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/S/ Patrice Petersen-Klein

BEFORE THE

KANSAS CORPORATION COMMISSION

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by
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of Kansas

**KANSAS GAS SERVICE
A DIVISION OF ONEOK, INC.**

DIRECT TESTIMONY

OF

BRUCE H. FAIRCHILD

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DIRECT TESTIMONY OF BRUCE H. FAIRCHILD

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. Bruce H. Fairchild, 3907 Red River, Austin, Texas 78751.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT POSITION.

A. I am a principal in Financial Concepts and Applications, Inc. (FINCAP), a firm engaged in financial, economic, and policy consulting to business and government.

A. Qualifications

Q. DESCRIBE YOUR EDUCATIONAL BACKGROUND, PROFESSIONAL QUALIFICATIONS, AND PRIOR EXPERIENCE.

A. I hold a BBA degree from Southern Methodist University and MBA and PhD degrees from the University of Texas at Austin. I am also a Certified Public Accountant. My previous employment includes working in the Controller's Department at Sears, Roebuck and Company and serving as Assistant Director of Economic Research at the Public Utility Commission ("PUC") of Texas. I have also been on the business school faculties at the University of Colorado at Boulder and the University of Texas at Austin, where I taught undergraduate and graduate courses in finance and accounting.

Q. BRIEFLY DESCRIBE YOUR EXPERIENCE IN UTILITY-RELATED MATTERS.

A. While at the Texas PUC, I assisted in managing a division comprised of approximately twenty-five professionals responsible for financial analysis, cost allocation and rate design, economic and financial research, and data processing systems. I testified on behalf of the PUC staff in numerous cases involving most major investor-owned and cooperative electric, telephone, and water/sewer utilities in the state regarding a variety of financial, accounting, and economic issues. Since forming FINCAP in 1979, I have participated in a wide range of analytical assignments involving utility-related matters on behalf of utilities, industrial consumers, municipalities, and regulatory commissions. I have also prepared and presented expert testimony before a number of regulatory authorities addressing revenue requirements, cost allocation, and rate design issues for gas, electric, telephone, and water/sewer utilities. I have been a frequent speaker at regulatory conferences and seminars and have published research concerning various regulatory issues. A resume that contains the details of my experience and qualifications is attached as Appendix A, with Appendix B listing my prior testimony before regulatory agencies since leaving the Texas PUC.

B. Overview

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to develop an overall rate of return to apply to the rate base of Kansas Gas Service, A Division of ONEOK, Inc. ("KGS").

Q. WHAT IS THE ROLE OF THE RATE OF RETURN IN SETTING A UTILITY'S RATES?

A. The rate of return serves to compensate shareholders for the use of their capital to finance the plant and equipment necessary to provide utility service to customers. Investors only commit money in anticipation of earning a return on their investment commensurate with that from other investment alternatives having comparable risks. Consistent with both sound regulatory economics and the standards specified in the U.S Supreme Court cases of *Bluefield Water Works & Improvement Co.* (1923) and *Hope Natural Gas Co.* (1944), the rate of return a utility is to be given a reasonable opportunity to earn must be sufficient to: 1) fairly compensate capital presently invested in the utility, 2) enable the utility to offer a return adequate to attract new capital on reasonable terms, and 3) maintain the utility's financial integrity.

Q. IN GENERAL, HOW DID YOU GO ABOUT DEVELOPING A FAIR RATE OF RETURN FOR KGS?

A. My evaluation began with a review of the operations and finances of KGS and general conditions in the natural gas industry and capital markets. With this background, I next developed a mix of investor-supplied capital (*i.e.*, debt and common equity) to be used as weightings in calculating an overall rate of return. An average cost of debt applicable to the debt component of the capital structure was then calculated. Next, various analyses were conducted to determine a fair rate of return on common equity ("ROE"). These included applications of the discounted cash flow ("DCF") model, capital asset pricing model ("CAPM"), risk premium method, and comparable earnings method to develop a cost of equity range. From this range, I selected my recommended ROE giving consideration to flotation costs and the outlook for capital costs. Finally, the above findings were combined to calculate an overall rate of return for KGS.

C. Summary of Conclusions

Q. WHAT IS YOUR RATE OF RETURN RECOMMENDATION?

A. I recommend that KGS be authorized an overall rate of return of 8.52%. As shown on Schedule BHF-1, this rate of return is based on capital structure ratios of 41.15% long-term debt and 58.85% common equity, a cost of debt of 5.33%, and an ROE of 10.75%.

II. FUNDAMENTAL ANALYSES

Q. WHAT IS THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY?

A. As a predicate to subsequent quantitative analyses, this section briefly reviews the operations and finances of KGS. It also examines the natural gas distribution industry along with conditions in the capital markets and U.S. economy.

A. Kansas Gas Service

Q. BRIEFLY DESCRIBE KGS.

A. KGS is the operating division of ONEOK, Inc. that distributes natural gas to approximately two-thirds of the market in Kansas, including the cities of Kansas City, Overland Park, Topeka, and Wichita.

Q. BRIEFLY DESCRIBE ONEOK, INC.

A. ONEOK, Inc. is the largest natural gas distributor in Kansas and Oklahoma and the third largest in Texas. ONEOK, Inc. is also engaged in natural gas marketing and trading throughout the U.S. and Canada, and is the general partner and an approximately 43% owner of ONEOK Partners, L.P. (ONEOK Partners), a publicly traded master limited partnership (MLP) that gathers, processes, stores, and transports natural gas and liquids. At December 31, 2011, ONEOK, Inc.'s consolidated balance sheet, which includes ONEOK Partners, lists total assets of approximately $13.7 billion. Of this amount, $8.9 billion is attributable to ONEOK Partners, $3.4 billion to ONEOK, Inc.'s gas distribution operations, and the remaining $1.4 billion to its Energy Services and corporate activities. ONEOK, Inc.'s common stock is publicly traded on the New York Stock Exchange (NYSE), and its debt is rated triple-B by both Moody's Investor Services (Moody's) and Standard & Poor's Corporation (S&P), which places it at the lower end of the investment grade rating scale.

B. Natural Gas Distribution Industry

Q. PLEASE DESCRIBE THE NATURAL GAS DISTRIBUTION INDUSTRY.

A. Natural gas local distribution companies ("LDCs") typically transport, deliver, and sell natural gas from receipt points on inter- and intrastate pipelines to households and businesses. LDCs often have an exclusive right to operate in a specified geographic area, with their rates and operations being subject to the jurisdiction of state or local regulatory authorities. Historically, LDCs provided only "bundled" service, which included the transportation, distribution, and natural gas itself, although a number now allow customers to choose their own gas supplier, with the LDC providing the delivery and service of that gas. Such structural changes, which have occurred on both the demand and supply sides, have eroded the traditional monopoly status of many gas utilities, with LDCs experiencing "bypass" as large commercial and industrial customers seek to acquire gas supplies at the lowest possible prices and, in the process, abandoned traditional "full-service" utility suppliers.

Q. WHAT RISKS DO LDCS FACE THAT ARE OF CONCERN TO INVESTORS?

A. LDCs face a variety of market, operating, capital-related, and regulatory risks. The natural gas business is increasingly competitive and complex, with LDCs having to vie with electric companies, oil and propane suppliers, and, in some cases, energy marketers and trading companies. Moreover, past volatility in natural gas prices may negatively impact customers' perception of natural gas. The demand for natural gas is highly weather sensitive (due both to normal variations and severe conditions) and seasonal, with energy efficiency and technological advances adversely affecting growth over time, especially in the residential sector. The financial results of LDCs are heavily dependent on general economic conditions, not only in terms of the overall activity of businesses but also in the growth of households and use per customer. Consider, for example, the following observation by The Value Line Investment Survey (*Value Line*) in its December 9, 2011 discussion of the Natural Gas Utility industry:

> Conditions in the United States remain tough, attributable partly to softness in the housing market. A high unemployment rate has fur-

> ther complicated matters. Indeed, GDP growth was an unspectacular 2.5% in the third quarter, and this moderate pace of expansion will probably continue during the fourth quarter and into the new year. As a result, consumers have been focusing on energy conservation. Of course, all these trends bode ill for the revenue of companies included in the Natural Gas Utility Industry. (p. 541)

With respect to operations, gas distribution inherently involves a variety of hazards and operating risks, including leaks, accidents, and third-party damages. Many LDCs are faced with substantial known and unknown environmental costs (*e.g.*, clean-up of manufactured gas plant sites) and post-retirement employee costs (*e.g.*, pensions and medical benefits). Inflation and other increases could adversely impact LDCs' ability to control operating expenses and costs, and interruptions in gas supply, strikes, natural disasters, security breaches, and terrorist activities could disrupt or shutdown operations. Finally, most LDCs are involved in ongoing legal or administrative proceedings before courts and governmental bodies related to a variety of matters (*e.g.*, general claims, taxes, environmental issues, billing, and credit and collection matters), which could result in detrimental outcomes.

Regarding capital-related risks, virtually all LDCs are facing significant infrastructure improvements to meet customer service requirements and improve system reliability, as well as satisfy a number of government-mandated safety initiatives. The ability of LDCs to fund these and other capital expenditures is affected by a variety of factors, including regulatory decisions, maintenance of a sufficient bond rating, capital market conditions (*e.g.*, interest rates), and availability of credit facilities and access to capital markets. In addition, LDCs' ability to retain and attract capital is subject to changes in state and federal tax laws and accounting standards, which could adversely affect their cash flows and financial condition.

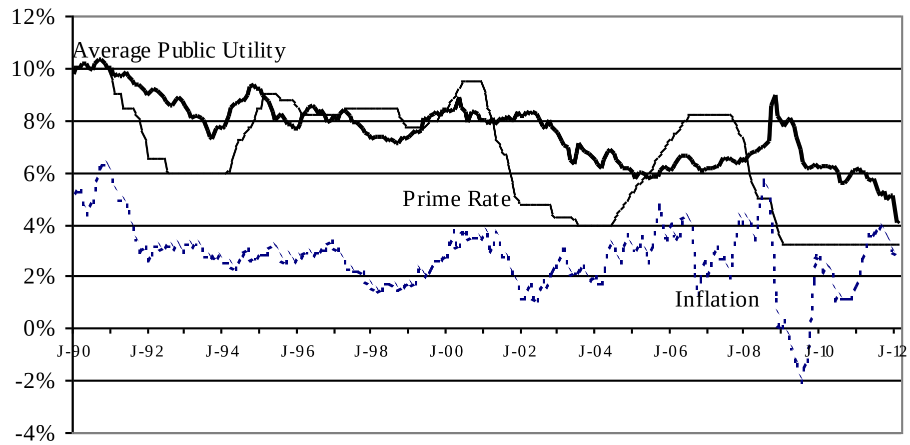
Finally, because most aspects of an LDC's operations (*e.g.*, rates; operating terms and conditions of service; types of services offered; construction of new facilities; the integrity, safety, and security of facilities and operations; acquisition, extension, or abandonment of services or facilities; reporting and information posting requirements; maintenance of accounts and records; and relationships with affiliate companies) are subject to government oversight, investors are understandably concerned with rate, safety, and environmental regulation. Potential changes in laws, regulations, and policies, as well as the inherent uncertainty surrounding regulatory decisions, all represent significant risks to LDCs.

C. <u>Capital Markets</u>

Q. WHAT HAS BEEN THE PATTERN OF INTEREST RATES OVER THE LAST TWO DECADES?

A. Average long-term public utility bond rates, the monthly average prime rate, and inflation as measured by the Consumer Price Index (CPI) since 1990 are plotted in Figure 1 below. After rising to approximately 10% in mid-1990, the average yield on long-term public utility bonds generally fell because of monetary and fiscal policies designed to keep the economy growing. This ended abruptly with the 2008 financial market meltdown and global recession. Investors became exceedingly risk averse, causing interest rates on corporate bonds to spike, while government policies pushed down the prime rate and depressed economic conditions and lower energy prices reduced inflation.

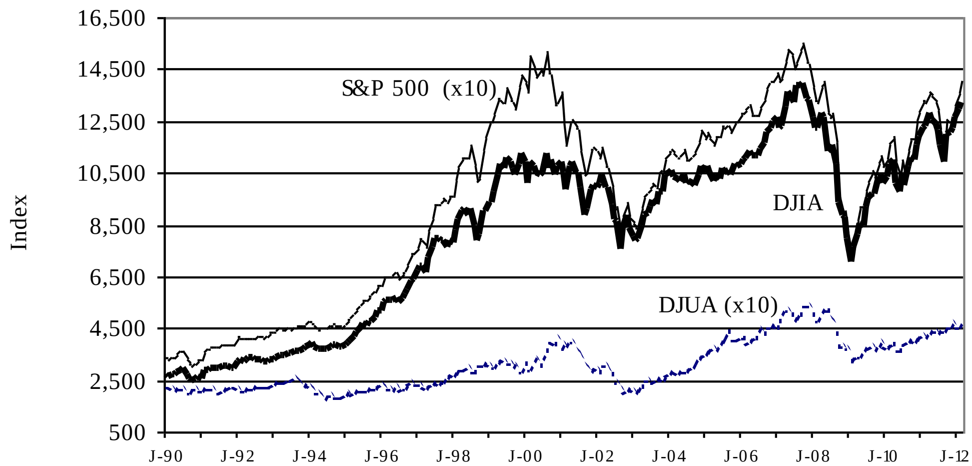
FIGURE 1
Utility Bond Yields, Prime Rate, and CPI



Q. HOW HAS THE MARKET FOR COMMON EQUITY CAPITAL PERFORMED?

A. Between 1990 and early 2000, stock prices climbed steadily higher as the longest bull market in United States history continued unabated. In mid-2000, mounting concerns over prospects for future growth, particularly for firms in the high technology and telecommunications sectors, pushed equity prices lower, in some cases precipitously. Common stock prices generally recovered and reached record highs, buoyed in large part by widespread acquisition activity, until the capital market crisis and global recession hit in 2008. Stock prices tumbled by some 40%, and although they have largely recovered, the market remains volatile, with share values routinely changing in full percentage points during a single day's trading. Figure 2 below plots the performances of the Dow-Jones Industrial Average, the S&P 500, and the Dow Jones Utility Average since 1990 (the latter two indices were scaled for comparability).

FIGURE 2
Stock Index Prices



Q. WHAT IS THE OUTLOOK FOR THE U.S. ECONOMY?

A. While there are signs that the U.S. economy is beginning to recover from the Great Recession, unemployment remains high, business and consumer spending continues to be cautious, and economic activity is guarded. There are questions whether the federal stimulus package and the actions by the Federal Reserve Board ("Fed") to keep interest rates low are having their desired effects on economic recovery. Indeed, the outlook remains tenuous, with persistent stock and bond price volatility providing tangible evidence of the uncertainties faced by the U.S. economy.

Q. HOW DO THESE ECONOMIC UNCERTAINTIES AFFECT LDCS?

A. Uncertainties over an economic recovery heighten the risks faced by LDCs, which, as described earlier, face a variety of operating and financial challenges. Current levels of unprecedented federal deficit spending and government borrowing portend higher inflation and interest rates, which will place additional pressure on the adequacy of existing service rates. The capital markets continue to be in a state of turmoil, affecting both the availability and cost of debt and equity that utilities rely on to fund their capital spending requirements. Overshadowing everything, the U.S. and global economies remain precarious, which only increases the risks faced by the natural gas industry, including LDCs.

III. CAPITAL STRUCTURE AND COST OF DEBT

Q. WHAT IS THE PURPOSE OF THIS SECTION?

A. This section discusses the implications of capital structure on risk and rate of return, and examines the capital structures maintained by ONEOK, Inc. and other LDCs. Based on these analyses, a mix of investor-supplied capital for use in weighting the cost of each source of permanent capital is developed. Finally, this section identifies the cost of debt applicable to the debt component of the capital structure.

A. Principles

Q. WHAT IS THE ROLE OF CAPITAL STRUCTURE IN SETTING A UTILITY'S RATE OF RETURN?

A. A utility's capital structure reflects the mix of capital – debt, preferred stock, and common equity – used to finance the utility’s assets. The proportions of a utility's total capitalization attributable to each source of capital are typically used to weight the costs of debt and preferred stock, and rate of return on common equity, in calculating an overall rate of return.

Q. WHY DOES THIS WEIGHTING MATTER?

A. The capital structure ratios determine how much weight is given to a particular source of capital and, because the costs of debt and preferred stock, and the rate of return on common equity, are not the same, this affects the weighted average cost, or overall rate of return, of all sources of capital.

Q. HOW DOES THE USE OF GREATER AMOUNTS OF DEBT AFFECT THE RATES OF RETURN REQUIRED BY INVESTORS?

A. A higher debt ratio, or lower common equity ratio, translates into increased financial risk for all investors. A greater amount of debt, and preferred stock, means more investors have a senior claim on available cash flow, thereby reducing the certainty that each will receive his contractual payments. This, in turn, increases the risks to which lenders and preferred stockholders are exposed, and they require correspondingly higher rates of interest and dividends, respectively, for bearing this increased risk. From common shareholders' viewpoint, higher debt and preferred stock ratios mean that there are proportionately more investors ahead of them, thereby increasing the uncertainty as to the amount of cash flow, if any, that will remain. Again, in accordance with the fundamental risk-return trade-off principle to be discussed in greater detail later, common shareholders require a correspondingly higher rate of return to compensate them for bearing the greater financial risk associated with a lower common equity ratio.

B. <u>Capital Structure Ratios</u>

Q. WHAT SOURCES OF CAPITAL ARE USED TO FINANCE KGS'S INVESTMENT IN UTILITY PLANT?

A. As an operating division of ONEOK, Inc., KGS has no independent financing, and relies entirely on capital supplied by ONEOK, Inc. to finance its investment in assets.

Q. WHAT IS ONEOK, INC.'S CURRENT CAPITAL STRUCTURE?

A. As shown on Schedule 7-A of KGS's rate filing, at March 31, 2012, ONEOK, Inc. was financed with approximately $1.716 billion in long-term debt and $2.256 billion in common equity.

Q. WERE ANY ADJUSTMENTS MADE TO THESE BALANCES OF LONG-TERM DEBT AND COMMON EQUITY?

A. Yes. Summarized on Schedule 7-C of KGS's rate filing, four adjustments were made to the $1.716 billion recorded as ONEOK, Inc.'s long-term debt. The first two removed $445,000 and $1.332 million, or a total of $1.777 million, of debt directly related to military bases in Oklahoma and Texas, respectively, which are unrelated to KGS. The next two adjustments, which net to $26.971 million, removed $28.346 million booked to long-term debt that was related to terminated interest swaps and added $1.375 million in unamortized premiums and discounts. It is my understanding that these adjustments to ONEOK, Inc.'s long-term debt are consistent with those made in KGS's last rate case, Docket No. 06-KGSG-1209-RTS (the "1209 Docket").

Meanwhile, ONEOK, Inc.'s $2.256 billion in common equity was adjusted pursuant to the Commission's order in Docket No. 07-ATMG-387-ACT[1]. In particular, $157.520 million in charges related to pension and post-retirement benefits under Statement of Financial Accounting Standards 158 were restored, producing an adjusted common equity balance of $2,413,672,709.

These adjustments resulted in the following capital structure for KGS, which produced adjusted capital structure ratios of 41.15% long-term debt and 58.85% common equity:

TABLE 1

Capital Component	Amount	% of Total
Long-term Debt	$ 1,687,715,000	41.15%
Common Equity	2,413,672,709	58.85%
Total	**$ 4,101,387,709**	**100.00%**

Q. HOW ARE LDCS NORMALLY FINANCED?

A. Based on data published by the American Gas Association ("AGA"), the gas distribution industry maintained the following composite structure ratios between 2006 and 2010:

TABLE 2

Capital Component	2010	2009	2008	2007	2006
Long-term Debt	40.3%	42.2%	43.7%	41.7%	43.2%
Preferred Stock	0.9%	0.8%	1.1%	0.8%	0.9%
Common Equity	58.8%	57.0%	55.2%	57.5%	55.9%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

[1] Docket No. 07-ATMG-387-ACT, Order dated January 24, 2007.

Table 2 indicates that gas distribution companies currently finance their investment in utility plant with approximately 41% long-term debt and preferred stock and 59% common equity.

Alternatively, Schedule BHF-2 displays the capital structure ratios over the 2007-2011 period for a group of nine LDCs with publicly traded common stock. These are the firms included in *Value Line's* Natural Gas Utility industry that are predominantly involved in natural gas distribution. The average capital structure ratios for this group of LDCs at their last five fiscal year-ends are summarized in Table 3:

TABLE 3

Capital Component	2011	2010	2009	2008	2007
Long-term Debt	43.5%	44.6%	45.5%	44.9%	45.6%
Preferred Stock	0.2%	0.2%	0.2%	0.2%	0.2%
Common Equity	56.4%	55.2%	54.4%	54.9%	54.2%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

As evidenced above, there has been a general trend by these LDCs to rely less on debt financing and increase the amount of common equity used to finance gas utility plant, to where they are currently financed with an average of approximately 44% debt and 56% equity. Around these 2011 averages, individual LDC debt ratios ranged from 35.1% to 51.7%, with equity ratios extending from a low 48.3% to high of 64.1%.

Q. WHAT DO YOU CONCLUDE FROM THESE DATA?

A. A comparison of the 41.15% debt and 58.85% common equity ratios developed earlier for KGS as of March 31, 2012 with those displayed above for different groups of LDCs demonstrates that they are well within industry norms. Therefore, I recommend that they be used for purposes of developing KGS's rate of return in the present case.

C. Cost of Debt

Q. WHAT IS THE AVERAGE COST OF ONEOK, INC.'S LONG-TERM DEBT?

A. Developed in Schedule 7-B of KGS's rate filing, the average embedded cost of the $1,687,715,000 of long-term debt included in the capital structure used for KGS is 5.33%. This cost of debt is calculated consistently with how I understand it has been in KGS's previous cases filed with the Commission.

IV. RATE OF RETURN ON EQUITY

Q. WHAT IS THE PURPOSE OF THIS SECTION?

A. This section of my testimony begins by introducing the cost of equity concept, explaining the risk-return tradeoff principle fundamental to capital markets, and discussing the importance of using multiple approaches to estimate the cost of equity. The DCF model is then developed and applied to a group of publicly traded LDCs to estimate their costs of equity. Next, the CAPM is described and alternative cost of equity estimates developed using this method. The cost of equity is also estimated using the risk premium method based on authorized ROEs and the comparable earnings method. The results of these analyses are combined to arrive at a cost of equity range for the group of LDCs, from which my recommended ROE for KGS is selected taking into account flotation costs and the outlook for capital costs. For reference purposes, I also applied each of the four methods to estimate the cost of equity to ONEOK, Inc., although I did not take these results into account in arriving at my recommended ROE for KGS.

A. Cost of Equity Concept

Q. HOW IS A RETURN ON COMMON EQUITY CUSTOMARILY DETERMINED?

A. Unlike debt capital, there is no contractually guaranteed return on common equity capital, since shareholders are the residual owners of the utility. Nonetheless, common equity investors still require a return on their investment, with the "cost of equity" being the minimum rent that must be paid for the use of their money.

Q. WHAT FUNDAMENTAL ECONOMIC PRINCIPLE UNDERLIES THIS COST OF EQUITY CONCEPT?

A. The cost of equity concept is predicated on the notion that investors are risk averse and willingly accept additional risk only if they expect to be compensated for bearing that risk. In capital markets where relatively risk-free assets are available, such as U.S. Treasury securities, investors can be induced to hold more risky assets only if they are offered a premium, or additional return, above the rate of return on a risk-free asset. Since all assets compete with each other for investors' funds, riskier assets must yield a higher expected rate of return than less risky assets in order for investors to be willing to hold them.

Given this risk-return tradeoff, the minimum required rate of return (k) from an asset (i) can be generally expressed as:

$$k_i = R_f + RPi$$

where: R_f = Risk-free rate of return; and
RP_I = Risk premium required to hold more risky asset i.

Thus, the minimum required rate of return for a particular asset at any point in time is a function of: 1) the yield on risk-free assets, and 2) its relative risk, with investors demanding correspondingly larger risk premiums for assets bearing greater risk.

Q. IS THERE EVIDENCE THAT THE RISK-RETURN TRADEOFF PRINCIPLE ACTUALLY OPERATES IN THE CAPITAL MARKETS?

A. Yes. The risk-return tradeoff can be readily documented in certain segments of the capital markets where required rates of return can be directly inferred from market data and generally accepted measures of risk exist. For example, bond yields are reflective of investors' expected rates of return, and bond ratings are indicative of the risk of fixed income securities. The observed yields on government securities and bonds of various rating categories demonstrate that the risk-return tradeoff does, in fact, exist in the capital markets.

To illustrate, average yields during March 2012 on 30-year U.S. Treasury bonds and public utility bonds of different ratings reported by Moody's are shown in Table 4. As evidenced there, as risk increases (measured by progressively lower bond ratings), the required rate of return (measured by yields) rises accordingly. Also shown are the indicated risk premiums over long-term government securities for the additional risk associated with each bond rating category.

TABLE 4

Bond and Rating	March 2012 Yield	Risk Premium Over 30-Year Treasury
U.S. Treasury		
30-Year	3.28%	--
Public Utility		
Aa	4.16%	0.88%
A	4.48%	1.20%
Baa	5.13%	1.85%

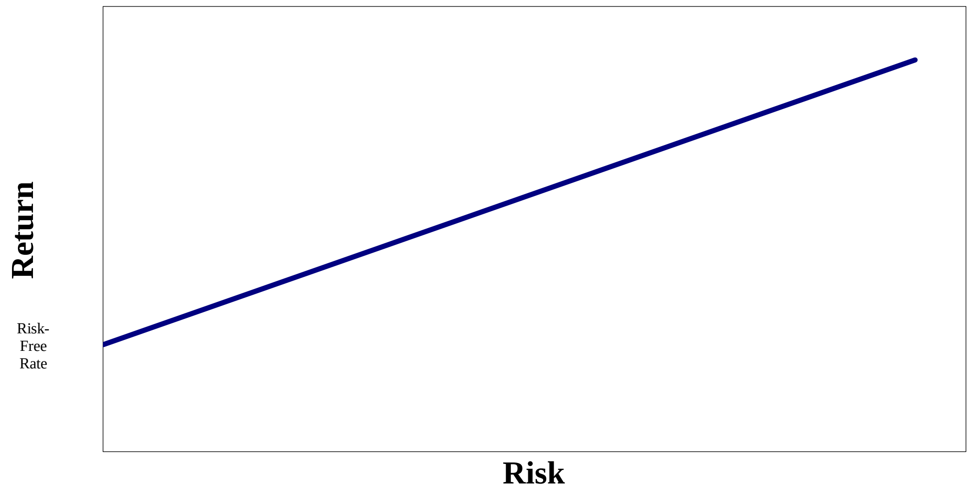
Q. DOES THE RISK-RETURN TRADEOFF OBSERVED WITH FIXED INCOME SECURITIES EXTEND TO COMMON STOCKS AND OTHER ASSETS?

A. Documenting the risk-return tradeoff for assets other than fixed income securities is complicated by two factors. First, there is no standard measure of risk applicable to all assets. Second, for most assets (*e.g.*, common stock), required rates of return cannot be directly observed. Yet there is every reason to believe that investors exhibit risk aversion in deciding whether to hold common stocks and other assets, just as when choosing among fixed income securities. Accordingly, it is generally accepted that the risk-return tradeoff evidenced with long-term debt extends to all assets.

The extension of the risk-return tradeoff from assets with observable required rates of return (*e.g.*, bonds) to other assets is represented by the concept of a "capital market line." In particular, competition between securities and among investors in the capital markets drives the prices of assets to equilibrium such that the expected rate of return from each is commensurate with its risk. Thus, the expected rate of return from any asset is a risk-free rate of return plus a corresponding risk premium. This concept of a capital market line is illustrated in Figure 3.

The vertical axis represents required rates of return and the horizontal axis indicates relative riskiness, with the intercept of the capital market line being the risk-free rate of return.

FIGURE 3
Capital Market Line



Q. IS THIS RISK-RETURN TRADEOFF LIMITED TO DIFFERENCES BETWEEN FIRMS?

A. No. The risk-return tradeoff principle applies not only to investments in different firms, but also to different securities issued by the same firm. As discussed earlier, the securities issued by a utility vary considerably in risk because they have different characteristics and priorities. Long-term debt secured by a mortgage on property is senior among all capital in its claim on a utility's net revenues and is, therefore, the least risky because mortgage bondholders have a direct claim on the utility’s property. Following first mortgage bonds are other debt instruments also holding contractual claims on the utility's net revenues, such as debentures. The last investors in line are common shareholders. They only receive the net revenues, if any, that remain after all other claimants have been paid. As a result, the minimum rate of return that investors require from a utility's common stock, the most junior and riskiest of its securities, must be considerably higher than the yield offered by the utility's senior, long-term debt.

Q. WHAT DOES THE ABOVE DISCUSSION IMPLY WITH RESPECT TO ESTIMATING THE COST OF EQUITY FOR A UTILITY?

A. Although the cost of equity cannot be observed directly, it is a function of the returns available from other investment alternatives and the risks to which the equity capital is exposed. Because it is unobservable, the cost of equity for a particular utility must be estimated by analyzing information about capital market conditions generally, assessing the relative risks of the utility specifically, and employing various quantitative methods that focus on investors' required rates of return. These various quantitative methods typically attempt to infer investors' required rates of return from stock prices, by extrapolating interest rates, or through an analysis of other financial data.

Q. DID YOU RELY ON A SINGLE METHOD TO ESTIMATE THE COST OF EQUITY?

A. No. Despite the theoretical appeal of or precedent for using a particular method to estimate the cost of equity, no single approach can be regarded as wholly reliable. Therefore, I used multiple methods to estimate the cost of equity. Indeed, it is essential that estimates of investors' minimum required rate of return produced by one method be compared with those produced by other methods, and that all cost of equity estimates be required to pass fundamental tests of reasonableness and economic logic.

B. Discounted Cash Flow Model

Q. HOW ARE DCF MODELS USED TO ESTIMATE THE COST OF EQUITY?

A. The use of DCF models to estimate the cost of equity is essentially an attempt to replicate the market valuation process which led to the price investors are willing to pay for a share of a company's common stock. It is predicated on the assumption that investors evaluate the risks and expected rates of return from all securities in the capital markets. Given these expected rates of return, the price of each share of stock is adjusted by the market so that investors are adequately compensated for the risks to which they are exposed. Therefore, we can look to the market to determine what investors believe a share of common stock is worth, and by estimating the cash flows they expect to receive from the stock in the way of future dividends and stock price, their required rate of return can be mathematically imputed. In other words, the cash flows that investors expect from a stock are estimated, and given the stock’s current market price, we can "back-into" the discount rate, or cost of equity, investors presumably used in arriving at that price.

Q. WHAT MARKET VALUATION PROCESS UNDERLIES DCF MODELS?

A. DCF models are derived from a theory of valuation which posits that the price of a share of common stock is equal to the present value of the expected cash flows (*i.e.*, future dividends and stock price) that will be received while holding the stock, discounted at investors' required rate of return, or the cost of equity. Notationally, the general form of the DCF model is as follows:

$$P_0 = \frac{D_1}{(1+K_e)^1} + \frac{D_2}{(1+K_e)^2} + \dots + \frac{D_t}{(1+K_e)^t} + \frac{P_t}{(1+K_e)^t}$$

where: P_0 = Current price per share;
P_t = Future price per share in period t;
D_t = Expected dividend per share in period t;
K_e = Cost of equity.

Q. HAS THIS GENERAL FORM OF THE DCF MODEL CUSTOMARILY BEEN SIMPLIFIED FOR USE IN ESTIMATING THE COST OF EQUITY IN RATE CASES?

A. Yes. In an effort to reduce the number of required estimates and computational difficulties, the general form of the DCF model has been simplified to a "constant growth" form. In order to convert the general form of the DCF model to the constant growth DCF model, a number of assumptions must be made. These include:

- A constant growth rate for both dividends and earnings;
- A stable dividend payout ratio;
- The discount rate exceeds the growth rate;
- A constant growth rate for book value and price;
- A constant earned rate of return on book value;
- No sales of stock at a price above or below book value;
- A constant price-earnings ratio;
- A constant discount rate (*i.e.*, no changes in risk or interest rate levels and a flat yield curve); and
- All of the above extend to infinity.

Given these assumptions, the general form of the DCF model can be reduced to the more manageable formula of:

$$P_0 = \frac{D_1}{k_e - g}$$

where: g = Investors' long-term growth expectations.

K_e, or the cost of equity, can be isolated by rearranging terms:

$$k_e = \frac{D_1}{P_0} + g$$

The constant growth form of the DCF model recognizes that the rate of return to stockholders consists of two parts: 1) dividend yield (D_1/P_0), and 2) growth (g). In other words, investors expect to receive a portion of their total return in the form of current dividends and the remainder through price appreciation.

While the constant growth form of the DCF model provides a more manageable formula to estimate the cost of equity, it is important to note that the assumptions required to convert the general form of the DCF model to the constant growth form are never strictly met in practice. In some instances, where earnings are derived solely from stable activities, and earnings, dividends, and book value track fairly closely, the constant growth form of the DCF model may be a reasonable working approximation of stock valuation. However, in other cases, where the circumstances cause the required assumptions to be severely violated, the constant growth DCF model may produce widely divergent and meaningless results. This is especially the case if the firm's earnings or dividends are unstable, or if investors are expecting the stock price to be affected by factors other than earnings and dividends.

Q. HOW DID YOU ESTIMATE THE COST OF EQUITY USING THE DCF MODEL?

A. I applied the constant growth form of the DCF model to the group of nine publicly traded LDCs identified earlier (Schedule BHF-2); namely, those firms included in *Value Line's* Natural Gas Utility industry that are predominantly engaged in natural gas distribution.

Q. HOW IS THE CONSTANT GROWTH FORM OF THE DCF MODEL TYPICALLY USED TO ESTIMATE THE COST OF EQUITY?

A. The first step in implementing the constant growth DCF model is to determine the expected dividend yield (D_1/P_0) for the firm in question. This is usually calculated based on an estimate of dividends to be paid in the coming year divided by the current price of the stock.

Q. HOW DID YOU CALCULATE THE DIVIDEND YIELD COMPONENT OF THE CONSTANT GROWTH DCF MODEL FOR THE GAS UTILITY GROUP?

A. Because estimating the cost of equity using the DCF model is an attempt to replicate how investors arrived at an observed stock price, all of its components should be contemporaneous. Price, dividend, and growth data from different points in time, or averaged over long time periods, violate the matching principle underlying the DCF model. Therefore, dividend yield was calculated by dividing an estimate of dividends to be paid by each of the LDCs in the group over the next twelve months, obtained from the index to *Value Line's* March 9, 2012 edition, by the average closing price of each firm's stock during the month of March 2012. The expected dividends, representative price, and resulting dividend yield for each of the nine gas utilities are displayed on Schedule BHF-3. As also shown there, the average dividend yield for the industry group is 3.79%.

Q. EXPLAIN HOW ESTIMATES OF INVESTORS' LONG-TERM GROWTH EXPECTATIONS ARE CUSTOMARILY DEVELOPED FOR USE IN THE CONSTANT GROWTH DCF MODEL.

A. In constant growth DCF theory, earnings, dividends, book value, and market price are all assumed to grow in lockstep, and the growth horizon of the DCF model is infinite. But implementation of the DCF model is more than just a theoretical exercise; it is an effort to replicate the mechanism investors used to arrive at observable stock prices. Therefore, the only "g" that matters in using the DCF model to estimate the cost of equity is that which investors expect and have embodied in current market prices.

Q. WHAT DRIVES INVESTORS' GROWTH EXPECTATIONS?

A. Trends in earnings, which ultimately support future dividends and share price, play a pivotal role in determining investors' long-term growth expectations. The 5-year earnings growth projections by security analysts for each of the nine gas utilities reported by *Value Line*, Thomson Reuters' Institutional Brokers Estimate System (*I/B/E/S*), and Zacks Investment Research (*Zacks)* are displayed on Schedule BHF-4, with the averages for the group being summarized in Table 5:

TABLE 5

	LDC Group
Value Line	5.0%
I/B/E/S	4.2%
Zack's	4.7%

Also shown on Schedule BHF-4 are the 10-year and 5-year historical earnings growth rates for each of the nine gas utilities, which average 6.4% and 5.8%, respectively.

Q. HOW ELSE ARE INVESTOR EXPECTATIONS OF FUTURE LONG-TERM GROWTH PROSPECTS FOR A FIRM OFTEN ESTIMATED FOR USE IN THE CONSTANT GROWTH DCF MODEL?

A. In DCF theory and practice, growth in book equity comes from the reinvestment of earnings within the business and the effects of external financing. Accordingly, conventional applications of the constant growth DCF model often examine the relationships between variables that determine the "sustainable" growth attributable to these two factors.

Q. HOW IS A FIRM'S SUSTAINABLE GROWTH ESTIMATED?

A. The sustainable growth rate is calculated by the formula:

$$g = br + sv$$

where "b" is the expected earnings retention ratio (one minus the dividend payout ratio), "r" is the expected rate of return earned on book equity, "s" is the percent of common equity expected to be issued annually as new common stock, and "v" is the equity accretion ratio. The "br" term represents the growth from reinvesting earnings within the firm while the "sv" term represents the growth from external financing. This external financing growth results because existing shareholders share in a portion of any excess received from selling new shares at a price above book value.

Q. WHAT GROWTH RATE DOES THE SUSTAINABLE GROWTH METHOD SUGGEST FOR THE GAS UTILITY GROUP?

A. The sustainable growth rate for each of the gas utilities in the industry group based on *Value Line's* projections for 2015-2017 is developed in Schedule BHF-5. As shown there, the sustainable growth method implies an average long-term growth rate for the gas utility group of 6.0%.

Q. WHAT ARE OTHER PROJECTED AND HISTORICAL GROWTH RATES FOR THE INDUSTRY GROUP?

A. Schedule BHF-6 displays *Value Line* projected growth rates and 10- and 5-year historical growth rates in book value per share, dividends per share, and stock price for each of the nine gas utilities in the industry group. The averages for the LDC group range from 3.3% to 6.3%. Besides the fact that several of these growth rates, when combined with the group's 3.79% dividend yield, imply implausible cost of equity estimates, the variation in these other growth rates results in them providing limited guidance as to the prospective growth that investors expect.

Q. WHAT IS YOUR CONCLUSION AS TO THE GROWTH THAT INVESTORS ARE EXPECTING FROM THE INDUSTRY GROUP?

A. After excluding clearly unreliable indicators of growth, the plausible growth rates shown on Schedules BHF-4, BHF-5, and BHF-6 indicated a range for the LDC group of between approximately 5.0% and 6.5%. Meanwhile, *Yahoo Finance* and *Zacks* report projected earnings growth rates for their gas distribution industries of

7.68% and 9.0%, respectively. Taken together, I concluded that investors expect long-term growth from the LDC group in the 5.5% to 6.5% range.

Q. WHAT DCF COST OF EQUITY ESTIMATES DO THESE GROWTH RATE RANGES IMPLY FOR THE GAS UTILITY GROUP?

A. Summing the LDC group's average dividend yield of approximately 3.8% with a 5.5% to 6.5% growth rate range indicates a DCF cost of equity for the industry group of between 9.3% and 10.3%.

C. <u>Capital Asset Pricing Model</u>

Q. HOW ELSE DID YOU ESTIMATE THE COST OF EQUITY?

A. The cost of equity to the gas utility group was also estimated using the CAPM, which is a theory of market equilibrium that serves as the basis for current financial education and management. Under the CAPM, investors are assumed fully diversified, so that the relevant risk of an individual asset (*e.g.*, common stock) is its volatility relative to the market as a whole, which is measured using a "beta" coefficient. Beta reflects the tendency of a stock's price to follow changes in the market, with stocks having a beta less than 1.00 being considered less risky and stocks with a beta greater than 1.00 being regarded as more risky. The CAPM is mathematically expressed as:

$$R_j = R_f + \beta_j (R_m - R_f)$$

where: R_j = required rate of return for stock j;
R_f = risk-free interest rate;
R_m = expected return on the market portfolio; and
β_j = beta, or systematic risk, for stock j.

While the CAPM is not without controversy, it is routinely referenced in the financial literature and regulatory proceedings, and firms' beta values are widely reported.

Q. HOW DID YOU APPLY THE CAPM?

A. I applied the CAPM using two methods to determine the risk premium for the market as a whole, or the (R_m - R_f) term in the CAPM formula. The first was based on historical rates of return and the second was based on forward-looking estimates of investors' required rates of return. In both instances, the companies included in the S&P 500 index were used as a proxy for the market portfolio and the 30-year U.S. Treasury bond served as the risk-free investment.

Q. PLEASE DESCRIBE THE FIRST METHOD BASED ON HISTORICAL RATES OF RETURN.

A. Under the historical rate of return approach, equity risk premiums are calculated by first measuring the rate of return (including dividends and capital gains and losses) actually realized on an investment in common stocks over historical time periods. The historical return on bonds is then subtracted from that earned on common stocks to measure equity risk premiums. Widely used in academia, the historical rate of return approach is based on the assumption that, given a sufficiently large number of observations over long historical periods, average market rates of return will converge to investors' required rates of return. From a more practical perspective, investors may base their expectations for the future on, or may have come to expect that they will earn, rates of return corresponding to those in the past.

Q. WHAT IS THE MARKET RISK PREMIUM BASED ON HISTORICAL RATES OF RETURN?

A. Perhaps the most exhaustive study of historical rates of return, and the one most frequently cited in regulatory proceedings, is that contained in Morningstar's (formerly Ibbotson Associates) *Stocks, Bonds, Bills and Inflation*. In their *2012 Valuation Yearbook*, Morningstar reports that the annual rate of return realized on the S&P 500 averaged 11.80% over the period 1926 through 2011, while the annual average income rate of return on 30-year Treasury bonds over this same period averaged 5.20%. Thus, the market risk premium based on historical average annual rates of return is 6.60%.

Q. PLEASE DESCRIBE THE SECOND METHOD BASED ON FORWARD-LOOKING REQUIRED RATES OF RETURN.

A. Consistent with the CAPM being an expectational (*i.e.,* forward-looking) model, the second method estimated the market risk premium using current indicators of investors' required rates of return. For the market portfolio, the cost of equity was estimated by applying the DCF model to the firms in the S&P 500 paying cash dividends, with each firm's dividend yield and growth rate being weighted by its proportionate share of total market value. The expected dividend yield for each firm was obtained from Value Line, with the expected growth rate being based on the earnings forecasts published for each firm by *Value Line*, *I/B/E/S*, and *Zacks*. As shown in footnote (b) on Schedule BHF-7, summing the 2.50% expected dividend yield for this market group, which is composed primarily of non-regulated firms, with the average *Value Line*, *I/B/E/S*, and *Zacks* projected growth rate of

11.00% produced a required rate of return from the market portfolio (R_m) of 13.50%.

Q. WHAT IS THE MARKET RISK PREMIUM BASED ON FORWARD-LOOKING REQUIRED RATES OF RETURN?

A. From the 13.50% required rate of return on the market portfolio, a market risk premium was calculated by subtracting the average yield on 30-year Treasury bonds during March 2012 of 3.28%. This produced a forward-looking market risk premium of 10.22%.

Q. WHAT WAS THE NEXT STEP IN APPLYING THE CAPM?

A. Having calculated market risk premiums of 6.60% and 10.22% using historical rates of return and forward-looking rates of return, respectively, the next step was to calculate specific risk premiums for the LDC industry group. This was done by multiplying the alternative market risk premium estimates by the LDC group's average beta of 0.67, calculated using firm betas obtained from *Value Line* and shown on Schedule BHF-8, which produced industry risk premiums of 4.44% and 6.87%.

Q. WHAT ARE THE RESULTING THEORETICAL CAPM COST OF EQUITY ESTIMATES FOR THE LDC GROUP?

A. As developed in Schedule BHF-7, summing the industry risk premiums of 4.44% and 6.87% with the 30-year Treasury bond yield of 3.28% produced theoretical CAPM cost of equity estimates for the LDC industry group of 7.72% and 10.15%.

Q. ARE THESE THEORETICAL CAPM COST OF EQUITY ESTIMATES ACCURATE MEASURES OF INVESTORS' REQUIRED RATE OF RETURN FROM THE GROUP OF LDCS?

A. No. These cost of equity estimates are based on CAPM theory. However, as explained by Morningstar in its *2012 Valuation Yearbook* edition of *Stocks, Bonds, Bills and Inflation*:

> One of the most remarkable discoveries of modern finance is that of a relationship between firm size and return. The relationship cuts across the entire size spectrum but is most evident among smaller companies, which have higher returns on average than larger ones. (page 85, footnote omitted)

In other words, in addition to the systematic risk measured by beta, investors' required rate of return depends on a firm's relative size. To account for this, Morningstar has developed size premiums that need to be added to the theoretical CAPM cost of equity estimates to account for the level of a firm's market capitalization in determining the CAPM cost of equity.

Q. WHAT ARE THE CAPM COST OF EQUITY ESTIMATES FOR THE LDC GROUP ONCE SIZE EFFECTS ARE TAKEN INTO ACCOUNT?

A. As shown on Schedule BHF-8, the average market capitalization of the LDC group is $2.169 billion. Based on Morningstar's schedule of size premiums, this means that the theoretical CAPM cost of equity estimates need to be increased by 1.74% to account for the industry group's relatively smaller size. As shown on Schedule BHF-7, increasing the theoretical CAPM cost of equity estimates for the LDC group by this size premium results in CAPM cost of equity estimates based on historical rates of return and forward-looking rates of return of 9.46% and 11.89%, respectively.

D. Risk Premium Method

Q. HOW ELSE DID YOU ESTIMATE THE COST OF EQUITY?

A. The cost of equity was also estimated using a risk premium method based on ROEs previously authorized LDCs by state regulatory commissions. The risk premium method to estimate investors' required rate of return is an extension of the risk-return tradeoff observed with bonds to common stocks. The cost of equity is estimated by determining the additional return investors require to forego the relative safety of a bond and bear the greater risks associated with common stock, and then adding this equity risk premium to the current yield on bonds.

Q. GENERALLY DESCRIBE THE APPLICATION OF THE RISK PREMIUM METHOD USING AUTHORIZED ROES.

A. Application of the risk premium method based on authorized ROEs is predicated on the presumption that allowed returns reflect regulatory commissions' best estimates of the cost of equity, however determined, at the time they issued their final orders. A current risk premium is estimated based on the difference between past authorized ROEs and then-prevailing interest rates. This risk premium is then added to current interest rates to estimate the cost of equity.

Q. WHAT WAS THE PRINCIPAL SOURCE OF THE DATA USED TO APPLY THIS RISK PREMIUM METHOD?

A. Regulatory Research Associates, Inc. (*RRA*) and its predecessor have compiled the ROEs authorized major electric, gas, and telephone utilities by regulatory commissions across the U.S. The average ROE authorized natural gas utilities published by RRA in each quarter between 1980 and 2012 are displayed in Schedule BHF-9. As shown there, the ROEs granted LDCs over this approximately 31-year period have averaged 12.03%, while the average single-A utility bond yield has averaged 8.87%, resulting in an average risk premium of 3.16%.

Q. IS THIS 3.16% AVERAGE RISK PREMIUM THE RELEVANT BENCHMARK FOR ESTIMATING THE COST OF EQUITY?

A. No. It is necessary to account for the fact that authorized ROEs do not move in lockstep with interest rates. In particular, when interest rate levels are relatively high, ROEs tend to be lower (*i.e.*, equity risk premiums narrow), and when interest rates are relatively low, authorized ROEs are greater (*i.e.*, equity risk premiums increase).

Q. HOW DID YOU ACCOUNT FOR THE RELATIONSHIP BETWEEN EQUITY RISK PREMIUMS AND INTEREST RATES IN ESTIMATING THE COST OF EQUITY FOR THE LDC GROUP USING PAST AUTHORIZED ROES?

A. To account for the fact that equity risk premiums are lower when interest rates are high and higher when interest rates are low, I developed a regression equation relating authorized past equity risk premiums to single-A bond yields. Shown at the bottom of Schedule BHF-9, substituting the March 2012 yield of 4.48% on single-A public utility bonds into the regression equation indicates that the equity risk premium for an LDC at current interest rate levels is approximately 5.15%.

Q. WHAT COST OF EQUITY DOES THIS RISK PREMIUM IMPLY FOR THE GROUP OF LDCS?

A. Adding the 5.15% equity risk premium developed in Schedule BHF-9 to the March 2012 yield on single-A utility bonds of 4.48% produces a risk premium cost of equity estimate of 9.63%. Please note that this cost of equity estimate is slightly understated because, as shown on Schedule BHF-8, the average bond rating of the group of LDCs is a low single-A versus a straight single-A. In addition, this risk premium cost of equity estimate is based on current interest rate levels, which as discussed elsewhere in my testimony have been artificially suppressed by the Fed in an effort to stimulate the economy. If a utility bond yield were substituted into the regression equation developed on Schedule BHF-9 that is more reflective of interest rate levels likely to prevail when the rates being set in this case are in effect, say 6%, the risk premium cost of equity estimate would be on the order of 10.5%.

E. Comparable Earnings Method

Q. WHAT WAS THE LAST METHOD THAT YOU USED TO ESTIMATE THE COST OF EQUITY?

A. Often referred to as the comparable earnings method, this approach looks to the rates of return that other firms of comparable risk and that compete for investors' capital are expected to earn on their book equity. Reference to the expected return on book equity of other LDCs demonstrates the level of earnings that KGS needs in order to offer investors a competitive return, be able to attract capital on reasonable terms, and maintain its financial integrity.

Q. WHAT RETURN ON BOOK EQUITY ARE OTHER LDCS EXPECTED TO EARN?

A. Schedule BHF-10 displays the return on book equity projected for each of the nine LDCs in the industry group for the 2012, 2013, and 2015-2017 timeframes, calculated by dividing *Value Line's* projected earnings per share by average book value per share. As shown there, the average expected book ROE for the group is 11.4% in 2012, 11.7% for 2013, and 11.8% for 2015-2017.

F. <u>Cost of Equity Range</u>

Q. WHAT IS YOUR CONCLUSION AS TO THE COST OF EQUITY RANGE FOR THE LDC INDUSTRY GROUP?

A. The DCF method indicated a cost of equity range for the LDC group of between 9.3% and 10.3%, while the CAPM indicated a cost of equity range of between approximately 9.5% and 11.9%. Meanwhile, the risk premium method based on the authorized ROEs for LDCs and current interest rates indicated a cost of equity of 9.63%, and the comparable earnings method showed that other LDCs are expected to earn between 11.4% and 11.8% on their book equity. Taken together, I conclude that investors require a return on equity from the LDC industry group in the 10% to 11% range.

Q. YOU SAID EARLIER THAT, FOR REFERENCE PURPOSES, YOU ALSO APPLIED THE FOUR METHODS TO ONEOK, INC. WHAT IS YOUR COST OF EQUITY RANGE FOR ONEOK, INC.?

A. On Schedules BHF-3 through BHF-8 and Schedule BHF-10, data similar to that used to apply the DCF, CAPM, and comparable earnings methods to the group of

LDCs are also shown for ONEOK, Inc. Based on these data, the DCF method produced a cost of equity range for ONEOK, Inc. of 12.0% to 13.0%, the CAPM a range of 10.33% to 13.77%, and the risk premium method a cost of equity of 9.98%, with investors expecting ONEOK, Inc. to earn between 14.9% and 16.3% on its book equity over the next few years. This implies a cost of equity to ONEOK, Inc. of at least 12% to 13%.

V. RETURN ON EQUITY RECOMMENDATION

Q. WHAT IS THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY?

A. Having identified a cost of equity range for the LDC industry group, this section discusses other factors properly considered in selecting a return on equity for KGS.

A. Flotation Costs

Q. WHAT ARE FLOTATION COSTS?

A. The common equity used to finance utility assets is provided from either the sale of stock in the capital markets or from retained earnings not paid out as dividends. When equity is raised through the sale of common stock, there are costs associated with "floating" the new equity securities. These flotation costs include services such as legal, accounting, and printing, as well as the fees and discounts paid to compensate brokers for selling the stock to the public. Also, some argue that the "market pressure" from the additional supply of common stock and other market factors may further reduce the amount of funds a utility nets when it issues common equity.

Q. IS THERE AN ESTABLISHED MECHANISM FOR A UTILITY TO RECOGNIZE COMMON EQUITY FLOTATION COSTS?

A. No. While debt flotation costs are recorded on the books of the utility and amortized over the life of the issue, serving to increase the effective cost of debt capital, there is no similar accounting treatment to ensure that common equity flotation costs are recorded and ultimately recognized. Alternatively, no rate of return is authorized on flotation costs necessarily incurred to obtain a portion of the common equity capital used to finance plant. In other words, equity flotation costs are not included in a utility's rate base because that portion of the gross sale proceeds is not available to invest in plant and equipment and is not capitalized as an intangible asset. Even though there is no accounting convention to accumulate and amortize the flotation costs associated with past common equity issues, flotation costs are nevertheless a very real expense necessarily incurred in the sale of equity capital. Therefore, unless some provision is made to recognize these past issuance costs in a utility's ROE, its revenue requirements will not fully reflect all of the costs actually incurred for the use of investors' funds.

Q. HOW CAN COMMON EQUITY FLOTATION COSTS BE RECOGNIZED IN REVENUE REQUIREMENTS?

A. As indicated above, unlike the transactional costs incurred to issue and sell debt, there is no direct mechanism to recognize flotation costs necessarily incurred in the issuance and sale of common stock. Therefore, flotation costs must be accounted-for indirectly. An upward adjustment to the "bare-bones" cost of equity identified above is the most logical and widely accepted mechanism for recognizing these costs.

Q. HOW IS THE MAGNITUDE OF THE FLOTATION COST ADJUSTMENT TO THE COST OF EQUITY DETERMINED?

A. There are any number of ways in which a flotation cost adjustment can be calculated, with the adjustment ranging from just a few basis points to more than a full percent. For example, relating past flotation costs to total book common equity normally results in a nominal flotation cost adjustment of a few basis points, while adjusting the bare-bones cost of equity to encourage a target market-to-book ratio of, say, 110%, typically produces a flotation cost in excess of one percent. More modest approaches to calculating flotation cost adjustments, such as applying an average flotation cost expense percentage (*i.e.*, 3% to 5%) to a utility's dividend yield, or its bare-bones cost of equity, usually result in flotation cost adjustments of between 15 and 50 basis points (*e.g.*, Staff witness Gatewood recommended a 22 basis point flotation adjustment in KGS's last rate case, the 1209 Docket). Because the precise calculation of a flotation cost adjustment is problematic, unrecovered flotation costs are often recognized by selecting the return on equity from above the mid-point of the cost of equity range, rather than make a specific adjustment to the cost of equity.

B. <u>Outlook for Capital Costs</u>

Q. IS THERE ANYTHING ELSE THAT SHOULD BE CONSIDERED IN SELECTING A SPECIFIC ROE FROM THE COST OF EQUITY RANGE?

A. Yes. As illustrated earlier, interest rates dropped to historic lows following the financial crisis of 2008 and early 2009. This was a direct result of reduced loan demand due to the recession, reluctance by lenders to make loans, the U.S. government having extended credit to financial institutions at artificially suppressed interest rates approaching zero, and the Fed purchasing hundreds of billions of dollars in U.S. Treasury bonds. Simultaneously, the federal government authorized hundreds of billions of dollars in spending to stimulate the economy, which it is borrowing to finance. As the recession ends and the government subsidies subside, long-term interest rates are expected to rise in response to market forces and inflationary pressures. This rise in interest rates will in turn increase the cost of permanent capital, including common equity, above current levels.

Q. CAN YOU PROVIDE EVIDENCE OF THESE EXPECTATIONS FOR RISING INTEREST RATES?

A. Yes. Projections by investment advisors, forecasting services, and government agencies all show long-term interest rates increasing over the next few years. Table 6 below compares current interest rates (as reported by the Fed and Moody's) on 30-year U.S. Treasury, triple-A corporate bonds, and double-A utility bonds with those projected for 2013 through 2016 by *Value Line* in its *Forecast for the U.S. Economy* (February 24, 2012), *Blue Chip Financial Forecasts* (December 1, 2011), Global Insight in its *The U.S. Economy: The 30-Year Focus* (Third Quarter

2011), and the Energy Information Administration in its *Annual Energy Outlook 2012* (January 2012):

TABLE 6

	March 2012	**2013**	**2014**	**2015**	**2016**
<u>30-Year Treasury</u>					
Value Line	3.3%	3.7%	4.0%	4.5%	5.0%
Blue Chip Forecast	3.3%	4.2%	4.8%	5.3%	5.5%
Global Insight	3.3%	4.1%	4.5%	5.1%	5.3%
<u>AAA Corporate</u>					
Value Line	4.0%	4.6%	5.0%	5.3%	5.8%
Blue Chip Forecast	4.0%	4.7%	5.4%	5.8%	6.2%
Global Insight	4.0%	4.6%	5.1%	6.0%	6.2%
<u>AA-Utility</u>					
Global Insight	4.2%	5.0%	5.6%	6.5%	6.8%
EIA	4.2%	4.8%	5.7%	6.8%	6.9%

These projections evidence a clear consensus that the cost of permanent capital will be higher in the 2013-2016 timeframe, when the rates being set in this proceeding will be in effect, than it is today. In order for KGS to offer investors a competitive return, attract capital on reasonable terms, and maintain its financial integrity, its ROE needs to reflect capital market requirements during the time when rates are in effect.

Q. HOW SHOULD THIS OUTLOOK FOR INCREASED CAPITAL COSTS BE INCORPORATED INTO THE RETURN ON EQUITY?

A. So that the rates approved in this proceeding reflect the capital costs prevailing when those rates are in effect, an adjustment to the current cost of equity is necessary to account for the higher capital costs expected in 2013 and beyond. However, while there is a consensus that capital costs will be higher in the 2013-2016 timeframe than they are currently, there is some disagreement about the magnitude of that increase. Therefore, as in the case of flotation costs, I recommend that the higher capital costs expected when rates are in effect be accommodated by selecting an ROE from the upper end of the cost of equity range.

C. <u>Decoupling and Other Tariff Riders</u>

Q. ARE YOU FAMILIAR WITH KGS'S PROPOSED DECOUPLING MECHANISM AND OTHER TARIFF RIDERS?

A. Generally, yes. KGS currently has a weather normalization adjustment ("WNA") provision that it is proposing to replace with a revenue normalization adjustment ("RNA"). Applicable for residential customers and two general sales classes, the RNA is a mechanism designed to "decouple" revenues and customers usage. KGS's current tariff also includes a gas system reliability surcharge ("GSRS") rider and an ad valorem surcharge ("AVS") rider. KGS has a COGR provision, as do virtually all LDCs, that recovers the prudent costs of purchased gas dollar-for-dollar and the gas portion of bad debt expense. Finally, KGS has a request for an Infrastructure Replacement Program ("IRP") pending before the Commission.

Q. SHOULD ANY ADJUSTMENT BE MADE TO KGS'S ROE FOR ITS PROPOSED RNA?

A. No. KGS's proposed decoupling mechanism would continue the current WNA mechanism of adjusting revenues for colder- or warmer-than-normal weather. It would also adjust revenues for changes in customer usage between rate cases. Because the investment community regards virtually all of the LDCs in the industry group used as the basis for estimating KGS's cost of equity as having a weather mitigant (*e.g.*, WNA clause and decoupled rates); the reduced weather risk associated with KGS's RNA is, for all intents and purposes, already accounted-for in the cost of equity range developed above. Meanwhile, because use per customer is essentially "reset" in each rate case, any loss of revenues due to declining customer usage can be ameliorated by more frequent rate cases. As a result, the benefit of KGS's proposed RNA with respect to changes in customer usage is that it reduces regulatory lag, with its value depending on the frequency that KGS would otherwise file rate cases to address other expense, investment, and revenue issues.

Q. DOES KGS'S PROPOSED RNA ELIMINATE ALL THE RISKS FACED BY KGS?

A. Not at all. Weather and changes in use per customer are but two of the many risks faced by KGS. For example, operating and financing risks related to rate regulation, replacement of aging infrastructure, gas costs, loss of industrial customers, costs disallowances, customer growth, bypass, non-rate regulatory changes, asset impairment, tax laws, environmental laws and regulations, operating hazards, industry restructuring, general economic conditions, inflation, credit requirements, and capital market conditions, just to name a few, remain. Thus, while KGS's proposed RNA may largely reduce certain revenue risks associated with the affected classes, it does nothing to reduce the multitude of other risks faced by KGS.

Q. WHAT ABOUT KGS'S EXISTING GSRS AND AVS RIDERS, WHICH IT PROPOSES TO CONTINUE?

A. As with decoupling mechanisms, these types of riders are generally viewed favorably by the investment community, but they do not have a material impact on KGS's overall investment risk, and any reduced risk is largely already accounted for in the ROE range developed above.

Q. WHY DO YOU SAY THAT THESE RIDERS DO NOT HAVE A MATERIAL IMPACT ON KGS'S OVERALL INVESTMENT RISK?

A. The AVS and GSRS riders address changes in expenditures for ad valorem taxes and a portion of additional plant investment, respectively, between rate cases and entail at least a one-year lag between when the expenditures are incurred and ultimately reflected in rates. Like changes in customers use discussed above, ad valorem taxes and plant investment are re-established in each rate case, so that the need to reflect higher property taxes and additional investment in gas system reliability assets can be accomplished by more frequent rate cases. Especially in light of the lag associated with these riders, the benefit of the AVS and GSRS riders is not that they materially reduce investment risks, but that they tend to reduce the number of rate cases, which is a general benefit to KGS, the Commission, and customers.

Q. WHAT IS THE BASIS FOR YOUR EARLIER STATEMENTS THAT ANY REDUCED RISK ASSOCIATED WITH KGS'S PROPOSED RNA AND EXISTING RIDERS IS LARGELY ALREADY ACCOUNTED FOR IN THE ROE RANGE DEVELOPED ABOVE?

A. LDCs throughout the U.S. are adopting rate designs that decouple rates from customer usage in various ways and have riders and surcharges that include selected expenditures in rates outside of a rate case. In my review of the Form 10-Ks of the LDCs included in the industry group identified earlier, most have rate provisions that are viewed by investors' as achieving end-results similar to KGS's proposed decoupling mechanism and that are similar to KGS's existing recovery mechanisms. For example, AGL Resources' namesake LDC, Atlanta Gas Light, has a straight-fixed-variable rate that is paid by marketers who sell gas to retail customers. Its Virginia Natural Gas, Elizabethtown Gas, and Chattanooga Gas LDCs all have WNAs, with Chattanooga Gas also having decoupled rates. Atlanta Gas Light and Elizabethtown Gas also have infrastructure improvement riders, and AGL's recently acquired Nicor Gas LDC has a bad debt rider and a flat monthly fee rate design with only a small variable charge. Atmos Energy has WNA mechanisms that serve to minimize the effects of weather on approximately 94% of its gross margin, mechanisms that provide for annual rate reviews and adjustments to rates for approximately 73% of its gross margin, rate structures providing for accelerated recovery of all or a portion of expenditures for approximately 84% of its gross margin, and riders to recover the gas portion of bad debts and ad valorem taxes. Laclede has a weather mitigation rate design that provides better assurance of the recovery of its fixed costs and margins during winter months despite variations in sales volumes due to the impacts of weather and other factors that affect customer usage.

The rates of New Jersey Resources' LDC have a provision that permit it to adjust rates to recover its allowed margins regardless of weather or customer usage, as well as three riders covering remediation, accelerated infrastructure, and energy efficiency expenditures. Northwest Natural has a conservation tariff in its primary Oregon service area (90% of revenues) that decouples customer usage from its earnings with periodic adjustments. Piedmont Natural Gas' rates in North Carolina adjust monthly to recover its approved margins independent of consumption, while its rates in South Carolina are adjusted annually pursuant to state statute and those in both South Carolina and Tennessee are covered by WNAs. It also has riders in all three jurisdictions that allow for the recovery of uncollectible gas costs.

The rates of South Jersey Industries' LDC include a conservation incentive program that preserves its profit margin per customer through annual adjustments and an adjustment clause that covers remediation, clean energy, universal service, and consumer education expenditures. Southwest Gas' rates are decoupled in all three of the states in which it serves (*i.e.*, Arizona, California, and Nevada). Finally, Washington Gas Light has decoupled residential rates and a rider for energy efficiency program expenditures in Virginia, although these rate features have not been approved in the District of Columbia or Maryland. It is because of this prevalence of rate provisions that achieve the same end-result as

KGS's proposed RNA, as well as the widespread use of riders and surcharges to cover various types of expenditures incurred between rate cases, that no adjustment to ROE because of KGS's existing and proposed recovery mechanisms is warranted.

D. Recommended Return on Equity

Q. WHAT IS YOUR RECOMMENDED ROE FOR KGS?

A. To account for flotation costs and the outlook for higher capital costs, I recommend an ROE for KGS at the upper end of my 10% to 11% cost of equity range for the group of LDCs, or 10.75%. Application of the flotation cost calculation methodology used by Mr. Gatewood in the 1209 Docket to my LDC group produces a current flotation cost adjustment of 20 basis points. Additionally, there is a clear consensus that the cost of capital will be appreciably higher in the 2013-2016 timeframe than it is today. If KGS is to be able to offer investors a competitive return, attract capital on reasonable terms, and maintain its financial integrity, its ROE needs to reflect the higher capital market requirements when rates will be in effect. Finally, because virtually all of the LDCs in the industry group that served as the basis for my cost of equity range for KGS have rate features that achieve end-results similar to KGS's existing and proposed recovery mechanisms, no downward adjustment to its ROE is warranted.

VI. OVERALL RATE OF RETURN

Q. WHAT OVERALL RATE OF RETURN DO YOU RECOMMEND BE APPLIED TO KGS'S RATE BASE?

A. I recommend that KGS be authorized an overall rate of return on rate base of 8.52%. As developed in Schedule BHF-1, this overall rate of return is the result of combining the adjusted March 31, 2012 capital structure consisting of 41.15% long-term debt and 58.85% common equity with an average cost of debt of 5.33% and an ROE of 10.75%.

Q. DOES THAT CONCLUDE YOUR DIRECT TESTIMONY IN THIS CASE?

A. Yes, it does

VERIFICATION

STATE OF TEXAS)
) ss.
COUNTY OF TRAVIS)

Bruce H. Fairchild, being duly sworn upon his oath, deposes and states that he is a Principal in FINCAP, Inc.; that he has read and is familiar with the foregoing Direct Testimony filed herewith; and that the statements made therein are true to the best of his knowledge, information, and belief.

Bruce H. Fairchild

Subscribed and sworn to before me this ~~18th~~ 11th day of May 2012.

NOTARY PUBLIC

My appointment Expires:
05/16/2015

JAMES M DOMINGUEZ
NOTARY PUBLIC
STATE OF TEXAS
MY COMM. EXP. 05/16/2015

APPENDIX A

BRUCE H. FAIRCHILD

FINCAP, INC.
Financial Concepts and Applications
Economic and Financial Counsel

3907 Red River
Austin, Texas 78751
(512) 458–4644
FAX (512) 458–4768
fincap2@texas.net

Summary of Qualifications

M.B.A. and Ph.D. in finance, accounting, and economics; Certified Public Accountant. Extensive consulting experience involving regulated industries, valuation of closely-held businesses, and other economic analyses. Previously held managerial and technical positions in government, academia, and business, and taught at the undergraduate, graduate, and executive education levels. Broad experience in technical research, computer modeling, and expert witness testimony.

Employment

Principal, FINCAP, Inc. (Sep. 1979 to present)	Economic consulting firm specializing in regulated industries and valuation of closely-held businesses. Assignments have involved electric, gas, telecommunication, and water/sewer utilities, with clients including utilities, consumer groups, municipalities, regulatory agencies, and cogenerators. Areas of participation have included revenue requirements, rate of return, rate design, tariff analysis, avoided cost, forecasting, and negotiations. Other assignments have involved some seventy valuations as well as various economic (e.g., damage) analyses, typically in connection with litigation. Presented expert witness testimony before courts and regulatory agencies on over one hundred occasions.
Adjunct Assistant Professor, University of Texas at Austin (Sep. 1979 to May. 1981)	Taught undergraduate courses in finance: Fin. 370 – Integrative Finance and Fin. 357 – Managerial Finance.
Assistant Director, Economic Research Division, Public Utility Commission of Texas (Sep. 1976 to Aug. 1979)	Division consisted of approximately twenty-five financial analysts, economists, and systems analysts responsible for rate of return, rate design, special projects, and computer systems. Directed Staff participation in rate cases, presented testimony on approximately thirty-five occasions, and was involved in some forty other cases ultimately settled. Instrumental in the initial development of rate of return and financial policy for newly-created agency. Performed independent research and managed State and Federal funded projects. Assisted in preparing appeals to the Texas Supreme Court and testimony presented before the Interstate Commerce Commission and Department of Energy. Maintained communications with financial community, industry representatives, media, and consumer groups. Appointed by Commissioners as Acting Director.

Assistant Professor, College of Business Administration,
University of Colorado at Boulder
(Jan. 1977 to Dec. 1978)

Taught graduate and undergraduate courses in finance: Fin. 305 – Introductory Finance, Fin. 401 – Managerial Finance, Fin. 402 – Case Problems in Finance, and Fin. 602 – Graduate Corporate Finance.

Teaching Assistant,
University of Texas at Austin
(Jan. 1973 to Dec. 1976)

Taught undergraduate courses in finance and accounting: Acc. 311 – Financial Accounting, Acc. 312 – Managerial Accounting, and Fin. 357 – Managerial Finance. Elected to College of Business Administration Teaching Assistants' Committee.

Internal Auditor,
Sears, Roebuck and Company, Dallas, Texas
(Nov. 1970 to Aug 1972)

Performed audits on internal operations involving cash, accounts receivable, merchandise, accounting, and operational controls, purchasing, payroll, etc. Developed operating and administrative policy and instruction. Performed special assignments on inventory irregularities and Justice Department Civil Investigative Demands.

Accounts Payable Clerk,
Transcontinental Gas Pipeline Corp., Houston, Texas
(May. 1969 to Aug. 1969)

Processed documentation and authorized payments to suppliers and creditors.

Education

Ph.D., Finance, Accounting, and Economics,
University of Texas at Austin
(Sep. 1974 to May 1980)

Doctoral program included coursework in corporate finance, investment theory, accounting, and economics. Elected to honor society of Phi Kappa Phi. Received University outstanding doctoral dissertation award

Dissertation: *Estimating the Cost of Equity to Texas Public Utility Companies*

M.B.A., Finance and Accounting,
University of Texas at Austin,
(Sep. 1972 to Aug. 1974)

Awarded Wright Patman Scholarship by World and Texas Credit Union Leagues.

Professional Report: *Planning a Small Business Enterprise in Austin, Texas*

B.B.A., Accounting and Finance,
Southern Methodist University, Dallas, Texas
(Sep. 1967 to Dec. 1971)

Dean's List 1967-1971 and member of Phi Gamma Delta Fraternity.

Other Professional Activities

Certified Public Accountant, Texas Certificate No. 13,710 (October 1974); entire exam passed in May 1972. Member of the American Institute of Certified Public Accountants and Texas Society of Certified Public Accountants.

Member of Financial Management Association, Southwestern Finance Association, and American Finance Association. Participated as session chairman, moderator, and paper discussant at annual meetings of these and other professional associations.

Visiting lecturer in Executive M.B.A program at the University of Stellenbosch Graduate Business School, Belleville, South Africa (1983 and 1984).

Associate Editor of *Austin Financial Digest*, 1974-1975. Wrote and edited a series of investment and economic articles published in a local investment advisory service.

Military

Texas Army National Guard, Feb. 1970 to Sep. 1976. Specialist 5th Class with duty assignments including recovery vehicle operator for armor unit and company clerk for finance unit.

Bibliography

Monographs

“On the Use of Security Analysts’ Growth Projections in the DCF Model,” with William E. Avera, *Earnings Regulation Under Inflation*, J. R. Foster and S. R. Holmberg, eds., Institute for Study of Regulation (1982).

“An Examination of the Concept of Using Relative Customer Class Risk to Set Target Rates of Return in Electric Cost-of-Service Studies”, with William E. Avera, Electricity Consumers Resource Council (ELCON) (1981); portions reprinted in *Public Utilities Fortnightly* (Nov. 11, 1982).

“The Spring Thing (A) and (B)” and “Teaching Notes”, with Mike E. Miles, a two-part case study in the evaluation, management, and control of risk; distributed by *Harvard's Intercollegiate Case Clearing House*; reprinted in *Strategy and Policy: Concepts and Cases*, A. A. Strickland and A. J. Thompson, Business Publications, Inc. (1978) and *Cases in Managing Financial Resources*, I. Matur and D. Loy, Reston Publishing Co., Inc. (1984).

“Energy Conservation in Existing Residences, Project Director for development of instruction manual and workshops promoting retrofitting of existing homes, *Governor's Office of Energy Resources* and *Department of Energy* (1977-1978).

“Linear Algebra,” “Calculus,” “Sets and Functions,” and “Simulation Techniques,” contributed to and edited four mathematics programmed learning texts for MBA students, *Texas Bureau of Business Research* (1975).

Articles and Notes

“How to Value Personal Service Practices,” with Keith Wm. Fairchild, *The Practical Accountant* (August 1989).

“The Impact of Regulatory Climate on Utility Capital Costs: An Alternative Test,” with Adrien M. McKenzie, *Public Utilities Fortnightly* (May 25, 1989).

“North Arctic Industries, Limited,” with Keith Wm. Fairchild, *Case Research Journal* (Spring 1988).

“Regulatory Effects on Electric Utilities' Cost of Capital Reexamined,” with Louis E. Buck, Jr., *Public Utilities Fortnightly* (September 2, 1982).

“Capital Needs for Electric Utility Companies in Texas: 1976-1985”, *Texas Business Review* (January-February 1979), reprinted in “The Energy Picture: Problems and Prospects”, J. E. Pluta, ed., *Bureau of Business Research* (1980).

“Some Thoughts on the Rate of Return to Public Utility Companies,” with William E. Avera, *Proceedings of the NARUC Biennial Regulatory Information Conference* (1978).

“Regulatory Problems of EFTS,” with Robert McLeod, *Issues in Bank Regulation* (Summer 1978) reprinted in *Illinois Banker* (January 1979).

“Regulation of EFTS as a Public Utility,” with Robert McLeod, *Proceedings of the Conference on Bank Structure and Competition* (1978).

“Equity Management of REA Cooperatives,” with Jerry Thomas, *Proceedings of the Southwestern Finance Association* (1978).

“Capital Costs Within a Firm,” *Proceedings of the Southwestern Finance Association* (1977).

“The Cost of Capital to a Wholly-Owned Public Utility Subsidiary,” *Proceedings of the Southwestern Finance Association* (1977).

Selected Papers and Presentations

"Legislative Changes Affecting Texas Utilities," Texas Committee of Utility and Railroad Tax Representatives, Fall Meeting, Austin, Texas (September 1995).

"Rate of Return," "Origins of Information," Economics," and "Deferred Taxes and ITC's," New Mexico State University and National Association of Regulatory Utility Commissioners Public Utility Conferences on Regulation and the Rate-Making Process, Albuquerque, New Mexico (October 1983, 1984, 1985, 1986, 1987, 1988, 1990, 1991, 1992, 1994, and 1995, and September 1989); Pittsburgh, Pennsylvania (April 1993); and Baltimore, Maryland (May 1994 and 1995).

"Developing a Cost-of-Service Study," 1994 Texas Section American Water Works Association Annual Conference, Amarillo, Texas (March 1994).

"Financial Aspects of Cost of Capital and Common Cost Considerations," Kidder, Peabody & Co. Two-Day Rate Case Workshop for Regulated Utility Companies, New York, New York (June 1993).

"Cost-of-Service Studies and Rate Design," General Management of Electric Utilities (A Training Program for Electric Utility Managers from Developing Countries), Austin, Texas (October 1989 and November 1990 and 1991).

"Rate Base and Revenue Requirements," The University of Texas Regulatory Institute Fundamentals of Utility Regulation, Austin, Texas (June 1989 and 1990).

"Determining the Cost of Capital in Today's Diversified Companies," New Mexico State University Public Utilities Course Part II, Advanced Analysis of Pricing and Utility Revenues, San Francisco, California (June 1990).

"Estimating the Cost of Equity," Oklahoma Association of Tax Representatives, Tulsa, Oklahoma (May 1990).

"Impact of Regulations," Business and the Economy, Leadership Dallas, Dallas, Texas (November 1989).

"Accounting and Finance Workshop" and "Divisional Cost of Capital," New Mexico State University Current Issues Challenging the Regulatory Process, Albuquerque, New Mexico (April 1985 and 1986) and Santa Fe, New Mexico (March 1989).

"Divisional Cost of Equity by Risk Comparability and DCF Analyses," NARUC Advanced Regulatory Studies Program, Williamsburg, Virginia (February 1988) and USTA Rate of Return Task Force, Chicago, Illinois (June 1988).

"Revenue Requirements," Revenue, Pricing, and Regulation in Texas Water Utilities, Texas Water Utilities Conference, Austin, Texas (August 1987 and May 1988).

"Rate Filing – Basic Ratemaking," Texas Gas Association Accounting Workshop, Austin, Texas (March 1988).

"The Effects of Regulation on Fair Market Value: P.H. Robinson – A Case Study," Annual Meeting of the Texas Committee of Utility and Railroad Tax Representatives, Austin, Texas (September 1987).

"How to Value Closely-held Businesses," TSCPA 1987 Entrepreneurs Conference, San Antonio, Texas (May 1987).

"Revenue Requirements" and "Determining the Rate of Return", New Mexico State University Regulation and the Rate-Making Process, Southwestern Water Utilities Conference, Albuquerque, New Mexico (July 1986) and El Paso, Texas (November 1980).

"How to Evaluate Personal Service Practices," TSCPA CPE Exposition 1985, Houston and Dallas, Texas (December 1985).

"How to Start a Small Business – Accounting and Record Keeping," University of Texas Management Development Program, Austin, Texas (October 1984).

"Project Financing of Public Utility Facilities", TSCPA Conference on Public Utilities Accounting and Ratemaking, San Antonio, Texas (April 1984).

"Valuation of Closely-Held Businesses," Concho Valley Estate Planning Council, San Angelo, Texas (September 1982).

"Rating Regulatory Performance and Its Impact on the Cost of Capital," New Mexico State University Seminar on Regulation and the Cost of Capital, El Paso, Texas (May 1982).

"Effect of Inflation on Rate of Return," Cost of Capital Conference and Workshop, Pinehurst, North Carolina (April 1981).

"Original Cost Versus Current Cost Regulation: A Re-examination," Financial Management Association, New Orleans, Louisiana (October 1980).

"Capital Investment Analysis for Electric Utilities," The University of Texas at Dallas, Richardson, Texas (June 1980).

"The Determinants of Capital Costs to the Electric Utility Industry," with Cedric E. Grice, Southwestern Finance Association, San Antonio, Texas (March 1980).

"The Entrepreneur and Management: A Case Study," Small Business Administration Seminar, Austin, Texas (October 1979).

"Capital Budgeting by Public Utilities: A New Perspective," with W. Clifford Atherton, Jr., Financial Management Association, Boston, Massachusetts (October 1979).

"Issues in Regulated Industries – Electric Utilities," University of Texas at Dallas 4th Annual Public Utilities Conference, Dallas, Texas (July 1979).

"Investment Conditions and Strategies in Today's Markets," American Society of Women Accountants, Austin, Texas (January 1979).

"Attrition: A Practical Problem in Determining a Fair Return to Public Utility Companies," Financial Management Association, Minneapolis, Minnesota (October 1978).

"The Cost of Equity to Wholly-Owned Electric Utility Subsidiaries," with William L. Beedles, Financial Management Association, Minneapolis, Minnesota (October 1978).

"PUC Retrofitting Program," Texas Electric Cooperatives Spring Workshop, Austin, Texas (May 1978).

"The Economics of Regulated Industries," Consumer Economics Forum, Houston, Texas (November 1977).

"Public Utilities as Consumer Targets – Is the Pressure Justified?," University of Texas at Dallas 2nd Annual Public Utilities Conference, Dallas, Texas (July 1977).

APPENDIX B

BRUCE H. FAIRCHILD

SUMMARY OF TESTIMONY BEFORE REGULATORY AGENCIES

No.	Utility Case	Agency	Docket	Date	Nature of Testimony
1.	Arkansas Electric Cooperative	Arkansas PSC	U-3071	Aug-80	Wholesale Rate Design
2.	East Central Oklahoma Electric Cooperative	Oklahoma CC	26925	Sep-80	Retail Rate Design
3.	Kansas Gas & Electric Company	Kansas CC	115379-U	Nov-80	PURPA Rate Design Standards
4.	Kansas Gas & Electric Company	Kansas CC	128139-U	May-81	Attrition
5.	City of Austin Electric Department	City of Austin	--	Jun-81	PURPA Rate Design Standards
6.	Tarrant County Water Control and Improvement District No. 1	Texas Water Commission	--	Oct-81	Wholesale Rate Design
7.	Owentown Gas Company	Texas RRC	2720	Jan-82	Revenue Requirements and Retail Rate Design
8.	Kansas Gas & Electric Company	Kansas CC	134792-U	Aug-82	Attrition
9.	Mississippi Power Company	Mississippi PSC	U-4190	Sep-82	Working Capital
10.	Lone Star Gas Company	Texas RRC	3757; 3794	Feb-83	Rate of Return on Equity
11.	Kansas Gas & Electric Company	Kansas CC	134792-U	Feb-83	Rate of Return on Equity
12.	Southwestern Bell Telephone Company	Oklahoma CC	28002	Oct-83	Rate of Return on Equity
13.	Morgas Company	Texas RRC	4063	Nov-83	Revenue Requirements
14.	Seagull Energy	Texas RRC	4541	Jul-84	Rate of Return
15.	Southwestern Bell Telephone Company	FCC	84-800	Nov-84	Rate of Return on Equity
16.	Kansas Gas & Electric Company, Kansas City Power & Light Company, and Kansas Electric Power Cooperatives	Kansas CC	142098-U; 142099-U; 142100-U	May-85	Nuclear Plant Capital Costs and Allowance for Funds Used During Construction
17.	Lone Star Gas Company	Texas RRC	5207	Oct-85	Overhead Cost Allocation
18.	Westar Transmission Company	Texas RRC	5787	Nov-85 Jan-86 Jul-86	Rate of Return, Rate Design, and Gas Processing Plant Economics
19.	City of Houston	Texas Water Commission	RC-022; RC-023	Nov-86	Line Losses and Known and Measurable Changes
20.	ENSTAR Natural Company	Alaska PUC	TA 50-4; R-87-2; U-87-2	Nov-86 May-87 May-87	Cost Allocation, Rate Design, and Tax Rate Changes
21.	Brazos River Authority	Texas Water Commission	RC-020	Jan-87	Revenue Requirements and Rate Design
22.	East Texas Industrial Gas Company	Texas RRC	5878	Feb-87	Revenue Requirements and Rate Design
23.	Seagull Energy	Texas RRC	6629	Jun-87	Revenue Requirements

Bruce H. Fairchild
Summary of Testimony Before Regulatory Agencies

(Continued)

No.	Utility Case	Agency	Docket	Date	Nature of Testimony
24.	ENSTAR Natural Company	Alaska PUC	U-87-42	Jul-87 Sep-87 Sep-87	Cost Allocation, Rate Design, and Contracts
25.	High Plains Natural Gas Company	Texas RRC	6779	Sep-87	Rate of Return
26.	Hughes Texas Petroleum	Texas RRC	2-91,855	Jan-88	Interim Rates
27.	Cavallo Pipeline Company	Texas RRC	7086	Sep-88	Revenue Requirements
28.	Union Gas System, Inc.	Kansas CC	165591-U	Mar-89 Aug-89	Rate of Return
29.	ENSTAR Natural Gas Company	Alaska PUC	U-88-70	Mar-89	Cost Allocation and Bypass
30.	Morgas Co.	Texas RRC	7538	Aug-89	Rate of Return and Cost Allocation
31.	Corpus Christi Transmission Company	Texas RRC	7346	Sep-89	Revenue Requirements
32.	Amoco Gas Co.	Texas RRC	7550	Oct-89	Rate of Return and Cost Allocation
33.	Iowa Southern Utilities	Iowa Utilities Board	RPU-89-7	Nov-89 Mar-90	Rate of Return on Equity
34.	Southwestern Bell Telephone Company	FCC	89-624	Feb-90 Apr-90	Rate of Return on Equity
35.	Lower Colorado River Authority	Texas PUC	9427	Mar-90 Aug-90 Aug-90	Revenue Requirements
36.	Rio Grande Valley Gas Company	Texas RRC	7604	May-90	Consolidated FIT and Depreciation
37.	Southern Union Gas Company	El Paso PURB	--	Oct-90	Disallowed Expenses and FIT
38.	Iowa Southern Utilities	Iowa Utilities Board	RPU-90-8	Nov-90 Feb-91	Rate of Return on Equity
39.	East Texas Gas Systems	Texas RRC	7863	Dec-90	Revenue Requirements
40.	San Jacinto Gas Transmission	Texas RRC	7865	Dec-90	Revenue Requirements
41.	Southern Union Gas Company	Austin; Texas RRC	-- 7878	Feb-91 Feb-91	Rate of Return and Acquisition Adjustment
42.	Southern Union Gas Company	Port Arthur; Texas RRC	-- 8033	Mar-91 Aug-91 Oct-91	Rate of Return and Acquisition Adjustment
43.	Cavallo Pipeline Company	Texas RRC	8016	Jun-91	Revenue Requirements
44.	New Orleans Public Service Inc.	New Orleans City Council	CD-91-1	Jun-91 Mar-92	Rate of Return on Equity
45.	Houston Pipe Line Company	Texas RRC	8017	Jul-91	Rate of Return
No.	**Utility Case**	**Agency**	**Docket**	**Date**	**Nature of Testimony**

Bruce H. Fairchild
Summary of Testimony Before Regulatory Agencies

(Continued)

No.	Utility Case	Agency	Docket	Date	Nature of Testimony
46.	Southern Union Gas Company	El Paso PURB	--	Aug-91 Sep-91	Acquisition Adjustment
47.	Southwestern Gas Pipeline, Inc.	Texas RRC	8040	Jan-92 Feb-92	Rate Design and Settlement
48.	City of Fort Worth	Texas Water Commission	8748-A 9261-A	Mar-92 Aug-92 Dec-92 Oct-94 Nov-94	Interim Rates, Revenue Requirements, and Public Interest
49.	Southern Union Gas Company	Oklahoma Corp. Com.	--	Jun-92	Rate of Return
50.	Minnegasco	Minnesota PUC	G-008/GR-92-400	Jul-92 Dec-92	Rate of Return
51.	Guadalupe-Blanco River Authority	Texas PUC	11266	Sep-92	Cost Allocation and Bond Funds
52.	Dorchester Intra-State Gas System	Texas RRC	8111	Oct-92 Nov-92	Rate Impact of System Upgrade
53.	Corpus Christi Transmission Company GP and GPII	Texas RRC	8300 8301	Oct-92 Oct-92	Revenue Requirements
54.	East Texas Industrial Gas Company	Texas RRC	8326	Mar-93	Revenue Requirements
55.	Arkansas Louisiana Gas Company	Arkansas PSC	93-081-U	Apr-93 Oct-93	Rate of Return on Equity
56.	Texas Utilities Electric Company	Texas PUC	11735	Jun-93 Jul-93	Impact of Nuclear Plant Construction Delay
57.	Minnegasco	Minnesota PUC	G-008/GR-93-1090	Nov-93 Apr-94	Rate of Return
58.	Gulf States Utilities Company	Municipalities	--	May-94 Oct-94 Nov-94	Rate of Return on Equity
59.	Louisiana Power & Light Company	Louisiana PSC	U-20925	Aug-94 Feb-95	Rate of Return on Equity
60.	San Jacinto Gas Transmission	Texas RRC	8429	Sep-94	Revenue Requirements
61.	Cavallo Pipeline Company	Texas RRC	8465	Sep-94	Revenue Requirements
62.	Eastrans Limited Partnership	Texas RRC	8385	Oct-94	Revenue Requirements
63.	Gulf States Utilities Company	Louisiana PSC	U-19904	Oct-94	Rate of Return on Equity
64.	Entergy Services, Inc.	FERC	ER95-112-000	Mar-95 Nov-95	Rate of Return on Equity
65.	East Texas Gas Systems	Texas RRC	8435	Apr-95	Revenue Requirements
66.	System Energy Resources, Inc.	FERC	ER95-1042-000	May-95 Dec-95 Jan-96	Rate of Return on Equity

Bruce H. Fairchild
Summary of Testimony Before Regulatory Agencies

(Continued)

No.	Utility Case	Agency	Docket	Date	Nature of Testimony
67.	Minnegasco	Minnesota PUC	G-008/GR-95-700	Aug-95 Dec-95	Rate of Return
68.	Entex	Louisiana PSC	U-21586	Aug-95	Rate of Return
69.	City of Fort Worth	Texas NRCC	SOAH 582-95-1084	Nov-95	Public Interest of Contract
70.	Seagull Energy Corporation	Texas RRC	8589	Nov-95	Revenue Requirements
71.	Corpus Christi Transmission Company LP	Texas RRC	8449	Feb-96	Revenue Requirements
72.	Missouri Gas Energy	Missouri PSC	GR-96-285	Apr-96 Sep-96 Oct-96	Rate of Return
73.	Entex	Mississippi PSC	96-UA-202	May-96	Rate of Return
74.	Entergy Gulf States, Inc.	Louisiana PSC	U-22084	May-96	Rate of Return on Equity (Gas)
75.	Entergy Gulf States, Inc.	Louisiana PSC	U-22092	May-96 Oct-96	Rate of Return on Equity
76.	American Gas Storage, L.P.	Texas RRC	8591	Sep-96	Revenue Requirements
77.	Entergy Louisiana, Inc.	Louisiana PSC	U-20925	Sep-96 Oct-96	Rate of Return on Equity
78.	Lone Star Pipeline and Gas Company	Texas RRC	8664	Oct-96 Jan-97	Rate of Return
79.	Entergy Arkansas, Inc.	Arkansas PSC	96-360-U	Oct-96 Sep-97	Rate of Return on Equity
80.	East Texas Gas Systems	Texas RRC	8658	Nov-96	Revenue Requirements
81.	Entergy Gulf States, Inc.	Texas PUC	16705	Nov-96 Jul-97	Rate of Return on Equity
82.	Eastrans Limited Partnership	Texas RRC	8657	Nov-96	Revenue Requirements
83.	Enserch Processing, Inc.	Texas RRC	8763	Nov-96	Interim Rates
84.	Entergy New Orleans, Inc.	City of New Orleans	UD-97-1	Feb-97 Mar-97 May-98	Rate of Return on Equity
85.	ENSTAR Natural Gas Company	Alaska PUC	U-96-108	Mar-97 Apr-97	Service Area Certificate
86.	San Jacinto Gas Transmission	Texas RRC	8741	Sep-97	Revenue Requirements
87.	Missouri Gas Energy	Missouri PSC	GR-98-140	Nov-97 Apr-98 May-98	Rate of Return
88.	Corpus Christi Transmission Company LP	Texas RRC	8762	Dec-97	Revenue Requirements
89.	Texas-New Mexico Power Company	Texas PUC	17751	Feb-98	Excess Cost Over Market
90.	Southern Union Gas Company	Texas RRC	8878	May-98	Rate of Return
No.	**Utility Case**	**Agency**	**Docket**	**Date**	**Nature of Testimony**

Bruce H. Fairchild
Summary of Testimony Before Regulatory Agencies

(Continued)

No.	Utility Case	Agency	Docket	Date	Nature of Testimony
91.	Entergy Louisiana, Inc.	Louisiana PSC	U-20925	May-98 Jul-98	Financial Integrity
92.	Entergy Gulf States, Inc.	Louisiana PSC	U-22092	May-98 Jul-98	Financial Integrity
93.	ACGC Gathering Company, LLC	Texas RRC	8896	Sep-98	Cost-based Rates
94.	American Gas Storage, L.P.	Texas RRC	8855	Oct-98	Revenue Requirements
95.	Duke Energy Intrastate Network	Texas RRC	8940	Jun-99	Rate of Return
96.	Aquila Energy Corporation	Texas RRC	8970	Aug-99	Revenue Requirements
97.	San Jacinto Gas Transmission	Texas RRC	8974	Sep-99	Revenue Requirements
98.	Southern Union Gas Company	El Paso PURB	--	Oct-99	Rate of Return
99.	TXU Lone Star Pipeline	Texas RRC	8976	Oct-99 Feb-00	Rate of Return
100.	Sharyland Utilities, L.P.	Texas PUC	21591	Nov-99	Rate of Return
101.	TXU Lone Star Gas Distribution	Texas RRC	9145	Apr-00 Aug-00	Rate of Return
102.	Rotherwood Eastex Gas Storage	Texas RRC	9136	May-00	Revenue Requirements
103.	Eastex Gas Storage & Exchange, Inc.	Texas RRC	9137	May-00	Revenue Requirements
104.	Eastex Gas Storage & Exchange, Inc.	Texas RRC	9138	Jul-00	Revenue Requirements
105.	East Texas Gas Systems	Texas RRC	9139	Jul-00	Revenue Requirements
106.	Eastrans Limited Partnership	Texas RRC	9140	Aug-00	Revenue Requirements
107.	Reliant Energy – Entex	City of Tyler	--	Oct-00	Rate of Return
108.	City of Fort Worth	Texas NRCC	SOAH 582-00-1092	Dec-00	CCN – Rates and Financial Ability
109.	Entergy Services, Inc.	FERC	RTO1-75	Dec-00	Rate of Return on Equity
110	ENSTAR Natural Gas Company	Alaska PUC	U-00-88	Jun-01 Aug-01 Nov-01 Sep-02 Dec-02	Revenue Requirements, Cost Allocation, and Rate Design
111.	TXU Gas Distribution	Texas RRC	9225	Jul-01	Rate of Return
112.	Centana Intrastate Pipeline LLC	Texas RRC	9243	Aug-01	Rate of Return
113.	Maxwell Water Supply Corp.	Texas NRCC	SOAH-582-01-0802	Oct-01 Mar-02 Apr-02	Reasonableness of Rates
114.	Reliant Energy Arkla	Arkansas PSC	01-243-U	Dec-01 Jun-01	Rate of Return
115.	Entergy Services, Inc.	FERC	ER01-2214-000	Mar-02	Rate of Return on Equity

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Summary of Testimony Before Regulatory Agencies

(Continued)

116.	TXU Lone Star Pipeline	Texas RRC	9292	Apr-02	Rate of Return
117.	Southern Union Gas Company	El Paso PURB	--	Apr-02	Rate of Return
118.	San Jacinto Gas Transmission Co.	Texas RRC	9301	May-02	Rate of Return
119.	Duke Energy Intrastate Network	Texas RRC	9302	May-02	Rate of Return
120.	Reliant Energy Arkla	Oklahoma CC	200200166	May-02	Rate of Return
121.	TXU Gas Distribution	Texas RRC	9313	Jul-02 Sep-02	Rate of Return
122.	Entergy Mississippi, Inc.	Mississippi PSC	2002-UN-256	Aug-02	Rate of Return on Equity
123.	Aquila Storage & Transportation LP	Texas RRC	9323	Sep-02	Revenue Requirements
124.	Panther Pipeline Ltd.	Texas RRC	9291	Oct-02	Revenue Requirements
125.	SEMCO Energy	Michigan PSC	U-13575	Nov-02	Revenue Requirements
126.	CenterPoint Energy Entex	Louisiana PSC	U-26720	Jan-03	Rate of Return
127.	Crosstex CCNG Transmission Ltd.	Texas RRC	9363	May-03	Revenue Requirements
128.	TXU Gas Company	Texas RRC	9400	May-03 Jan-04	Rate of Return
129.	Eastrans Limited Partnership	Texas RRC	9386	May-03	Rate of Return
130.	CenterPoint Energy Entex	City of Houston		Jun-03	Rate of Return
131.	East Texas Gas Systems, L.P.	Texas RRC	9385	Jun-03	Rate of Return
132.	ENSTAR Natural Gas Company	Alaska RCA	U-03-084	Aug-03 Nov-03	Line Extension Surcharge
133.	CenterPoint Energy Arkla	Louisiana PSC		Nov-03	Rate of Return
134.	ENSTAR Natural Gas Company	Alaska RCA	U-03-091	Feb-04	Cost Separation and Taxes
135.	Sid Richardson Pipeline, Ltd.	Texas RRC	9532	Jun-04 Nov-04	Revenue Requirements
136.	ETC Katy Pipeline, Ltd.	Texas RRC	9524	Sep-04	Revenue Requirements
137.	CenterPoint Energy Entex	Mississippi PSC	03-UN-0831	Sep-04	Rate Formula
138.	Centana Intrastate Pipeline LLC	Texas RRC	9527	Sep-04	Rate of Return
139.	SEMCO Energy	Michigan PSC	U-14338	Dec-04	Revenue Requirements
140.	Atmos Energy – Energas	Texas RRC	9539	Feb-05	Regulatory Policy
141.	Crosstex North Texas Pipeline, L.P.	Texas RRC	9613	Sep-05	Revenue Requirements
142.	SiEnergy, L.P.	Texas RRC	9604	Dec-05	Rate of Return, Income Taxes, and Cost Allocation
143.	ENSTAR Natural Gas Company	Alaska RCA	TA-140-4	Feb-06	Connection Fees
144.	SEMCO Energy	Michigan PSC	U-14984	May-06 Dec-06	Revenue Requirements

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Summary of Testimony Before Regulatory Agencies
(Continued)

No.	Utility Case	Agency	Docket	Date	Nature of Testimony
145.	Atmos Energy – Mid-Tex	Texas RRC	9676	May-06 Oct-06	Revenue Requirements
146.	EasTrans Limited Partnership	Texas RRC	9659	Jun-06	Rate of Return
147.	Kinder Morgan Texas Pipeline, L.P.	Texas RRC	9688	Jul-06	Rate of Return
148.	Crosstex CCNG Transmission Ltd.	Texas RRC	9660	Aug-06	Revenue Requirements
149.	Enbridge Pipelines (North Texas), LP	Texas RRC	9691	Oct-06	Rate of Return
150.	Panther Interstate Pipeline Energy	FERC	CP03-338-00	Mar-07	Revenue Requirements
151.	El Paso Electric Company	Texas PUC	34494	Jul-07	CCN
152.	El Paso Electric Company	NM PRC	07-00301-UT	Jul-07	CCN
153.	Atmos Energy	Kansas CC	08-ATMG-280-RTS	Sep-07 Feb-08	Rate of Return on Equity
154.	Centana Intrastate Pipeline LLC	Texas RRC	9759	Sep-07	Rate of Return
155.	Texas Gas Service Company	Texas RRC	9770	Nov-07	Rate of Return
156.	ENSTAR Natural Gas Company	Alaska RCA	U-08-25	Jun-08	Rate Class Switching
157.	ConocoPhillips Transportation Alaska	Alaska RCA	TL-131-301	Oct-08	Rate of Return
158.	ExxonMobil Pipeline Co.	Alaska RCA	TL-140-304	Nov-08	Rate of Return
159.	Crosstex North Texas Pipeline, L.P.	Texas RRC	9843	Dec-08	Revenue Requirements
160.	Koch Alaska Pipeline Company	Alaska RCA	TL 128-308	Dec-08	Rate of Return
161.	Unocal Pipeline Company	Alaska RCA	TL 118-312	Dec-08	Rate of Return
162.	ETC Katy Pipeline, Ltd.	Texas RRC	9841	Dec-08	Revenue Requirements
163.	Oklahoma Natural Gas	Oklahoma CC	200800348	Jan-09	Rate of Return on Equity
164.	Entergy Mississippi, Inc.	Mississippi PSC	EC-123-0082	Mar 09	Rate of Return on Equity
165.	ENSTAR Natural Gas Company	Alaska RCA	U-09-69 U-09-70	Jun-09 Jul-09 Oct-09	Revenue Requirements, Cost Allocation, and Rate Design
166.	EasTrans, LLC	Texas RRC	9857	Jun-09	Rate of Return
167.	Oklahoma Natural Gas	Oklahoma CC	200900110	Jun-09	Rate of Return
168.	Crosstex CCNG Transmission Ltd.	Texas RRC	9858	Jun-09	Revenue Requirements
169.	ConocoPhillips Transportation Alaska	Alaska RCA	TL-137-301	Jul-09	Rate of Return
170.	ENSTAR Natural Gas Company	Alaska RCA	U-08-142	Jul-09	Gas Cost Adjustment
171.	Kinder Morgan Texas Pipeline, LLC	Texas RRC	9889	Jul-09	Rate of Return
172.	Koch Alaska Pipeline Company	Alaska RCA	TL 133-308	Aug-09	Rate of Return
173.	ExxonMobil Pipeline Co.	Alaska RCA	TL-147-304	Nov-09	Rate of Return
174.	Texas Gas Service Company	El Paso PURB	--	Dec-09	Rate of Return
175.	Unocal Pipeline Company	Alaska RCA	TL126-312	Dec-09	Rate of Return

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Summary of Testimony Before Regulatory Agencies

(Continued)

176.	Kuparuk Transportation Company	Alaska RCA	P-08-05	Apr-10	Rate of Return
177.	Trans-Alaska Pipeline System	FERC	ISO9-348-000	Apr 10	Rate of Return
178.	Texas Gas Service	Texas RRC	9988	May 10 Aug 10	Rate of Return
179.	SEMCO Energy Gas Company	Michigan PSC	U-16169	Jun 10 Dec 10	Revenue Requirements
180.	ConocoPhillips Transportation Alaska	Alaska RCA	TL-137-301	Jul 10	Rate of Return
181.	Koch Alaska Pipeline Company, LLC	Alaska RCA	TL-138-308	Aug 10	Rate of Return
182.	CPS Energy	Texas PUC	36633	Sep 10 Apr 11	Rate of Return for MOU
183.	ExxonMobil Pipeline Co.	Alaska RCA	TL-151-304	Dec 10	Rate of Return
184.	New Mexico Gas Company	NM PRC	11-00042-UT	Mar 11	Rate of Return
185.	ConocoPhillips Transportation Alaska	Alaska RCA	TL-143-301	May 11	Rate of Return
186.	Enbridge Pipelines (Southern Lights)	FERC	IS11-146-000	Jun 11 Nov 11	Rate of Return
187.	Koch Alaska Pipeline Company, LLC	Alaska RCA	TL-138-___	Jul 11	Rate of Return
188.	Unocal Pipeline Company	Alaska RCA	TL126-___	Dec 11	Rate of Return

OVERALL RATE OF RETURN

Capital Component	Percent of Total	Component Cost	Weighted Cost
Long-term Debt	41.15%	5.33%	2.19%
Common Equity	58.85%	10.75%	6.33%
Total	**100.00%**		**8.52%**

LDC INDUSTRY GROUP CAPITAL STRUCTURE

	Fiscal Year-end 2011			Fiscal Year-end 2010			Fiscal Year-end 2009			Fiscal Year-end 2008			Fiscal Year-end 2007		
Company	**L.T. Debt**	**Pref. Stock**	**Com. Equity**	**L.T. Debt**	**Pref. Stock**	**Com. Equity**	**L.T. Debt**	**Pref. Stock**	**Com. Equity**	**L.T. Debt**	**Pref. Stock**	**Com. Equity**	**L.T. Debt**	**Pref. Stock**	**Com. Equity**
AGL Resources	51.7%	0.0%	48.3%	51.8%	0.0%	48.2%	52.0%	0.0%	48.0%	48.8%	0.0%	51.2%	50.3%	0.0%	49.7%
Atmos Energy	49.5%	0.0%	50.5%	49.9%	0.0%	50.1%	49.9%	0.0%	50.1%	49.7%	0.0%	50.3%	50.5%	0.0%	49.5%
Laclede Group	38.9%	0.0%	61.1%	42.1%	0.0%	57.9%	42.9%	0.0%	57.1%	42.3%	0.0%	57.7%	43.3%	0.1%	56.6%
New Jersey Resources	35.9%	0.0%	64.1%	38.8%	0.0%	61.2%	40.1%	0.0%	59.9%	39.1%	0.0%	60.9%	40.0%	0.0%	60.0%
Northwest Natural Gas	48.8%	0.0%	51.2%	46.5%	0.0%	53.5%	49.1%	0.0%	50.9%	47.2%	0.0%	52.8%	44.9%	0.0%	55.1%
Piedmont Natural Gas	40.4%	0.0%	59.6%	43.1%	0.0%	56.9%	46.1%	0.0%	53.9%	46.5%	0.0%	53.5%	46.4%	0.0%	53.6%
South Jersey Industries	40.6%	0.0%	59.4%	44.2%	0.0%	55.8%	39.0%	0.0%	61.0%	39.9%	0.0%	60.1%	41.0%	0.0%	59.0%
Southwest Gas	50.6%	0.0%	49.4%	50.7%	0.0%	49.3%	53.6%	0.0%	46.4%	53.2%	0.0%	46.8%	55.5%	0.0%	44.5%
WGL Holdings	35.1%	1.5%	63.5%	34.5%	1.6%	63.9%	36.4%	1.6%	62.0%	37.9%	1.5%	60.6%	38.8%	1.5%	59.7%
LDC GROUP AVERAGE	**43.5%**	**0.2%**	**56.4%**	**44.6%**	**0.2%**	**55.2%**	**45.5%**	**0.2%**	**54.4%**	**44.9%**	**0.2%**	**54.9%**	**45.6%**	**0.2%**	**54.2%**

Source: Company Form 10-Ks and Annual Reports.

DCF MODEL -- DIVIDEND YIELD

Company	Expected Dividend (a)	Price (b)	Dividend Yield (c)
AGL Resources	$ 1.84	$ 39.25	4.69%
Atmos Energy	$ 1.39	$ 30.96	4.49%
Laclede Group	$ 1.67	$ 39.97	4.18%
New Jersey Resources	$ 1.52	$ 45.10	3.37%
Northwest Natural Gas	$ 1.78	$ 45.52	3.91%
Piedmont Natural Gas	$ 1.16	$ 31.71	3.66%
South Jersey Industries	$ 1.64	$ 51.04	3.21%
Southwest Gas Corp	$ 1.18	$ 42.81	2.76%
WGL Holdings	$ 1.56	$ 40.68	3.84%
LDC GROUP AVERAGE			**3.79%**
ONEOK, Inc.	$ 2.48	$ 82.79	**3.00%**

(a) The Value Line Investment Survey (March 9, 2012).
(b) Yahoo Finance (March 1 - March 31, 2012).
(c) Expected Dividend / Price.

DCF MODEL -- EARNINGS GROWTH RATES

	Projected Growth			Historical Growth	
Company	Value Line (a)	I/B/E/S (b)	Zacks (c)	10-Year (a)	5-Year (a)
AGL Resources	5.5%	3.6%	4.3%	9.0%	4.5%
Atmos Energy	4.0%	3.5%	4.7%	7.0%	4.0%
Laclede Group	2.0%	5.3%	3.0%	6.5%	6.0%
New Jersey Resources	5.5%	2.3%	4.5%	7.5%	7.0%
Northwest Natural Gas	4.0%	3.3%	4.3%	6.0%	7.0%
Piedmont Natural Gas	2.5%	4.6%	4.7%	5.0%	4.5%
South Jersey Industries	9.0%	8.7%	6.0%	10.5%	9.5%
Southwest Gas Corp	9.5%	2.2%	5.3%	3.0%	6.5%
WGL Holdings	3.0%	4.5%	5.2%	3.0%	3.0%
LDC GROUP AVERAGE	**5.0%**	**4.2%**	**4.7%**	**6.4%**	**5.8%**
ONEOK, Inc.	**9.0%**	**10.0%**	**13.0%**	**9.5%**	**5.0%**

(a) The Value Line Investment Survey (March 9, 2012).
(b) Thomson Reuters Company Reports and Yahoo Finance (Retrieved March 19, 2012).
(c) Zacks Quotes and Research (Retrieved March 19, 2012).

DCF MODEL -- SUSTAINABLE GROWTH RATES (a)

	2015-2017 Projected				Shares Outstanding		Earnings Retention Growth			External Financing Growth					
Company	**Earnings per Share**	**Dividends per Share**	**Book Value per Share**	**Price per Share**	**2011**	**Proj. 15-17**	**Retention Ratio**	**Return on Equity**	**"b x r"**	**2015-2017 Market-to-Book Ratio**	**Growth Rate in Shares**	**"s"**	**"v"**	**"s x v"**	**Sustainable Growth**
AGL Resources	$ 4.10	$ 2.00	$ 34.25	$ 62.50	117.00	121.00	51.2%	12.0%	6.1%	1.82	0.7%	1.2%	45.2%	0.6%	6.7%
Atmos Energy	$ 2.70	$ 1.48	$ 34.65	$ 35.00	90.30	103.00	45.2%	7.8%	3.5%	1.01	2.7%	2.7%	1.0%	0.0%	3.5%
Laclede Group	$ 3.05	$ 1.80	$ 31.15	$ 47.50	22.43	26.00	41.0%	9.8%	4.0%	1.52	3.0%	4.6%	34.4%	1.6%	5.6%
New Jersey Resources	$ 3.45	$ 1.68	$ 24.60	$ 50.00	41.45	40.00	51.3%	14.0%	7.2%	2.03	-0.7%	-1.4%	50.8%	-0.7%	6.5%
Northwest Natural Gas	$ 3.60	$ 1.94	$ 33.95	$ 60.00	26.72	26.95	46.1%	10.6%	4.9%	1.77	0.2%	0.3%	43.4%	0.1%	5.0%
Piedmont Natural Gas	$ 1.90	$ 1.35	$ 14.70	$ 35.00	72.32	68.00	28.9%	12.9%	3.7%	2.38	-1.2%	-2.9%	58.0%	-1.7%	2.1%
South Jersey Industries	$ 4.50	$ 2.25	$ 25.70	$ 62.50	30.21	35.00	50.0%	17.5%	8.8%	2.43	3.0%	7.3%	58.9%	4.3%	13.0%
Southwest Gas Corp	$ 3.80	$ 1.60	$ 33.35	$ 57.50	45.96	51.00	57.9%	11.4%	6.6%	1.72	2.1%	3.6%	42.0%	1.5%	8.1%
WGL Holdings	$ 2.80	$ 1.75	$ 28.65	$ 42.50	51.20	52.00	37.5%	9.8%	3.7%	1.48	0.3%	0.5%	32.6%	0.2%	3.8%
LDC GROUP AVERAGE									**5.4%**					**0.6%**	**6.0%**
ONEOK, Inc.	$ 5.50	$ 3.40	$ 36.85	$ 82.50	103.25	95.00	38.2%	14.9%	**5.7%**	2.24	-1.7%	-3.7%	55.3%	-2.0%	**3.7%**

(a) The Value Line Investment Survey (March 9, 2012).

DCF MODEL -- OTHER PROJECTED AND HISTORICAL GROWTH RATES

	Net Book Value (a)			Dividends per Share (a)			Price per Share		
	Pro-	Historical		Pro-	Historical		Pro-	Historical (b)	
Company	jected	10-Year	5-Year	jected	10-Year	5-Year	jected (a)	10-Year	5-Year
AGL Resources	6.0%	7.0%	5.5%	2.0%	5.0%	7.5%	12.3%	5.3%	-0.4%
Atmos Energy	6.0%	6.5%	4.5%	1.5%	1.5%	1.5%	3.1%	2.8%	-0.2%
Laclede Group	4.5%	5.0%	6.5%	2.5%	1.5%	2.5%	4.4%	5.5%	5.8%
New Jersey Resources	5.5%	8.0%	7.5%	4.0%	6.0%	8.0%	2.6%	8.2%	6.5%
Northwest Natural Gas	4.5%	4.0%	4.0%	3.0%	2.5%	4.5%	7.1%	5.5%	1.1%
Piedmont Natural Gas	2.0%	5.0%	3.0%	3.5%	4.5%	4.0%	2.5%	6.2%	4.7%
South Jersey Industries	5.0%	10.5%	8.0%	9.0%	5.5%	8.5%	5.2%	12.6%	8.6%
Southwest Gas Corp	4.5%	4.0%	5.5%	8.0%	1.5%	3.0%	7.7%	6.1%	3.2%
WGL Holdings	4.0%	4.0%	5.0%	2.5%	2.0%	2.5%	1.1%	4.2%	5.7%
LDC GROUP AVERAGE	**4.7%**	**6.0%**	**5.5%**	**4.0%**	**3.3%**	**4.7%**	**5.1%**	**6.3%**	**3.9%**
ONEOK, Inc.	**8.0%**	**7.5%**	**6.5%**	**10.5%**	**10.5%**	**13.5%**	**-0.1%**	**15.4%**	**15.2%**

(a) The Value Line Investment Survey (March 9, 2012).
(b) The Value Line Investment Survey (March 22, 2002 and March 16, 2007).

CAPITAL ASSET PRICING MODEL

	LDC Group		ONEOK, Inc.	
	Historical Rates of Return (a)	Forward-Looking Rates of Return (b)	Historical Rates of Return (a)	Forward-Looking Rates of Return (b)
Market Required Rate of Return	11.80%	13.50%	11.80%	13.50%
Long-term Government Bond Return	5.20%	3.28%	5.20%	3.28%
Market Risk Premium (d)	6.60%	10.22%	6.60%	10.22%
LDC Group Beta (e)	0.67	0.67	0.95	0.95
LDC Group Risk Premium (f)	4.44%	6.87%	6.27%	9.71%
Risk-free Rate of Interest (c)	3.28%	3.28%	3.28%	3.28%
Theoretical CAPM Cost of Equity Estimate (g)	7.72%	10.15%	9.55%	12.99%
Size Premium (a)	1.74%	1.74%	0.78%	0.78%
CAPM Cost of Equity Estimates (h)	**9.46%**	**11.89%**	**10.33%**	**13.77%**

(a) Ibbotson SBBI 2012 Valuation Yearbook: Market Results for Stocks, Bonds, Bills and Inflation 1926-2011.
(b) Calculated by applying DCF model applied to S&P 500 firms paying dividends:

Expected Dividend Yield		2.50%
Projected Earnings Growth Rate:		
Value Line	11.90%	
I/B/E/S	10.80%	
Zacks	10.30%	
Average		11.00%
Market Required Rate of Return		13.50%

(c) February 2012 yield on 30-yr U.S. Treasury bonds (FederalReserve.gov). 3.28%
(d) Market Required Rate of Return minus Long-term Government Bond Return.
(e) Schedule BHF-8.
(f) Market risk premium times beta.
(g) Sum of Risk Premium and Risk-free Rate of Interest.
(h) Sum of Unadjusted CAPM Cost of Equity Estimate and Size Premium.

BOND RATINGS, BETA, AND MARKET CAPITALIZATION

Company	Bond Rating		Beta (c)	Market Capitalization (millions) (c)
	Moody's (a)	S&P (b)		
AGL Resources	Baa1	BBB+	0.75	4,600
Atmos Energy	Baa1	BBB+	0.70	2,800
Laclede Group	Baa2	A	0.60	925
New Jersey Resources	Aa3	A	0.65	1,900
Northwest Natural Gas	A3	A+	0.60	1,200
Piedmont Natural Gas	A3	A	0.70	2,400
South Jersey Industries	Baa1	BBB+	0.65	1,600
Southwest Gas Corp	Baa1	BBB+	0.75	2,000
WGL Holdings	A2	A+	0.65	2,100
LDC GROUP AVERAGE	**A3**	**A-**	**0.67**	**2,169**
ONEOK, Inc.	**Baa2**	**BBB**	**0.95**	**8,500**

(a) Moody's.com (Retreived March 20, 2012).
(b) StandardandPoors.com (Retreived March 20, 2012)
(c) The Value Line Investment Survey (March 9, 2012).

RISK PREMIUM METHOD -- LDC AUTHORIZED RATES OF RETURN ON EQUITY

Year	Qtr.		Allowed ROE (a)	Single-A Utility Bond Yield (b)	Risk Premium	Year	Qtr.		Allowed ROE (a)	Single-A Utility Bond Yield (b)	Risk Premium
1980	1		13.45%	13.49%	-0.04%	1996	1		11.45%	7.44%	4.01%
	2		14.38%	12.87%	1.51%		2		10.88%	7.98%	2.90%
	3		13.87%	12.88%	0.99%		3		11.25%	7.96%	3.29%
	4		14.35%	14.11%	0.24%		4		11.32%	7.62%	3.70%
1981	1		14.69%	14.77%	-0.08%	1997	1		11.31%	7.76%	3.55%
	2		14.61%	15.82%	-1.21%		2		11.70%	7.88%	3.82%
	3		14.86%	16.65%	-1.79%		3		12.00%	7.49%	4.51%
	4		15.70%	16.57%	-0.87%		4	(c)	11.01%	7.25%	3.76%
1982	1		15.55%	16.72%	-1.17%	1998	2		11.37%	7.12%	4.25%
	2		15.62%	16.26%	-0.64%		3		11.41%	6.99%	4.42%
	3		15.72%	15.88%	-0.16%		4		11.69%	6.97%	4.72%
	4		15.62%	14.56%	1.06%	1999	1		10.82%	7.11%	3.71%
1983	1		15.41%	14.15%	1.26%		2	(c)	10.82%	7.48%	3.34%
	2		14.84%	13.58%	1.26%		4		10.33%	8.05%	2.28%
	3		15.24%	13.52%	1.72%	2000	1		10.71%	8.29%	2.42%
	4		15.41%	13.38%	2.03%		2		11.08%	8.45%	2.63%
1984	1		15.39%	13.56%	1.83%		3		11.33%	8.25%	3.08%
	2		15.07%	14.72%	0.35%		4		12.50%	8.03%	4.47%
	3		15.37%	14.47%	0.90%	2001	1		11.16%	7.74%	3.42%
	4		15.33%	13.38%	1.95%		2	(c)	10.75%	7.93%	2.82%
1985	1		15.03%	13.31%	1.72%		4		10.65%	7.68%	2.97%
	2		15.44%	12.95%	2.49%	2002	1		10.67%	7.65%	3.02%
	3		14.64%	12.11%	2.53%		2		11.64%	7.50%	4.14%
	4		14.44%	11.49%	2.95%		3		11.50%	7.19%	4.31%
1986	1		14.05%	10.18%	3.87%		4		10.78%	7.15%	3.63%
	2		13.28%	9.41%	3.87%	2003	1		11.38%	6.93%	4.45%
	3		13.09%	9.39%	3.70%		2		11.36%	6.40%	4.96%
	4		13.62%	9.31%	4.31%		3		10.61%	6.64%	3.97%
1987	1		12.61%	8.96%	3.65%		4		10.84%	6.35%	4.49%
	2		13.13%	9.77%	3.36%	2004	1		11.10%	6.09%	5.01%
	3		12.56%	10.61%	1.95%		2		10.25%	6.48%	3.77%
	4		12.73%	11.05%	1.68%		3		10.37%	6.13%	4.24%
1988	1		12.94%	10.32%	2.62%		4		10.66%	5.94%	4.72%
	2		12.48%	10.71%	1.77%	2005	1		10.65%	5.74%	4.91%
	3		12.79%	10.94%	1.85%		2		10.52%	5.52%	5.00%
	4		12.98%	9.98%	3.00%		3		10.47%	5.51%	4.96%
1989	1		12.99%	10.13%	2.86%		4		10.40%	5.82%	4.58%
	2		13.25%	9.94%	3.31%	2006	1		10.63%	5.85%	4.78%
	3		12.56%	9.53%	3.03%		2		10.50%	6.37%	4.13%
	4		12.94%	9.50%	3.44%		3		10.45%	6.19%	4.26%
1990	1		12.60%	9.72%	2.88%		4		10.14%	5.86%	4.28%
	2		12.81%	9.91%	2.90%	2007	1		10.44%	5.90%	4.54%
	3		12.34%	9.93%	2.41%		2		10.12%	6.09%	4.03%
	4		12.77%	9.89%	2.88%		3		10.03%	6.22%	3.81%
1991	1		12.69%	9.58%	3.11%		4		10.27%	6.08%	4.19%
	2		12.53%	9.50%	3.03%	2008	1		10.38%	6.15%	4.23%
	3		12.43%	9.33%	3.10%		2		10.17%	6.32%	3.85%
	4		12.38%	9.02%	3.36%		3		10.49%	6.42%	4.07%
1992	1		12.42%	8.91%	3.51%		4		10.34%	7.23%	3.11%
	2		11.98%	8.86%	3.12%	2009	1		10.24%	6.37%	3.87%
	3		11.87%	8.47%	3.40%		2		10.11%	6.39%	3.72%
	4		11.94%	8.53%	3.41%		3		9.88%	5.74%	4.14%
1993	1		11.75%	8.07%	3.68%		4		10.27%	5.66%	4.61%
	2		11.71%	7.81%	3.90%	2010	1		10.24%	5.83%	4.41%
	3		11.39%	7.28%	4.11%		2		9.99%	5.61%	4.38%
	4		11.15%	7.22%	3.93%		3		9.93%	5.09%	4.84%
1994	1		11.12%	7.55%	3.57%		4		10.09%	5.34%	4.75%
	2		10.81%	8.29%	2.52%	2011	1		10.10%	5.60%	4.50%
	3		10.95%	8.51%	2.44%		2		9.85%	5.38%	4.47%
	4	(c)	11.64%	8.87%	2.77%		3		9.65%	4.81%	4.84%
1995	2		11.00%	7.93%	3.07%		4		9.88%	4.37%	5.51%
	3		11.07%	7.72%	3.35%	2012	1		9.63%	4.39%	5.24%
	4		11.56%	7.37%	4.19%						
						Average			**12.03%**	**8.87%**	**3.16%**

Risk Premium = Intercept + (Slope X Interest Rate)

Risk Premium = 7.18% + (-.4534 X Single-A Interest Rate(d))

Risk Premium = 7.18% + (-.4534 X 4.48%)

Risk Premium = 7.18% + 2.03%

Risk Premium = 5.15%

(a) Regulatory Research Associates, Inc., Major Rate Case Decisions, (April 5, 2012, January 24, 2002, January 18, 1995, and January 16, 1990).
(b) Mergent Public Utility Manual (2003); Mergent Bond Record (September 2005); Moody's Credit Perspectives (Various Editions).
(c) No decisions reported for following quarter.
(d) Moody's.com for March 2012.

COMPARABLE EARNINGS METHOD

Company	Projected Earned Return on Book Equity (a) 2012	2013	2015-17
AGL Resources	11.2%	11.4%	12.0%
Atmos Energy	8.8%	8.3%	7.8%
Laclede Group	10.2%	10.2%	9.8%
New Jersey Resources	15.4%	16.8%	14.0%
Northwest Natural Gas	9.6%	10.2%	10.6%
Piedmont Natural Gas	11.9%	12.1%	12.9%
South Jersey Industries	15.3%	16.1%	17.5%
Southwest Gas Corp	9.8%	10.2%	11.4%
WGL Holdings	10.4%	10.2%	9.8%
LDC GROUP AVERAGE	**11.4%**	**11.7%**	**11.8%**
ONEOK, Inc.	**16.2%**	**16.3%**	**14.9%**

(a) The Value Line Investment Survey (March 9, 2012).