Exhibit No.:
Issues: Cost of Capital
Witness: Donald A. Murry, Ph.D
Sponsoring Party: Aquila Networks-MPS
[redacted]
Case No.: ER-

Before the Public Service Commission
of the State of Missouri

Direct Testimony

of

Donald A. Murry

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI
DIRECT TESTIMONY OF DONALD A. MURRY, PH.D
ON BEHALF OF AQUILA, INC.
D/B/A AQUILA NETWORKS-MPS
CASE NO. ER-_____

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Donald A. Murry. My address is 5555 North Grand Blvd., Oklahoma City, Oklahoma 73112.

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

A. I am a Vice President and economist with C. H. Guernsey & Company in Oklahoma City. I am also a Professor Emeritus of Economics on the faculty of the University of Oklahoma.

Q. WHAT IS YOUR EDUCATIONAL BACKGROUND?

A. I have a B. S. in Business Administration, and an M.A. and a Ph.D. in Economics from the University of Missouri - Columbia.

Q. PLEASE DESCRIBE YOUR PROFESSIONAL BACKGROUND.

A. From 1964 to 1974, I was an Assistant and Associate Professor and Director of Research on the faculty of the University of Missouri - St. Louis. For the period 1974-98, I was a Professor of Economics at the University of Oklahoma and since 1998 I have been a Professor Emeritus at the University of Oklahoma. Until 1978, I also served as Director of the Center for Economic and Management Research. In each of these positions, I directed and performed academic and applied research projects related to energy and regulatory policy. During this time, I also served on several state and national committees associated with energy policy and

regulatory matters. I published and presented a number of papers in the field of regulatory economics in the energy industries.

Q. PLEASE DESCRIBE YOUR REGULATORY EXPERIENCE.

A. Since 1964, I have consulted for a number of private and public utilities, state and federal agencies, and other industrial clients regarding energy and regulatory matters in the United States, Canada and other countries. In 1971-72, I served as Chief of the Economic Studies Division, Office of Economics of the Federal Power Commission. From 1978 to early 1981, I was Vice President and Corporate Economist for Stone & Webster Management Consultants, Inc. I am now a Vice President with C. H. Guernsey & Company. In all of these positions I have directed and performed a wide variety of applied research projects and conducted other projects related to regulatory matters. Recently, I have assisted both private and public companies and government officials in areas related to the regulatory, financial and competitive issues associated with the restructuring of the utility industry in the United States and other countries.

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE OR BEEN AN EXPERT WITNESS IN PROCEEDINGS BEFORE REGULATORY BODIES?

A. Yes, I have appeared before the U.S. District Court-Western District of Louisiana, U.S. District Court-Western District of Oklahoma, District Court-Fourth Judicial District of Texas, U.S. Senate Select Committee on Small Business, Federal Power Commission, Federal Energy Regulatory Commission, Interstate Commerce Commission, Alabama Public Service Commission, Colorado Public Utilities Commission, Florida Public Service Commission, Georgia Public

Service Commission, Illinois Commerce Commission, Iowa Commerce Commission, Kansas Corporation Commission, Kentucky Public Service Commission, Louisiana Public Service Commission, Maryland Public Service Commission, Missouri Public Service Commission, New Mexico Public Service Commission, New York Public Service Commission, Power Authority of the State of New York, Nevada Public Service Commission, North Carolina Utilities Commission, Oklahoma Corporation Commission, South Carolina Public Service Commission, Tennessee Public Service Commission, Tennessee Regulatory Authority, Texas Public Utilities Commission, the Railroad Commission of Texas, the State Corporation Commission of Virginia and the Public Service Commission of Wyoming.

Q. WHAT IS THE NATURE OF YOUR TESTIMONY IN THIS CASE?

A. I have been retained by Aquila, Inc. ("Aquila" or the "Company") to analyze the current cost of capital and to recommend a rate of return that is appropriate for its Missouri Public Service ("MPS") operating divisions in this proceeding.

For example, Aquila will raise capital for both of the operating divisions. When Aquila raises capital jointly for the facilities of the two divisions, the incremental cost of capital is identical. If Aquila raises capital for one of these divisions at one time and for the other at another time, the cost of the incremental components of capital will differ. This is precisely the circumstance in this case,

and my analysis recognizes and accounts for this distinction in the cost of capital of the two operating divisions.

Ratemaking looks to the future.

. Consequently, when referring to the operations of MPS , I sometimes refer to them simply as "the Company."

Q. HOW DID YOU PROCEED IN DEVELOPING YOUR ANALYSIS AND RECOMMENDATION?

A. To put my analysis in context, I reviewed the current economic environment, including the level of interest rates. I examined Aquila's financial circumstances, and I estimated the cost of capital of the MPS operating divisions using market analyses of the cost of capital of a group of comparable companies.

Q. ARE YOU SPONSORING ANY SCHEDULES WITH YOUR TESTIMONY?

A. Yes. I am sponsoring Schedules DAM-1 through DAM-22.

Q. WERE THESE SCHEDULES PREPARED EITHER BY YOU OR UNDER YOUR DIRECT SUPERVISION?

A. Yes.

Q. HOW DOES UTILITY REGULATION AFFECT YOUR COST OF CAPITAL TESTIMONY?

A. Historically, the presumed presence of market power in a franchised utility market is a principal economic rationale for utility regulation. I used this as a guide for

my approach to measuring the cost of capital of Aquila's MPS operating divisions. This is analytically appropriate because of the potential for economies of scale when providing utility service at the retail level. In general, analysts have said that the purpose of regulation is to provide a surrogate for the lack of competitive pressures in retail electric utility service.

The presence of a single firm providing key utility services in some markets is the basis for regulation. Duplication of production and distribution facilities by more than one firm may be economically inefficient. Therefore, market pressure cannot achieve the same pricing and service results as in competitive markets.

Q. WHAT IS THE PRINCIPAL OBJECTIVE IN SETTING THE ALLOWED RETURN IN A REGULATORY PROCEEDING?

A. Setting an allowed return that is sufficient, but not larger than necessary, to allow a utility to recover the costs of providing service is the principal objective. One also could say that this is the same thing as setting a "fair" rate of return on invested capital. Since the rate of return must be sufficient to attract and maintain capital, setting the allowed return can be a critical step in the regulatory process. This is the principle and precedent of regulation.

Q. WHAT DO YOU MEAN BY A FAIR RATE OF RETURN?

A. In this context I am using the term fair rate of return to refer to a return that meets the standards set by the United States Supreme Court decision in *Bluefield Water Works and Improvement Company vs. Public Service Commission, 262 U.S. 679 (1923) ("Bluefield")*, as further modified in *Federal Power Commission vs. Hope*

Natural Gas Company, 320 U.S. 591 (1944) ("Hope"). In these decisions the rate of return is a fair return if it provides earnings to investors similar to returns on alternative investments in companies of equivalent risk.

Q. **HOW DO YOU INTERPRET THESE LEGAL DECISIONS IN AN ECONOMIC OR MARKET CONTEXT?**

A. Based upon these decisions, a fair rate of return will provide the opportunity for a utility to earn a return equal to that of comparable investments of corresponding risk and uncertainty. In this way, the return will be sufficient to enable the company to operate successfully, maintain its financial integrity, attract capital, and compensate its investors for the risks assumed.

Q. HOW DID YOU APPLY THESE PRINCIPLES OF REGULATION IN YOUR ANALYSIS IN THIS PROCEEDING?

A. The cost of capital and my rate of return recommendations for MPS are, of course, for these regulated utility operating divisions specifically. This is especially important because of the financial stress of Aquila, even though these financial problems resulted from non-utility operations. The costs of capital to the non-utility Aquila operations, or stated differently, the cost of capital for the entire corporate entity, will be higher than the cost for capital of the utility operations. Consequently, it is appropriate for ratemaking purposes to distinguish between the cost of capital requirements of Aquila's utility operations and the cost of capital of the overall corporate entity. I therefore set out to determine the cost of capital of MPS as though they are two separate electric utility companies and not operating divisions of Aquila.

Because the common mechanisms for measuring the cost of capital of a regulated utility, such as using its independent financial information and market-based measures, are not possible in the case of MPS , I used the measurable cost of capital of similar, comparable electric utility companies.

Q. WHAT DID YOU DETERMINE IS THE APPROPRIATE CAPITAL STRUCTURE FOR MPS IN THIS PROCEEDING?

A. As shown in Schedule DAM-1, the capital structure that is appropriate for MPS in this proceeding is long-term debt of 52.5 percent and a common stock equity component of 47.5 percent of total capital. This capital structure is the target capital structure for the two operating divisions. As Aquila integrates the operations of these two operating divisions, recognizing the similarity in the capital structures is only practical.

This capital structure is the book divisional capital structure, which is the capital structure used by MPS for financing and capital budgeting purposes. The book divisional capital process has been in place for many years and was allocated to MPS by Aquila, taking into account the relevant risks and industry standards.

Q. WHY IS THE BOOK DIVISIONAL CAPITAL STRUCTURE APPROPRIATE TO USE FOR REGULATORY PURPOSES FOR THESE TWO OPERATING DIVISIONS?

A. Aquila can be thought of as a portfolio of assets, each of which has different degrees of risk. The cost of capital for a division or specific asset depends on the level of risk of the investment and not on the source of the funds. This is due to

the fact that cost of capital is the opportunity cost foregone by the investor on investments of comparable risk. Separating the capital costs of the individual business units, such as MPS , and allocating the appropriate capital costs to these entities, links the resulting book divisional capital structure more closely to the unit's cost of capital.

Q. DOES AQUILA'S PRACTICE OF ASSIGNING CAPITAL TO THE INDIVIDUAL OPERATING DIVISIONS HELP PROTECT THE RATE PAYERS FROM INCURRING THE COSTS OF CAPITAL ASSOCIATED WITH THE NON-UTILITY OPERATING DIVISIONS?

A. Yes, it does. Assigning the capital used to provide utility service, and the costs of these components of capital, to the specific operating divisions protects ratepayers from incurring the costs of capital of the other operating divisions of Aquila. Moreover, Aquila has indicated that to further protect and isolate ratepayers from the cost of capital of non-utility operations of Aquila, it will not assign any cost of new debt that exceeds the cost of debt of a BBB utility to its utility divisions. This protects the ratepayers from increased cost of debt that can result from lowered bond ratings based on the performance of Aquila's non-utility operations.

Q. WHAT IS YOUR UNDERSTANDING OF THE FACTORS THAT WERE CONSIDERED IN DETERMINING THE BOOK DIVISIONAL CAPITAL STRUCTURE FOR MPS ?

A. As I understand the process, the factors used to determine an appropriate capital structure for MPS included the line of business, comparative industry

standards, contemporary business and regulatory practices, and accepted financial theory. It is my understanding that originally Aquila used a proxy group of electric utility companies to develop the target capital structures of its electric utility divisions. Factors taken into account were the appropriateness of the ratios analyzed, including risk, industry standards, and rating agency guidelines. Over time, Aquila has evaluated these ratios to assure their continued relevance. Through capital budgeting and cash management processes, Aquila updates the level of the capital ratios.

Q. DID YOU INDEPENDENTLY VERIFY THAT THIS "DIVISIONAL" CAPITAL STRUCTURE WAS APPROPRIATE FOR SETTING AN ALLOWED RETURN FOR MPS IN THIS PROCEEDING?

A. Yes, I did. I compared the 47.5 percent common stock equity, the highest cost component of the capital structure, to the recent equity ratios of a group of comparable electric utilities.

Q. HOW DID YOU SELECT THE COMPANIES THAT YOU USED AS COMPARABLE TO MPS ?

A. I selected the comparable companies from a group of electric utilities reported by *Value Line,* using criteria appropriate for setting rates that were similar to the characteristics of MPS operating divisions of Aquila. First, I selected only companies that have not cut their dividend since 1998. I selected companies that have a market capitalization at this time of $1.6 billion or less and that derived at least 55 percent of their revenues from the electric utility business. To use comparable companies that have similar financial risk, I selected companies

that did not have a long-term debt ratio in excess of 60 percent. Finally, because I was trying to determine the cost of capital of a healthy electric utility for rates in a future time period, I excluded any companies for which *Value Line* currently is not projecting a positive growth in earnings per share.

Q. FROM THIS PROCESS, WHAT COMPANIES DID YOU DETERMINE WERE APPROPRIATE FOR USE AS COMPARABLE ELECTRIC UTILITIES FOR YOUR ANALYSIS?

A. As stated, I selected a group of six electric utilities that are similar in several important respects to MPS and were useful in my analysis. This group of companies includes Central Vermont Public Service, CLECO Corporation, Empire District, Great Plains Energy, Hawaiian Electric and MGE Energy.

Q. YOU STATED THAT YOU EVALUATED THE FINANCIAL RISK OF MPS . WHAT DO YOU MEAN BY FINANCIAL RISK?

A. By financial risk, I mean the exposure to the investors in common stock because of the level of claims to returns that precede their claims as common stock holders. The primary indicator of the financial risk of common stock is the proportion of outstanding debt. This was, of course, one of the important criteria that I used in selecting the comparable companies. I selected electric utilities that had common equity ratios similar to the equity ratios of MPS .

Q. WHEN YOU COMPARED THE COMMON EQUITY RATIO THAT YOU USED FOR MPS TO THE EQUITY RATIOS OF THESE COMPARABLE COMPANIES, WHAT DID YOU DETERMINE?

A. As Schedule DAM-2 shows, the common stock equity ratio used in this proceeding for both MPS is 47.5. This is virtually equal to the 46.5 percent common stock equity ratio average over the past five years for this group of companies.

Q. DID YOU CONSIDER USING THE CAPITAL STRUCTURE OF AQUILA, INC. AS THE CAPITAL STRUCTURE FOR RATEMAKING FOR THE MPS OPERATING DIVISIONS?

A. Yes, I did consider if using Aquila's capital structure for MPS in this proceeding was representative and appropriate. However, based on my analysis of Aquila's current capital structure and the circumstances surrounding it, it is clearly inappropriate for setting the rates for the MPS operating divisions.

Q. PLEASE EXPLAIN WHY YOU DETERMINED THAT AQUILA'S CAPITAL STRUCTURE IS INAPPROPRIATE FOR SETTING THE RATES FOR MPS .

A. The common stock of Aquila has lost most of its value in the past two years because of non-utility operations. Therefore, the market value does not reflect the level of common stock that is the realistic requirement of investors in an electric utility. Additionally, the book value, which has declined less than the market value, would result in a more costly common stock equity than I believe is representative of the comparable electric utilities.

Q. DOES THE CAPITAL STRUCTURE YOU ARE RECOMMENDING FOR MPS INCLUDE SHORT-TERM DEBT?

A. No, it does not.

Q. PLEASE EXPLAIN.

A. Consistent with sound financial theory, utilities should fund long-term assets (the rate base) with long-term sources of permanent capital. Short-term debt is not permanent capital. Utilities normally use short-term debt to finance working capital and construction projects pending refinancing by permanent capital. For example, the Missouri Public Service Commission's practice of excluding short-term debt from capital structure when construction work in progress exceeds the amount of short-term debt explicitly recognizes the temporary nature of short-term debt.

Aquila's policy and practice are to fund cash requirements not met by permanent capital and associated with seasonal fluctuations and other business requirements through inter-company short-term advances. Similarly, excess cash balances are collected and redistributed. Accordingly, Aquila periodically eliminates and replaces short-term debt with permanent capital. Aquila's policy and practice follows the sound financial theory that long-term assets should be financed with long-term capital. Furthermore, short-term debt is not a significant proportion of total capital. Consequently, the capital structure I am recommending reflects the sources of permanent capital for MPS , namely, long-term debt and common equity.

Q. IS YOUR ANALYSIS IN THIS PROCEEDING AFFECTED BY AQUILA'S PRACTICE REGARDING LONG-TERM ASSETS?

A. Yes. In accordance with its policy historically, Aquila raises capital for its operating divisions and assigns the cost of this capital proportionally to the divisions with the capital needs. These capital assignments then link the cost of capital of each operating division specifically to the assets used by that division to serve its customers. Consequently, Aquila's policy of assigning the costs of long-term debt and common stock to MPS links these costs directly to the costs of serving the customers of each operating division.

Q. **WHAT IS THE COST OF LONG-TERM DEBT THAT IS APPROPRIATE FOR MPS IN THIS PROCEEDING?**

A. The cost of long-term debt for MPS is 7.23 percent. The calculation of this cost of long-term debt, with the relevant debt issues and their effective cost for MPS, is shown in Schedule DAM-3.

Q. HOW DID YOU ESTIMATE THE COST OF COMMON STOCK EQUITY IN REACHING YOUR RECOMMENDATION FOR AN ALLOWED RETURN FOR MPS ?

A. As I stated, I estimated the cost of common stock of the comparable companies, and I used these calculations to determine the cost of common stock components of the capital structures of MPS .

Q. WHAT METHODS DID YOU USE FOR MEASURING THE COST OF COMMON STOCK OF THE COMPARABLE COMPANIES?

A. I used two methods in my analysis for estimating the cost of common stock, which I believe are the most commonly used. I used the Discounted Cash Flow ("DCF") analysis as the primary method. The DCF is probably the most common method used by analysts to estimate the cost of common equity of a utility in a rate proceeding. As a second method, I used a Capital Asset Pricing Model ("CAPM"). I used both of these methods to estimate the cost of common stock of each of the comparable companies.

Q. YOU MENTIONED THE DCF METHOD FOR DETERMINING COST OF COMMON STOCK. PLEASE EXPLAIN THE DCF METHOD FOR MEASURING COST.

A. Yes. Typically, in the DCF calculation the investor's required rate of return is expressed as:

$$K = D/P + g$$

Where: K = cost of common equity
D = dividend per share
P = price per share, and
g = rate of growth of dividends, or alternatively, common stock earnings.

In this expression K is a capitalization rate required to convert the stream of future returns into a current value.

Q. WHY DID YOU USE THE DCF METHOD TO ESTIMATE THE COST OF COMMON EQUITY IN THIS PROCEEDING?

A. For setting rates of a regulated utility, there are some obvious advantages in using the DCF. For example, the principal advantages of the DCF technique, in my opinion, are that it is a market-based measure of the cost of capital and it is theoretically sound. Calculation is straight-forward, and it is easy to understand. It recognizes investors' expectations by using market price information and the company's dividend and earnings performance to determine the value that an investor places on anticipated returns. Since an investor expects returns on investment in the form of dividends and capital gains, he or she will expect a market price equal to the present value of that stream of returns. Using these market relationships, we can estimate the opportunity cost of an investor's funds. In a regulatory setting, it is also important that it is widely recognized and accepted by analysts.

Q. ARE THERE ANY ANALYTICAL DIFFICULTIES IN USING THE DCF METHOD TO MEASURE COST OF CAPITAL FOR A REGULATED UTILITY?

A. Yes. Problems may arise with the DCF technique to measure cost of capital in a regulatory proceeding. One of these is the limitation of data available to the analyst. A second is the potential for an analyst's misinterpretation of the meaning of the data. Some of these problems can be readily identified because they are often points of controversy. Others arise because analysts use the theory without

assessing its underlying assumptions or the credibility of calculations, and without comprehending their implications.

Q. HOW SHOULD AN ANALYST DEAL WITH THESE ANALYTICAL PROBLEMS?

A. To deal with the data problem, an analyst should carefully select data used in the DCF analysis and recognize the weaknesses of the data. To deal with the problem of misinterpretation of the results, the analyst should simply use sound analytical procedures with an appropriate theoretical basis.

Q. DO YOU BELIEVE THAT THESE ANALYTICAL PROBLEMS WITH THE DCF TECHNIQUE COULD AFFECT ANALYSES IN THIS PROCEEDING?

A. Yes. The recent equity markets have produced valuations that are difficult to analyze for ratemaking purposes because of structural changes in the equity markets. From an analytical standpoint, clear distinction exists between the historical data and the forecasted data. In fact, the historical data and the forecasted data come from two quite different market environments. A sharp distinction exists between the periods before and after the Enron collapse. In this way, comparisons and interpretations may be more difficult than from periods not affected by such market shifts. That is, the recent volatility and declines in the equity markets complicate interpreting the DCF method for ratemaking. Since rates are being set for the future, a sharp division between prospective and historical data in current markets diminishes the usefulness of historical data for

analytical purposes. This is an important structural change in the equity markets, and an analyst must recognize it.

Q. WITH THIS STRUCTURAL CHANGE IN THE EQUITY MARKETS, HOW DID YOU ESTIMATE INVESTOR EXPECTATIONS IN PERFORMING YOUR DCF ANALYSIS?

A. I focused my analysis principally on forecasted returns. Although I reviewed historical dividends and earnings, the recent structural shift in the market rendered the historical data less useful for estimating investor expectations. Therefore, I focused primarily upon the forecasted returns, that is, the forecasted common stock dividends and earnings per share.

Q. EXPLAIN YOUR FINDINGS CONCERNING THE HISTORICAL AND FORECASTED GROWTH RATES OF THE COMPARABLE COMPANIES.

A. As I illustrate in Schedule DAM-5, the forecasted earnings growth rates are higher than the forecasted dividend growth rates. In fact, *Value Line* predicts no dividend growth for Empire District, Great Plains and Hawaiian Electric. Not surprisingly, there is also a sharp distinction between the level of the earnings historical growth rates and the forecasted growth rates.

Q. ARE THESE OBSERVATIONS IMPORTANT?

A. Yes, these observations are extremely important because they guide the interpretation of the market-based measures of the cost of capital. For example, the DCF is an analysis that tries to capture the investor's expectations of returns from an investment. The expected returns are the key determinant of the price of

the security. Consequently, it is imperative that an analyst considers the data that are influencing investors. Because there is such a sharp distinction between the historical and forecasted earnings and between earnings and dividends, it is not logical that they all have equal weights to investors. Nevertheless, we can infer empirically what is more relevant to investors.

Q. CAN YOU EXPLAIN WHAT YOU MEAN BY THE STATEMENT THAT YOU CAN INFER WHAT IS MORE RELEVANT TO INVESTORS?

A. Yes, I can explain how one can look at related data and infer some important investor perceptions of interrelationships among them. For example, Schedule DAM-6 shows flat dividends in recent years for the comparable companies. Four of the six electric companies have had constant dividends for the last five-year period that I studied. Schedule DAM-7 shows the dividend payout ratios for the same group of companies. As this schedule shows, clearly there has been a steady decline in the dividend payout ratios for these comparable electric companies over this period of time. This means that despite growing earnings, the boards of directors of these comparable companies have not increased the dividends commensurately and are redeploying the cash from earnings for other purposes. Given the uncertainties of deregulation in recent years, the conserving of cash from operations is not a surprise. Perhaps more important for the purposes of this analysis is that *Value Line* forecasts further declines in the dividend payout ratios. In these circumstances, knowledgeable investors are not acquiring common stock in these companies in anticipation of dividend growth. If they are acquiring common stock in anticipation of growth in their investment, this can only come

from the growth in earnings per share and any resulting capital gains they receive from holding the security.

Q. SHOULD AN ANALYST ADJUST HIS OR HER ANALYSIS BECAUSE OF THE CHANGES IN THE RELATIVE SIGNIFICANCE OF DIVIDENDS AND EARNINGS GROWTH TO VARIOUS INVESTORS?

A. Yes. Since there is clear evidence that investors must look beyond these flat dividends to prospective future earnings, an analyst should do likewise. The analyst should pay particular attention to earnings growth. This is an example of analytical circumstances where the judgment of the analyst is more important than the mechanical results of plugging numbers into a DCF formula. Simply put, the DCF analysis based on earnings growth estimates becomes a more reliable measure of the potential gain from common stock ownership.

Q. DID YOU DRAW ANY OTHER INFERENCES FROM THIS ANALYSIS?

A. Yes. I concluded that one could not effectively use Aquila's financial information in a DCF analysis to determine the cost of common equity to apply in this proceeding. For example, *Value Line* reports estimated negative earnings for Aquila for 2002 and 2003 and a collapse of dividends. One cannot use the cost of capital for the corporate entity in any meaningful analysis of the cost of capital for the utility operating divisions. Investors will be looking at the financial condition of Aquila rather than the variables used in a DCF analysis, and a DCF analysis will not be analytically useful. As an example, *Value Line* stated in its April 4, 2003 issue, "The gravity of the company's [Aquila's] financial situation far outweighs the importance of reported earnings."

Q. HOW DID YOU DETERMINE COMMON STOCK PRICES FOR YOUR DCF ANALYSIS OF THE COMPARABLE COMPANIES?

A. I used the high and low common stock prices for the past year as reported by the *Wall Street Journal*; I also used current prices from a recent two-week period as reported by *YAHOO! Finance*. In this way, I tried to capture both current market conditions and market conditions over the past year.

Q. WHAT WERE THE RESULTS OF YOUR DCF ANALYSIS?

A. The mechanical calculation of the DCF cost of capital, using the dividends for the comparable companies combined with the common stock prices for the past 52 weeks, resulted in a range of the average estimated cost of common stock of 5.66 percent to 8.43 percent for the comparable companies. These results are shown in Schedule DAM-8. Because of low dividend growth rate these estimates are not surprising, but they surely are not as representative of investor expectations as estimates in earnings per share growth. The earnings per share growth rates combined with prices over the past 52 weeks resulted in cost of capital estimates ranging from 9.84 percent to 12.61 percent as an average for the comparable companies. These results are shown in Schedule DAM-9. Schedule DAM-10 shows the DCF using projected growth rates. It yields a range of 10.00 percent to 13.85 percent.

Q. WHAT DID YOUR DCF ANALYSIS USING CURRENT MARKET PRICES SHOW?

A. Using current market prices to measure a current cost of capital of the comparable companies was similar, but produced a somewhat narrower set of estimates. I

illustrate the result using the dividend growth rate, which is flat, of course, in Schedule DAM-11. This result was a low 6.21 percent to 6.34 percent. The DCF calculations using earnings per share growth rates, which are more relevant for setting an allowed return for the future, are higher. The combined historical and forecasted growth rates in earnings per share for the comparable companies are shown in Schedule DAM-12. The average for the comparable companies ranges from 10.39 percent to 10.51 percent. Of course, investors are looking to future returns. Current-cost-of-capital DCF results using only projected earnings per share growth rates are shown in Schedule DAM-13. These results, which probably most closely reflect expectations of investors in the comparable companies during the current period, average between 10.55 percent and 12.17 percent.

Q. HOW WOULD YOU SUMMARIZE THE RESULTS OF YOUR DCF CALCULATIONS?

A. The most significant results for the purpose of ratemaking are the DCF calculations relying on forecasted growth in earnings per share, which are in the range from 10.00 percent to 13.85 percent. Schedule DAM-14 shows these results.

Q. YOU INDICATED THAT YOU DEVELOPED AN ANALYSIS BASED ON THE CAPM MODEL. WHAT IS THE CAPM MODEL?

A. The Capital Asset Pricing Model, or CAPM model, is based on an investor's ability to diversify by combining risky securities into an investment portfolio. It measures the risk differential between a given security and the market as a whole.

The diversification of investments reduces risk to the investor. However, some risk is non-diversifiable, e.g., the market risk, and investors remain exposed to that market risk. The theoretical CAPM model is expressed as:

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

Where: K = the required return.
R_F = the risk-free rate.
R_M = the required overall market return; and
β = beta, a measure of security risk relative to the overall market.

Note that the value of market risk is the differential between the market rate and the risk-free rate. Beta is the relative measure of the risk of a security and the market as a whole. By estimating the risk differential between an individual security and the market as a whole, one can measure the relative cost of that security compared to the market as a whole.

Q. HOW DID YOU USE THE CAPM COST OF CAPITAL RESULT IN YOUR ANALYSIS?

A. The CAPM links the incremental cost of capital of an individual company with the risk differential between that company and the market as a whole. The CAPM, which is a risk premium method, provides a very useful comparison to the DCF measured cost of common stock because it uses current debt costs as a basis for measuring the cost of common stock. That is, the CAPM, which is less sensitive to prices and current conditions than the DCF method, is useful as a verification of the general level of the cost of capital and is useful as a check on the DCF analysis.

Q. WHAT IS THE COST OF COMMON STOCK FOR THE MPS OPERATING DIVISIONS OF AQUILA THAT YOU DETERMINED USING THE CAPITAL ASSET PRICING MODEL?

A. I used two CAPM approaches for calculating the cost of capital. The results of these CAPM analyses are shown in Schedules DAM-15 and DAM-16. The historical CAPM results range from a low of 10.07 percent to a high of 12.99 percent. The size adjusted CAPM ranges from a low of 9.57 percent to a high of 12.37 percent. The estimated average costs of common stock for the comparable companies are 11.04 percent and 10.84 percent, from these two methods.

Q. HOW DID YOU INTERPRET THESE TWO RESULTS FROM THE CAPM ANALYSIS?

A. The CAPM analysis relates fluctuations of individual securities to the fluctuations in the market as a whole, as measured by the calculated beta. Because it is calculated to represent general market movements, these results represent a relatively long view of market valuations. I used these results as benchmarks for evaluating the DCF results because they are less sensitive to current market conditions.

Q. YOU STATED THAT YOU REVIEWED MARKET CONDITIONS IN YOUR ANALYSIS. WHAT DID YOU REVIEW CONCERNING MARKET CONDITIONS?

A. I reviewed general market conditions, including for example, the influence of the Federal Reserve policy of steadily lowering short-term interest rates over recent months. I have illustrated in Schedule DAM-17 that short-term rates have dropped

more sharply than long-term rates in response to this policy. This schedule shows a comparison among the 90-Day Treasury bill rate, the 30-Year Treasury bond rate and the Aaa Moody's Corporate Bond rate over the last 16 months. The latter are likely to be the closest substitutes for common equity investors in utilities, and, therefore, the most relevant for determining an allowed return in this proceeding.

Q. DID YOU CONSIDER OTHER MARKET FACTORS IN YOUR ANALYSIS OF THE COST OF CAPITAL OF MPS ?

A. Yes. Since I was studying the returns to a group of electric utilities, I was also concerned about the level of the financial market's current acceptance of electric utility common stocks. Although it is common knowledge that the market for common stock equities is depressed currently, it is also apparent that utility stocks are even in less favor with investors than the industrial common stocks. Schedule DAM-18 shows the decline in the Dow Jones Industrial Index and the Dow Jones Utility Index over the last 12 months. The Industrial Index declined during this period, which is common knowledge, but the Utility Index declined even further.

Q. DID YOU STUDY WHETHER THIS MARKET ACCEPTANCE IS TRUE FOR ELECTRIC UTILITIES AS WELL AS FOR THE GENERAL UTILITY INDEX?

A. Yes, I did. I was especially concerned whether this was true for electric utilities in general, as well as for the particular electric utilities that I selected as comparable companies. Obviously, this is the case. Schedule DAM-19 shows the recent trend in price earnings ratios of these comparable companies over the past five years.

The decline in price earnings ratios for these companies, from an average of 18.1 times to 12.1 times in just the last two years is dramatic. Moreover, there is no apparent improvement in sight according to *Value Line*. Note that the forecast in average price earnings ratios for these companies in the 2006-08 period is 11.6 times.

Q. YOU NOTED PREVIOUSLY THE IMPORTANCE OF EARNINGS GROWTH TO UTILITY INVESTORS, ESPECIALLY IN LIGHT OF FLAT DIVIDENDS. HOW DOES THIS RELATE TO THE DECLINE IN THE PRICE EARNINGS RATIOS OF THE SAME UTILITIES?

A. The decline in the price earnings ratios of the utilities would be the natural consequence of the rapid decline in the common equities markets and in the prices of utility common stocks. Of course, the decline in the values of common stocks is well known. However, as I noted previously, the Dow Jones Utility Index has fallen even more rapidly than has the Dow Jones Industrial Index. When stock values fall so much because the securities are out of favor with investors, it is not surprising the price earnings ratios are declining even as investors expect earnings to grow.

Q. WERE THERE OTHER FACTORS THAT INFLUENCED YOUR INTERPRETATION OF YOUR DCF RESULTS?

A. Yes. One of these influencing factors was the nature of the DCF method itself. The DCF method, because of its theoretical basis, estimates the marginal cost of common stock equity to the comparable companies. In that way, it is an estimate of the minimal return necessary to attract marginal, or incremental, investment in

common stock equities. However, the method does not account for any other factors that may affect the ability of the company to earn that return. There is no cushion in this return to assure that a regulated company will earn its allowed return.

Regulators and analysts often use adjustments to compensate for the marginal cost nature of the DCF methodology, such as a flotation adjustment. I did not apply a specific flotation adjustment, but I recognized the significance of the need to issue common stock on the part of the comparable companies when I evaluated the common stock results. For example, I do not consider the low end of the DCF common equity ranges appropriate measures for setting an allowed return in this proceeding.

Q. WHAT ARE YOUR RECOMMENDED ALLOWED RETURNS FOR THE COMMON STOCK COMPONENTS OF MPS IN THIS PROCEEDING?

A. Relying primarily on the DCF current estimates based on earnings forecasts of the cost of common equity of the comparable companies, I believe that the cost of the common stock component for MPS is in the range of 12.0 percent to 12.5 percent. As a point estimate, the mid-point of this range is 12.25 percent. I believe this is the level of required return for each of these operating divisions. Note that the high end of these average estimates for the comparable companies is 13.85 percent. However, I do not think this level is necessary for ratemaking in current markets.

Q. EARLIER IN YOUR TESTIMONY YOU REFERRED TO THE FINANCIAL CIRCUMSTANCES OF AQUILA. DID THE FINANCIAL CIRCUMSTANCES OF AQUILA INFLUENCE YOUR RECOMMENDED ALLOWED RETURNS ON COMMON STOCK FOR THE MPS OPERATING DIVISIONS?

A. No. To the contrary, I developed a method for evaluating cost of common stock components of MPS that would not let the financial circumstances of Aquila influence my calculations. I evaluated the required cost of capital of electric utilities that I selected based on their similarity to the operations of MPS. I think it is important to note, however, that the financial circumstances of Aquila are affected significantly by returns allowed for MPS. For these reasons, there is less margin for regulatory error in this instance than there would be in most cost of capital analyses.

Q. DID YOU ESTIMATE THE REQUIRED RETURN ON TOTAL CAPITAL FOR MPS THAT IS RELEVANT TO THIS PROCEEDING?

A. Yes. I have illustrated the total cost of capital in the range of 9.49 percent to 9.73 percent for MPS, in Schedule DAM-20.

Q. DID YOU TEST THE ADEQUACY OF YOUR RECOMMENDATIONS IN ANY WAY?

A. Yes. I reviewed the after-tax interest coverage ratios of my recommendations for both MPS . I evaluated my recommended returns from the standpoint of their implied interest coverage for the assigned long-term debt. I have shown the

after-tax interest coverage at my recommended return in Schedule DAM-22. The after-tax coverage for MPS at the conservative, low end of my range is 2.50 times.

These coverages are adequate but minimal, as most analysts will consider coverage of 2.5 times as minimally acceptable under normal circumstances. The test simply verifies that my recommended return is adequate, but it also verifies that my recommended return is not excessive. As a corroboration of this test, both of these coverage levels are less than the average of the comparable companies. As Schedule DAM-22 demonstrates, the average for the comparable companies is 2.62 times.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY AT THIS TIME?

A. Yes, it does.

Missouri Public Service [redacted]

Summary of Schedules

Aquila Networks - MPS

[redacted]

Pro Forma Cost of Capital

December 2002

	Ratio
Long-Term Debt	52.50%
Common Equity	47.50%
Total	100.00%

Source: Aquila Networks - MPS [redacted] Work Papers

Missouri Public Service [redacted]

Comparable Companies

Comparison of Common Equity Ratios

Company	1999	2000	2001	2002	2003E	Five Year Average
Central Vermont P.S.	48.5%	50.0%	48.4%	54.1%	55.5%	51.3%
CLECO Corporation	41.0%	39.7%	42.4%	38.0%	40.5%	40.3%
Empire District	40.4%	42.4%	42.8%	44.5%	52.0%	44.4%
Great Plains Energy	49.7%	42.8%	44.6%	44.7%	43.0%	45.0%
Hawaiian Electric	41.4%	39.9%	41.6%	46.5%	47.0%	43.3%
MGE Energy Inc.	55.5%	52.2%	57.8%	54.2%	55.0%	54.9%
Comparable Companies' Averages	46.1%	44.5%	46.3%	47.0%	48.8%	46.5%

Source: Value Line Investment Survey

Schedule DAM-2

Missouri Public Service

Embedded Cost of Long-Term Debt

December 2002

Assigned Debt	Total Outstanding	Effective Rate	Effective Interest Expenses
15 Yr 9.03%, Due 12/1/05	$12,863,524.00	9.48%	$1,219,462.08
30 Yr 8.27%, Due 11/15/21	$26,300,000.00	8.39%	$2,206,570.00
15 Yr 8.2%, Due 1/15/07	$16,545,000.00	8.87%	$1,467,541.50
30 Yr 8.0%, Due 3/1/23	$16,800,000.00	8.05%	$1,352,400.00
RHINOS 5.7763%, Due 9/30/02	$0.00	3.50%	$0.00
Sr 6.70%, Due 10/15/06	$67,041,515.00	6.83%	$4,578,935.47
Sr 6.875%, Due 10/1/04	$109,326,961.00	6.97%	$7,620,089.18
Wamego 96, Due 3/1/26	$7,300,000.00	3.00%	$219,000.00
Environ Improve, Due 5/1/28	$5,000,000.00	3.00%	$150,000.00
Sanwa Bank Loan, Due 12/9/09	$5,069,161.87	6.99%	$354,334.41
Sr 7.0%, Due 7/15/04	$71,257,000.00	7.00%	$4,987,990.00
Sr 7.625%, Due 11/15/09	$45,759,000.00	7.74%	$3,542,661.78
UCT PEPS Loan 9.75%	$0.00	7.39%	$0.00
Total	$383,262,161.87		$27,698,984.43
Embedded Cost of Long-Term Debt			7.23%

Source: Missouri Public Service Work Papers

Missouri Public Service [redacted]

Comparable Electric Companies

Growth Rate Summary

	Value Line 1998 TO 2007 Estimate			Value Line Five Year Historical			Projections Value Line		S & P
	EPS	DPS	Book Value	EPS	DPS	Book Value	EPS	DPS	EPS
Central Vermont P.S.	8.9%	1.9%	1.6%	-3.0%	1.0%	0.5%	9.0%	3.0%	N/A
CLECO Corporation	6.5%	1.2%	6.9%	6.0%	2.5%	5.0%	5.5%	1.0%	8.0%
Empire District	3.2%	0.0%	2.4%	-3.5%	0.0%	1.5%	9.0%	0.0%	5.0%
Great Plains Energy	3.8%	0.1%	1.3%	1.5%	1.0%	-1.0%	3.0%	0.0%	4.0%
Hawaiian Electric	1.4%	0.1%	3.2%	2.5%	0.5%	1.5%	1.5%	0.0%	3.0%
MGE Energy Inc.	5.2%	0.7%	5.2%	4.5%	1.0%	0.5%	6.0%	0.5%	N/A
Comparable Companies' Averages	4.84%	0.67%	3.44%	1.33%	1.00%	1.33%	5.67%	0.75%	5.00%

Sources:
Value Line Investment Survey
Standard & Poor's Earnings Guide

Schedule DAM-5

Missouri Public Service [redacted]

Comparable Companies

Comparison of Dividends per Share

Company	1999	2000	2001	2002	2003E	Growth '99-'03
Central Vermont P.S.	0.88	0.88	0.88	0.88	0.88	0.00%
CLECO Corporation	0.83	0.85	0.87	0.90	0.90	2.33%
Empire District	1.28	1.28	1.28	1.28	1.28	0.00%
Great Plains Energy	1.66	1.66	1.66	1.66	1.66	0.00%
Hawaiian Electric	2.48	2.48	2.48	2.48	2.48	0.00%
MGE Energy Inc.	1.31	1.32	1.33	1.34	1.35	0.75%
Comparable Companies' Averages	1.41	1.41	1.42	1.42	1.43	0.51%

Source: Value Line Investment Survey

Schedule DAM-6

Missouri Public Service [redacted]

Comparable Companies

Comparison of Dividend Payout Ratios

Company	1999	2000	2001	2002	2003E	Five Year Average	Forecast '06-'08
Central Vermont P.S.	72.0%	80.0%	92.0%	61.0%	58.0%	72.6%	54.0%
CLECO Corporation	69.0%	57.0%	57.0%	61.0%	55.0%	59.8%	49.0%
Empire District	107.0%	95.0%	216.9%	109.0%	88.0%	123.2%	71.0%
Great Plains Energy	131.7%	81.0%	104.0%	83.0%	85.0%	96.9%	74.0%
Hawaiian Electric	88.0%	84.0%	63.0%	63.0%	70.0%	73.6%	63.0%
MGE Energy Inc.	89.0%	79.0%	82.0%	80.0%	69.0%	79.8%	63.0%
Comparable Companies' Averages	92.8%	79.3%	102.5%	76.2%	70.8%	84.3%	62.3%

Source: Value Line Investment Survey

Schedule DAM-7

Missouri Public Service [redacted]

Comparable Electric Companies

52 Week Cost of Capital

	Share Prices Low	Share Prices High	2003 Dividend	52 Week Yields Low	52 Week Yields High	1997-99 Dividend	2006-08E Dividend	Growth Rate	Cost of Capital Low	Cost of Capital High
Central Vermont P.S.	15.69	19.00	0.88	4.63%	5.61%	0.88	1.04	1.87%	6.51%	7.48%
CLECO Corporation	9.74	23.81	0.90	3.78%	9.24%	0.81	0.90	1.18%	4.96%	10.42%
Empire District	15.06	20.95	1.28	6.11%	8.50%	1.28	1.28	0.00%	6.11%	8.50%
Great Plains Energy	15.69	28.09	1.66	5.91%	10.58%	1.64	1.66	0.13%	6.04%	10.71%
Hawaiian Electric	34.55	49.00	2.48	5.06%	7.18%	2.47	2.50	0.15%	5.21%	7.33%
MGE Energy Inc.	24.58	30.14	1.35	4.48%	5.49%	1.30	1.38	0.67%	5.14%	6.16%
Comparable Companies' Averages	19.22	28.50	1.43	5.00%	7.77%	1.40	1.46	0.67%	5.66%	8.43%

Source : Value Line Investment Survey

Schedule DAM-8

Missouri Public Service [redacted]

Comparable Electric Companies

52 Week Cost of Capital

	Share Prices Low	Share Prices High	2003 Dividend	52 Week Yields Low	52 Week Yields High	1997-99 EPS	2006-08E EPS	Growth Rate	Cost of Capital Low	Cost of Capital High
Central Vermont P.S.	15.69	19.00	0.88	4.63%	5.61%	0.93	2.00	8.92%	13.56%	14.53%
CLECO Corporation	9.74	23.81	0.90	3.78%	9.24%	1.13	2.00	6.51%	10.29%	15.75%
Empire District	15.06	20.95	1.28	6.11%	8.50%	1.32	1.75	3.21%	9.32%	11.71%
Great Plains Energy	15.69	28.09	1.66	5.91%	10.58%	1.61	2.25	3.77%	9.67%	14.34%
Hawaiian Electric	34.55	49.00	2.48	5.06%	7.18%	2.87	3.25	1.39%	6.45%	8.57%
MGE Energy Inc.	24.58	30.14	1.35	4.48%	5.49%	1.42	2.25	5.25%	9.73%	10.74%
Comparable Companies' Averages	19.22	28.50	1.43	5.00%	7.77%	1.55	2.25	4.84%	9.84%	12.61%

Source : Value Line Investment Survey

Schedule DAM-9

Missouri Public Service [redacted]

Comparable Electric Companies

52 Week Cost of Capital

	Share Prices		2003	52 Week Yields		EPS Estimates		Cost of Capital	
	Low	High	Dividend	Low	High	Value Line	S&P	Low	High
Central Vermont P.S.	15.69	19.00	0.88	4.63%	5.61%	9.00%	N/A	13.63%	14.61%
CLECO Corporation	9.74	23.81	0.90	3.78%	9.24%	5.50%	8.00%	9.28%	14.74%
Empire District	15.06	20.95	1.28	6.11%	8.50%	9.00%	5.00%	11.11%	17.50%
Great Plains Energy	15.69	28.09	1.66	5.91%	10.58%	3.00%	4.00%	8.91%	14.58%
Hawaiian Electric	34.55	49.00	2.48	5.06%	7.18%	1.50%	3.00%	6.56%	10.18%
MGE Energy Inc.	24.58	30.14	1.35	4.48%	5.49%	6.00%	N/A	10.48%	11.49%
Comparable Companies' Averages	19.22	28.50	1.43	5.00%	7.77%	5.67%	5.00%	10.00%	13.85%

Sources:
Value Line Investment Survey
Standard & Poor's Earnings Guide

Schedule DAM-10

Missouri Public Service [redacted]

Comparable Electric Companies

Current Cost of Capital

	Share Prices Low	Share Prices High	Current Dividend	Current Yields Low	Current Yields High	1997-99 Dividend	2006-08E Dividend	Growth Rate	Cost of Capital Low	Cost of Capital High
Central Vermont P.S.	17.79	18.24	0.88	4.82%	4.95%	0.88	1.04	1.87%	6.70%	6.82%
CLECO Corporation	15.45	15.97	0.90	5.64%	5.82%	0.81	0.90	1.18%	6.81%	7.00%
Empire District	20.02	20.47	1.28	6.25%	6.39%	1.28	1.28	0.00%	6.25%	6.39%
Great Plains Energy	26.88	27.39	1.66	6.06%	6.18%	1.64	1.66	0.13%	6.19%	6.31%
Hawaiian Electric	41.43	42.11	2.48	5.89%	5.99%	2.47	2.50	0.15%	6.04%	6.13%
MGE Energy Inc.	28.70	29.28	1.35	4.61%	4.70%	1.30	1.38	0.67%	5.28%	5.37%
Comparable Companies' Averages	25.05	25.58	1.43	5.55%	5.67%	1.40	1.46	0.67%	6.21%	6.34%

Sources:
Value Line Investment Survey
Yahoo! FINANCE

Schedule DAM-11

Missouri Public Service [redacted]

Comparable Electric Companies

Current Cost of Capital

	Share Prices Low	Share Prices High	Current Dividend	Current Yields Low	Current Yields High	1997-99 EPS	2006-08E EPS	Growth Rate	Cost of Capital Low	Cost of Capital High
Central Vermont P.S.	17.79	18.24	0.88	4.82%	4.95%	0.93	2.00	8.92%	13.75%	13.87%
CLECO Corporation	15.45	15.97	0.90	5.64%	5.82%	1.13	2.00	6.51%	12.15%	12.34%
Empire District	20.02	20.47	1.28	6.25%	6.39%	1.32	1.75	3.21%	9.47%	9.61%
Great Plains Energy	26.88	27.39	1.66	6.06%	6.18%	1.61	2.25	3.77%	9.83%	9.94%
Hawaiian Electric	41.43	42.11	2.48	5.89%	5.99%	2.87	3.25	1.39%	7.28%	7.38%
MGE Energy Inc.	28.70	29.28	1.35	4.61%	4.70%	1.42	2.25	5.25%	9.86%	9.95%
Comparable Companies' Averages	25.05	25.58	1.43	5.55%	5.67%	1.55	2.25	4.84%	10.39%	10.51%

Sources:
Value Line Investment Survey
Yahoo! FINANCE

Schedule DAM-12

Missouri Public Service [redacted]

Comparable Electric Companies

Current Cost of Capital

	Share Prices		Current	Current Yields		EPS Estimates		Cost of Capital	
	Low	High	Dividend	Low	High	Value Line	S&P	Low	High
Central Vermont P.S.	17.79	18.24	0.88	4.82%	4.95%	9.00%	N/A	13.82%	13.95%
CLECO Corporation	15.45	15.97	0.90	5.64%	5.82%	5.50%	8.00%	11.14%	13.82%
Empire District	20.02	20.47	1.28	6.25%	6.39%	9.00%	5.00%	11.25%	15.39%
Great Plains Energy	26.88	27.39	1.66	6.06%	6.18%	3.00%	4.00%	9.06%	10.18%
Hawaiian Electric	41.43	42.11	2.48	5.89%	5.99%	1.50%	3.00%	7.39%	8.99%
MGE Energy Inc.	28.70	29.28	1.35	4.61%	4.70%	6.00%	N/A	10.61%	10.70%
Comparable Companies' Averages	25.05	25.58	1.43	5.55%	5.67%	5.67%	5.00%	10.55%	12.17%

Sources:
Value Line Investment Survey
Standard & Poor's Earnings Guide
Yahoo! FINANCE

Schedule DAM-13

Missouri Public Service [redacted]

Comparable Electric Companies

Summary of Discounted Cash Flow Analysis

	DCF Range	
	Low	High
DCF Using Projected Growth Rates and 52 Week Share Prices		
Comparable Companies' Averages	10.00%	13.85%
DCF Using Projected Growth Rates and Current Share Prices		
Comparable Companies' Averages	10.55%	12.17%

Sources: Schedules DAM-10 and DAM-13

Missouri Public Service [redacted]

Comparable Electric Distribution Companies

Cost of Equity : Historical Capital Asset Pricing Model

Company	Market Total Returns	Long-Term Corporate Bonds Return	Risk Premium	Beta	Adjusted Risk Premium	Aaa Corporate Bonds Return	Cost of Equity
Central Vermont P.S.	14.55%	6.20%	8.35%	0.50	4.18%	5.89%	10.07%
CLECO Corporation	14.55%	6.20%	8.35%	0.85	7.10%	5.89%	12.99%
Empire District	14.55%	6.20%	8.35%	0.60	5.01%	5.89%	10.90%
Great Plains Energy	14.55%	6.20%	8.35%	0.70	5.85%	5.89%	11.74%
Hawaiian Electric	14.55%	6.20%	8.35%	0.55	4.59%	5.89%	10.48%
MGE Energy Inc.	14.55%	6.20%	8.35%	0.50	4.18%	5.89%	10.07%
Comparable Companies' Averages	14.55%	6.20%	8.35%	0.62	5.15%	5.89%	11.04%

Sources :
Value Line Investment Survey
Ibbotson Associates 2003 SBBI Yearbook
Federal Reserve Statistical Release

Missouri Public Service [redacted]

Comparable Electric Distribution Companies

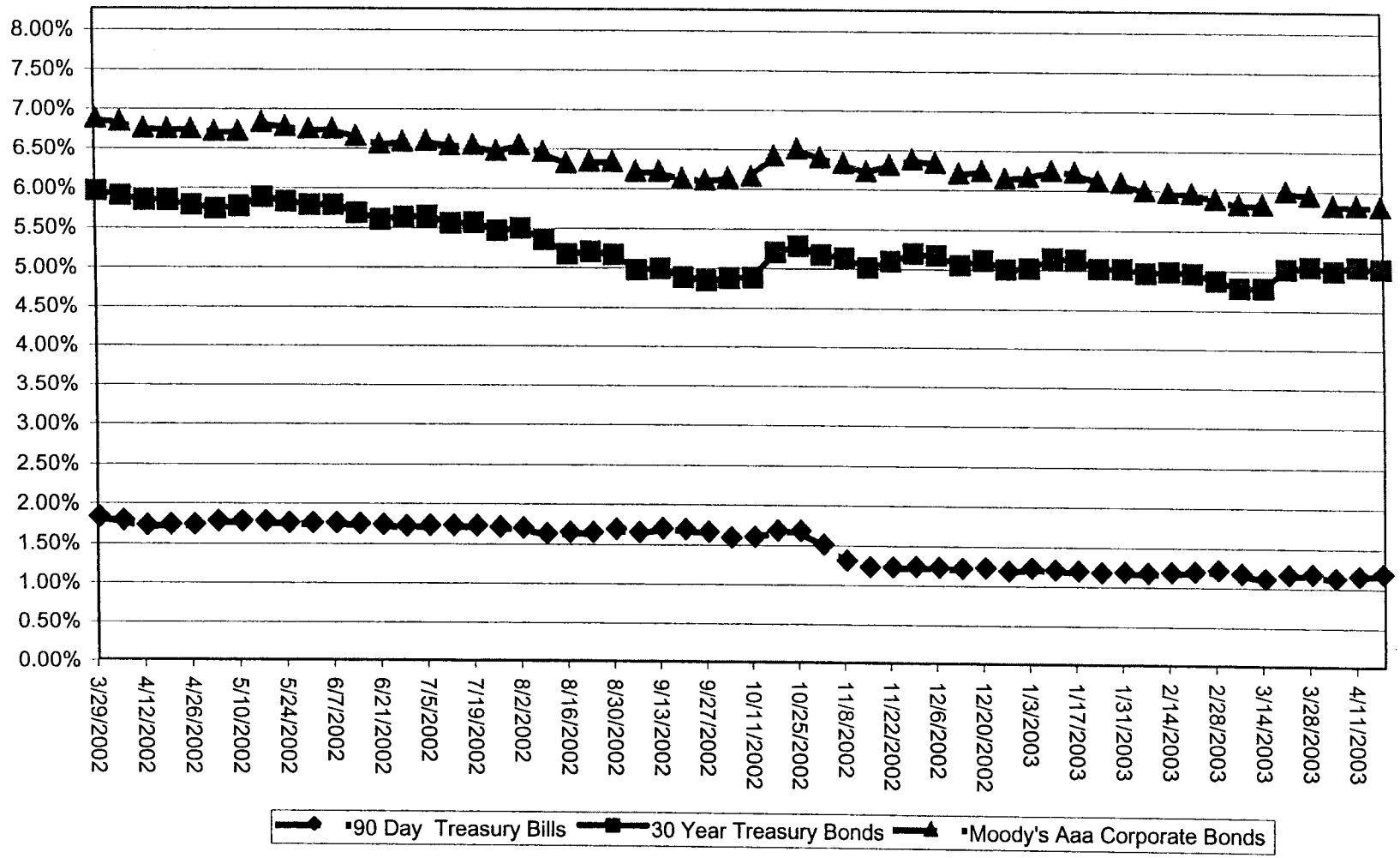
Cost of Equity : Size Adjusted Capital Asset Pricing Model

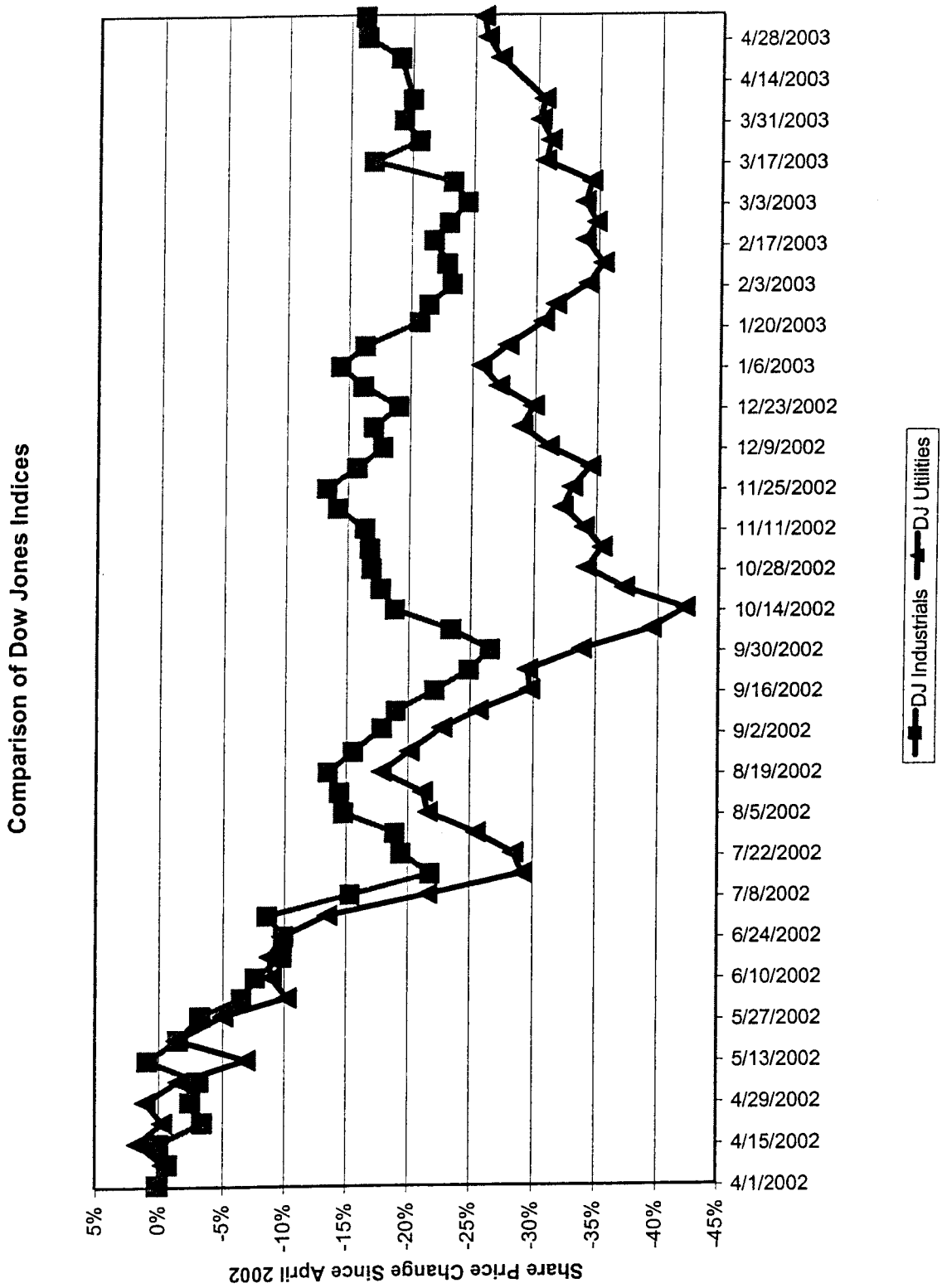
Company	Risk Free Return	Beta	Equity Risk Premium	Adjusted Equity Risk Premium	Size Premium	Cost of Equity
Central Vermont P.S.	4.90%	0.50	7.00%	3.50%	3.53%	11.93%
CLECO Corporation	4.90%	0.85	7.00%	5.95%	1.52%	12.37%
Empire District	4.90%	0.60	7.00%	4.20%	1.52%	10.62%
Great Plains Energy	4.90%	0.70	7.00%	4.90%	0.82%	10.62%
Hawaiian Electric	4.90%	0.55	7.00%	3.85%	0.82%	9.57%
MGE Energy Inc.	4.90%	0.50	7.00%	3.50%	1.52%	9.92%
Comparable Companies' Averages	4.90%	0.62	7.00%	4.32%	1.62%	10.84%

Sources :
Value Line Investment Survey
Ibbotson Associates 2003 SBBI Yearbook
Federal Reserve Statistical Release

Schedule DAM-16

Comparison of Bond Yields





Schedule DAM-18

Missouri Public Service [redacted]

Comparable Companies

Comparison of Average Annual P/E Ratio

Company	1999	2000	2001	2002	2003	Five Year Average	Forecast '06-'08
Central Vermont P.S.	9.5	9.7	17.8	11.4	11.9	12.1	11.0
CLECO Corporation	13.4	13.2	14.6	12.2	7.9	12.3	10.0
Empire District	21.7	17.7	33.9	16.2	12.9	20.5	12.0
Great Plains Energy	20.0	12.4	15.9	11.1	11.1	14.1	12.5
Hawaiian Electric	12.1	12.9	11.8	13.5	13.5	12.8	11.5
MGE Energy Inc.	14.0	11.7	14.8	16.0	15.4	14.4	12.5
Comparable Companies' Averages	15.1	12.9	18.1	13.4	12.1	14.3	11.6

Source: Value Line Investment Survey

Schedule DAM-19

Missouri Public Service

Proposed Cost of Capital

December 2002

	Ratio	Emebedded Cost		Weighted Cost of Capital	
		Low	High	Low	High
Long-Term Debt	52.50%	7.23%	7.23%	3.79%	3.79%
Common Equity	47.50%	12.00%	12.50%	5.70%	5.94%
Total	100.00%			9.49%	9.73%

Source: Missouri Public Service Work Papers

Missouri Public Service [redacted]

Comparable Electric Companies

Comparison of After-Tax Times Long Term Interest Earned Ratios

Missouri Public Service	@12.0% ROE	2.50
St. Joseph Light & Power		2.42
Central Vermont P.S.		2.71
CLECO Corporation		2.18
Empire District		1.84
Great Plains Energy		2.97
Hawaiian Electric		2.58
MGE Energy Inc.		3.42
Comparable Companies' Average		2.62

Source : Value Line Investment Survey

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the matter of Aquila, Inc. d/b/a Aquila Networks-MPS [redacted] for authority to file tariffs increasing electric rates for the service provided to customers in the Aquila Networks-MPS [redacted]	)	Case No. ER-_____

County of Oklahoma)
) ss
State of Oklahoma)

AFFIDAVIT OF DONALD A. MURRY

Donald A. Murry, being first duly sworn, deposes and says that he is the witness who sponsors the accompanying testimony entitled "Direct Testimony of Donald A. Murry;" that said testimony was prepared by him and under his direction and supervision; that if inquiries were made as to the facts in said testimony and schedules, he would respond as therein set forth; and that the aforesaid testimony and schedules are true and correct to the best of his knowledge, information, and belief.

Donald A. Murry

Subscribed and sworn to before me this 16th day of June, 2003.

Pat Burnett Notary Public

My Commission expires:
10-8-2006
02017037