern Pipe Line LP		
Corporate Credit Rating	BBB/Watch Neg/--	BBB/Negative/--
Senior Unsecured		
Local Currency	BBB/Watch Neg	BBB
CrossCountry Energy LLC		
Corporate Credit Rating	BBB/Watch Neg/--	BBB/Stable/--
Transwestern Pipeline Co. LLC		
Corporate Credit Rating	BBB/Watch Neg/--	BBB/Stable/--
Transwestern Holding Co. LLC		
Corporate Credit Rating	BBB/Watch Neg/--	BBB/Stable/--
Ratings Affirmed		
Florida Gas Transmission Co.		
Corporate Credit Rating	BBB+/Stable/--	

Complete ratings information is available to subscribers of RatingsDirect, the real-time Web-based source for Standard & Poor's credit ratings, research, and risk analysis, at www.ratingsdirect.com. All ratings affected by this rating action can be found on Standard & Poor's public Web site at www.standardandpoors.com; under Credit Ratings in the left navigation bar, select Find a Rating, then Credit Ratings Search.

STANDARD &POOR'S RATINGSDIRECT

RESEARCH

Summary: Southern Union Co.

Publication date: 27-Jul-2006
Primary Credit Analyst: Plana Lee, New York (1) 212-438-3119; plana_lee@standardandpoors.com

Credit Rating: BBB/Negative/--

Rationale

The ratings on Southern Union Co. and subsidiary Panhandle Eastern Pipe Line LP reflect consolidated Southern Union's satisfactory business risk profile and intermediate financial risk profile. Houston, Texas-based Southern Union engages in natural gas transportation, storage, liquefied natural gas (LNG) terminaling, gathering, processing, and distribution. Consolidated Southern Union had about $2.1 billion of long-term debt as of March 31, 2006.

Southern Union's credit strengths include the cash flow stability of its regulated interstate natural gas pipeline assets, a hedging program designed to mitigate the commodity price exposure of its newly acquired gathering and processing segment (privately held Sid Richardson Energy Services, now known as Southern Union Gas Services (SUGS)), and its low-risk gas distribution business in Missouri.

Southern Union's pipeline assets (about 60% of total expected 2006 EBITDA) include wholly owned Panhandle Eastern Pipe Line and its subsidiaries (collectively Panhandle Energy), which transport gas from the Gulf Coast and Anadarko basin to the Midwest and Great Lakes markets. Southern Union also has a 50% ownership interest in CrossCountry Energy LLC, which includes Transwestern Pipeline Co. LLC and a 50% interest in Florida Gas Transmission Co. (see Standard & Poor's Ratings Services' summary analysis on Transwestern published on May 31, 2006, and the summary analysis on Florida Gas Transmission published on June 9, 2006). Southern Union's pipeline segments bring stability to its cash flows due to their generally favorable FERC regulation, access to multiple supply points, strong markets, and manageable recontracting risk.

These strengths are partially offset by the greater risk of the gathering and processing segment at newly the acquired SUGS (30% of total expected 2006 EBITDA) and Trunkline LNG segment. Southern Union's acquisition of SUGS for $1.6 billion in March 2006 increased its business and financial risk. The purchase price was financed initially entirely with debt. Furthermore, SUGS' percent-of-proceeds contracts account for about 80% to 85% of its margins, which expose the company to volatile commodity prices.

The commodity price risk at SUGS is somewhat mitigated by a hedging program consisting of puts with an $11 floor for 2006 on 45,000 million BTU (MMBtu) per day (about 85% of expected volumes) and a $10 floor for 2007 on 25,000 MMBtu per day (about 50% of volumes). Furthermore, the remaining contracts are fee-based and none are keep-whole contracts. Operationally, SUGS' market-share position is strong in Texas and New Mexico. SUGS also connects to Southern Union's existing CrossCountry asset base. Transwestern is one of the major gas pipelines in the Permian basin, where SUGS has operated for more than 60 years.

Southern Union's Trunkline LNG facility also adds risk to the consolidated entity, as the segment remains subject to the economics of a developing global LNG market. Capital costs are expected to reach about $250 million for the LNG infrastructure enhancement project, which will add ambient air vaporization and natural gas liquids extraction capabilities to the terminal. These risks are moderated by a contract with BG Group Ltd. (a global natural gas company) that extends through 2028, including recently expanded Phase II capacity. The infrastructure enhancement project is also fully contracted with BG under long-term contracts, and is expected to add an estimated $35 million to $40 million in EBIT on completion in 2008.

After the sale of Southern Union's Rhode Island and Pennsylvania utilities, Missouri Gas Energy (MGE, 10% of total expected 2006 EBITDA) will be its only remaining low-risk gas-distribution business. MGE's strong business risk profile reflects reasonable regulation by the Missouri Public Service Commission, a mostly residential customer base, the ability to recover fuel costs from customers as they are incurred, a franchise with Kansas City, Mo. that extends through 2010, and a perpetual franchise with St. Joseph, Mo.

Southern Union's financial profile has been substantially weaker than expectations for the 'BBB' category for the past few years. Standard & Poor's places significant reliance on management's commitment to credit quality and its understanding that improving its balance sheet must remain a high priority versus growth-oriented investments.

Specifically, Southern Union is expected to use the proceeds of its estimated $1.1 billion sale of its Pennsylvania and Rhode Island distribution businesses, as well as a balanced mix of equity and debt, to repay the $1.6 billion bridge loan used to finance its SUGS acquisition. The ratings also incorporate expected equity issuances of $125 million in 2006 and $100 million in 2008 associated with convertible notes issued in 2003 and 2005. When these notes are remarketed, the company is expected to use the proceeds to pay down other debt.

Given Southern Union's movement away from natural gas utilities and toward the midstream industry, cash flows have become less predictable and, as a result, stronger credit-protection measures are also expected for the current rating level. Current ratings incorporate expectations for an intermediate financial risk profile, with expected funds flow from operations (FFO) to total debt of about 15%, interest coverage of about 3.5x, and total debt to capital of less than 50% by 2007.

Liquidity

Southern Union's liquidity is adequate. The company's primary liquidity source is cash flow from operations, which was $156.9 million for the three months ended March 31, 2006. Cash on hand was $19.5 million as of March 31, 2006. The company also has access to a $400 million revolving credit facility maturing in May 2010, of which $305 million was outstanding as of March 31, 2006. Consolidated Southern Union's long-term debt maturities over the next several years are $125 million for the remainder of 2006, $455 million in 2007, $400 million in 2008, and $60 million in 2009.

The company also has a 364-day, $1.6 billion bridge loan, which it used to finance its acquisition of SUGS on March 1, 2006. The terms of the bridge loan require the company to apply 100% of the net cash proceeds from asset dispositions and the issuance of equity and/or debt toward repayment of the bridge loan. Southern Union has entered into agreements to sell its Rhode Island and Pennsylvania utilities, and proceeds are expected to be about $1.1 billion.

Outlook

The negative outlook highlights the challenges the company faces in restoring its financial profile to acceptable levels within a reasonable time frame following its acquisition of SUGS. In addition, Southern Union must offset its increased business risk by strengthening its consolidated financial profile to maintain the current rating. Failure to achieve expected credit metrics would result in a downgrade. Conversely, an outlook revision to stable could occur if SUGS is integrated without incident into Southern Union, and the company's financial profile improves to a level consistent with the 'BBB' rating in two years.

rating, it receives no payment for doing so, except for subscriptions to its publications. Additional information about our ratings fees is available at www.standardandpoors.com/usratingsfees.