Exhibit No.:	_____
Issue(s):	Rate of Return
Witness:	Ben Johnson
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Case Number:	ER-2005-0436
Date Testimony Prepared:	October 14, 2005

DIRECT TESTIMONY

OF

BEN JOHNSON

Submitted on Behalf of
the Office of the Public Counsel

AQUILA, INC.

Case No. ER-2005-0436

October 14, 2005

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of the Tariff Filing of Aquila, Inc., to Implement a General Rate Increase for Retail Electric Service Provided to Customers in its MPS and L&P Missouri Service Areas.	))))	**Case No. ER-2005-0436**

AFFIDAVIT OF BEN JOHNSON

STATE OF FLORIDA)
) ss
COUNTY OF (Leon))

Ben Johnson, of lawful age and being first duly sworn, deposes and states:

1. My name is Ben Johnson. am a Consulting Economist and President of Ben Johnson Associates, Inc.®.

2. Attached hereto and made a part hereof for all purposes is my rebuttal testimony consisting of pages 1 through 40 and Schedule 1 through Schedule 11.

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

Ben Johnson
President and Consulting Economist

Subscribed and sworn to me this 14th day of October 2005.

Elizabeth K. Birdwell
Notary Public

My commission expires (September 14, 2007)

Elizabeth K. Birdwell
MY COMMISSION # DD246504 EXPIRES
September 14, 2007
BONDED THRU TROY FAIN INSURANCE, INC.

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TESTIMONY

OF BEN JOHNSON, PH.D.

On Behalf of

THE STATE OF MISSOURI

OFFICE OF THE PUBLIC COUNSEL

Before the

MISSOURI PUBLIC SERVICE COMMISSION

Case No. ER-2005-0436

Introduction

Q. Would you please state your name and address?

A. Ben Johnson, 2252 Killearn Center Blvd, Tallahassee, Florida.

Q. What is your present occupation?

A. I am a consulting economist and president of Ben Johnson Associates, Inc.®, an economic research firm specializing in public utility regulation.

Q. Have you prepared an appendix that describes your qualifications in regulatory and utility economics?

A. Yes. Appendix A, attached to my testimony, will serve this purpose.

Q. Have you prepared any exhibits in support of your testimony?

A. Yes. I have an exhibit consisting of 11 schedules. These schedules were prepared under my supervision and are true and correct to the best of my knowledge.

Q. What is your purpose in making your appearance at this hearing?

A. My firm has been retained by the Office of Public Counsel to assist in preparing and presenting evidence in this proceeding with respect to the cost of capital of Aquila, Inc. dba Aquila Networks - MPS and Aquila Networks - L&P (Aquila, or the Company).

My testimony has six sections, of which this introduction is the first. In the second section, I discuss the Company's proposed capital structure and cost of debt. In the third section, I describe the comparable earnings and market approaches to determining the cost of equity. In the fourth section, I present the results of my comparable earnings analysis. In the fifth section, I present the results of my market approach analysis. In the sixth and final section, I summarize my conclusions and recommendations.

Capital Structure and Cost of Debt

Q. Let's turn to the second section of your testimony, regarding the Company's capital structure and cost of debt. To begin with, what is the Company's requested capital structure?

A. For both operating divisions, Aquila has proposed a capital structure of 51.8% debt, and 48.2% equity. [See, e.g., Hadaway Direct, p. 8] The Company's witness, Dr. Hadaway,

explains that this capital structure is based on

> the 2004 capital structure percentages of the investment grade 29-company reference group used to estimate ROE. ... It is also consistent with the Company's internal capital assignment process, which it has used to assign the appropriate levels and amounts of equity and debt to its utility operating divisions since 1987. [Id., p. 9]

Q. Are there other options that could also be considered in a case like this?

A. Yes. Where an operating utility is the subsidiary or operating division of another company, there are several possibilities approaches to capital structure: the subsidiary capital structure, the consolidated capital structure of the parent and its subsidiaries, an imputed capital structure, or a hypothetical capital structure. If the consolidated capital structure is used, substantial adjustments may be necessary, in order to appropriately deal with unregulated subsidiaries that are included in the consolidated data. Regardless of the specific approach that is used, the capital structure should be one that is appropriate and cost-effective for the regulated utilities that are the subject of this proceeding.

Typically, unregulated firms have a higher degree of business risk than regulated utilities, and therefore they use a more conservative capital structure--one consisting of more common equity. The regulated utilities which are the subject of this proceeding are part of a larger corporate group which includes merchant power generators and other unregulated operations which are much riskier than the regulated utilities. All of the available financial data for Aquila, including data concerning debt ratios and interest rates, is influenced by the presence of these higher risk operations. The general effect of these operations is to make it more difficult to sustain a minimum cost capital structure, forcing the firm to rely on a larger percentage of high cost equity capital, or to pay higher

interest rates, or both.

Q. Do you agree with Dr. Hadaway's proposed capital structure?

A. No. His recommended capital structure includes a larger percentage of equity capital and smaller percentage of debt capital than is appropriate and necessary for cost effectively financing the regulated operations. As well, he is recommending use of a smaller percentage of debt capital than is actually present in the Company's consolidated capital structure – despite the fact that the regulated utilities represent the least risky portion of the consolidated entities. Finally, I would note that the proposed capital structure is not consistent with the proposed cost of debt used by Dr. Hadaway, which was based upon Aquila's actual financial data.

I recommend that the Commission use Aquila's actual consolidated capital structure to develop the allowed rate of return in this proceeding. Aquila's actual capital structure included 67.3% debt and 32.7% equity as of the end of 2004. [Value Line Investment Survey] Aquila's actual capital structure includes an appropriate, cost-effective mixture of equity and debt, and enables the Company to recover the actual debt costs incurred in financing the Missouri regulated utilities.

In contrast, if the Commission were to use the capital structure proposed by Dr. Hadaway, it would be assuming the use of significantly more equity capital than is necessary to finance these operations, thereby forcing Aquila's utility customers to pay for hypothetical debt costs that do not exist in reality, and which exceed the level of capital costs which is actually necessary. Accordingly, I recommend that the Commission use a capital structure consisting of 67.3% debt, and 32.7% equity.

Q. Let's turn to the Company's cost of debt. What debt rate has Aquila requested?

A. The Company has requested a debt rate of 6.7% and 7.96% for the MPS and LP divisions, respectively. [See, e.g., Hadaway Schedule SCH-2] As explained by Dr. Hadaway:

> These figures result from the Company's internal capital assignment process whereby it assigns capital to its operating divisions on an "as needed basis." The cost of debt for each operating division reflects the average cost rates for issues assigned to each division as of December 31, 2004. All of the debt issues assigned to either division have been assigned at "investment grade" rates per the Company's ongoing policy to protect its ratepayers from the activities of its non-regulated businesses through its capital assignment process. {Hadaway Direct, p. 8]

Q. What is the difference between the debt assigned to the MPS division, and the debt assigned to the LP division?

A. LP's overall cost of debt is primarily driven by $86.9 million in assigned senior notes carrying an effective rate of 7.742%. [Hadaway Schedule SCH-2] These notes account for more than 66% of LP's total assigned debt. On the other hand MPS's 3 largest debt assignments carry effective interest rates of 5.35% 6.05% and 6.745%. Collectively, these senior notes account for approximately 56% of MPS's total assigned debt. Further, Aquila has assigned some debt to MPS with effective rates of less than 2%. [Id.]

Q. Is Aquila's cost of debt appropriate for this proceeding?

A. Assigning debt capital to specific operating divisions in this manner is a somewhat arbitrary procedure – one that could be subject to manipulation in an effort to shift costs away from the unregulated operations onto the regulated operations. In this instance, however, I believe the cost of debt that has been proposed by the Company is reasonable for rate making purposes, notwithstanding the somewhat arbitrary procedures that were

used in developing these cost rates. Accordingly, I am not disputing this portion of the Company's proposed rate of return.

Clearly, Aquila has assigned some of its lowest cost debt to the regulated electric operating divisions. This can be confirmed by comparing Aquila's annual interest expenses to its average annual debt balance, which provides a rough approximation of the Company's overall cost of debt. Aquila's 2004 interest expense was $258.4 million. [2004 Annual Report to Stockholders] Its beginning and ending average outstanding long term debt balance was $2,539 during 2004. [Id.] Aquila had no short term debt during 2004. Dividing interest expense by its average outstanding debt results in a consolidated debt rate of approximately 10.2%.

Logically, the Company's overall debt costs should be substantially higher than those of the regulated utilities, since it is using some of its debt to finance its high-risk operations, such as its merchant power plants and wholesale energy trading. Clearly, many of the recent debt issuances required payment of interest rates that are consistent with the risks associated with those unregulated operations, rather than those of its regulated utilities. For example, at the end of 2004, Aquila's books showed $500 million in senior notes with a cost of 14.875%, and $250 million in senior notes with a cost of 9.95%. [Id.] These costly notes comprised approximately 32% of the Company's total long term debt. [Id.]

I do not necessarily agree with every detail of the calculations used in developing the Company's proposed debt costs. However, the resulting cost rates are reasonable for use with my recommended capital structure, and thus I recommend their acceptance.

Methods for Determining Cost of Equity

Q. Let's turn to the next part of your Cost of Capital testimony. How can the cost of equity be estimated?

A. There are at least two major approaches used to estimate the cost of equity capital which have historically been used in regulatory proceedings—the comparable earnings approach and the market approach. In the former approach the analyst attempts to derive the utility's cost of capital from published data concerning the returns that firms earn on the equity funds that have been placed at their disposal. In the latter approach, the analyst attempts to calculate the rate of return that utility investors require on the equity funds they place at the utility's disposal using data from securities markets.

Although each approach emphasizes a different aspect of economic theory, when properly performed both methods attempt to measure the same concept: the cost of equity capital. In practical applications, however, these two approaches can produce different results, because they rely upon different data sources.

Q. Can you compare the Comparable Earnings Approach with the Market Approach?

A. Yes. As I use these terms, the comparable earnings approach is grounded in the economic theory of competition in the market for goods and services, rather than the market for securities. This theory suggests that the return earned by the average firm in a competitive industry will tend to be equal to the opportunity cost of equity capital---the return which could be earned by investing and operating in another industry while facing comparable risk. To the extent this is temporarily not true, equity capital will tend to

flow away from the industries earning insufficient returns and into the ones earning excessive returns.

As a result of this adjustment process, the balance will gradually shift: competition will diminish in industries which lose firms and increase in industries which gain firms. As firms leave the industries with insufficient returns, the remaining firms will tend to earn higher returns. Conversely, increased competition in industries with excessive returns will drive down returns, until they no longer exceed the opportunity cost of equity capital. The same pattern of competitive forces also occurs as firms earning high returns expand their capacity, and firms earning inadequate returns retrench. Over time, returns tend to equilibrate towards a normal level (although some individual firms may repeatedly earn more than their cost of capital, due to the presence of market power or other unique attributes).

Consequently, the theory of competition provides a basis for determining the opportunity cost of equity capital. By using the comparable earnings approach, one can estimate the long-run cost of equity as being equivalent to the level of returns being earned, on average, by firms throughout the economy. To the extent one is using this method to estimate equity costs for a firm that faces above or below average risk, it is necessary to adjust the economy-wide level of equity cost for the relevant differences in risk.

One of the major advantages of the comparable earnings approach is its simplicity. Basically, it is only necessary to determine the returns on book equity earned by firms throughout the economy over one or more business cycles and use the resulting observed average return as an estimate of the cost of equity. To the extent applicable, it

may also be necessary to adjust this average cost of equity for any differences in risk that may apply to a particular context.

Q. The comparable earnings approach, properly used, appears fairly simple. Are there any pitfalls?

A. Yes, there are a few potential pitfalls. First, it is important to include a cross-section of companies in the study. This broader base prevents the possible selection of an unusual group of firms which earn returns significantly above or below the norm. Second, care must be taken to avoid the use of data from a group of firms which have a large amount of monopoly power. Otherwise, the returns included in the study may be biased upward to a significant degree by the presence of monopoly profits. Third, it is important to resolve any differences in risk. For instance, if the firms included in the study face a higher degree of risk than the firm in question, this difference must be recognized by adjusting downward the observed returns to reflect the cost of equity to a firm facing lower risk.

Q. Would you next discuss the market approach?

A. Yes. In contrast to the comparable earnings approach, the market approach tends to be more complex, and it rests upon a somewhat different theoretical foundation. Generally speaking, the market approach, when properly applied, is tied to the theory of competition in the market for investment securities, instead of goods and services. In a competitive market, the return earned on one security will tend to equal the returns earned on other securities of comparable risk. If the return earned on a particular security exceeds the

level they require, investors will bid up the price of that security. By the same token, investors will bid down the market price of a security if its return is below the required level. In both cases, the price will be adjusted until the expected total return reaches the required level, which is the cost of equity capital.

The market and comparable earnings approaches are interrelated, because the theory of competition suggests that in equilibrium the cost of equity derived from the comparable earnings approach should exceed the cost of equity derived from the market approach by only a small fraction, in order to cover the transaction costs associated with common stock issuance. Only this small marginal deviation can logically persist, assuming there is sufficient competition in both the securities and goods and services markets.

To illustrate this principle, it is helpful to consider the following situation: What would happen if existing firms consistently earned returns considerably higher than the level demanded by investors in the securities market? In all probability, entrepreneurs would create new firms in an effort to share in the high returns enjoyed by existing firms. In addition, existing firms would expand in an effort to maintain their market share and take advantage of the opportunity for supra-normal profits. To fuel this growth, additional equity shares would be issued and/or profits retained.

In the absence of barriers to entry or other factors that preclude competitive forces from being completely effective, the universe of competing companies would grow, and the supply of equity securities would expand, until the actual returns earned by firms was driven down to levels that are consistent with the returns required by equity investors. Accordingly, because of the interaction between the securities market and the markets for

goods and services, and assuming competition exists in both sets of markets, earnings on book equity should in the long run exceed the return on equity demanded by investors by only the small fraction needed to cover the transaction costs associated with securities issuances.

Comparable Earnings Analysis

Q. Would you please discuss the approach taken in your comparable earnings analysis?

A. Yes. To provide a sufficiently broad data base for my study of achieved returns, and to avoid circular reasoning in my conclusions, I have analyzed the returns of a wide range of firms in the unregulated sectors of the economy. This wide-spectrum approach minimizes any bias inherent in the data, especially since I focus on the earnings of unregulated firms which do not exert large amounts of monopoly power. I have not assumed the achieved returns of a specific firm or group of firms to be adequate or reasonable when there is evidence to the contrary. Thus, any potential circular reasoning is prevented.

One of the major advantages of this approach, properly used, is its relative simplicity. My analytical procedure can be summarized in five steps. First, I studied the rates of return on average common equity earned by unregulated (primarily industrial) firms. Second, on the basis of the historical earnings of these firms and an analysis of current economic conditions, I estimated the current cost of equity capital to the average unregulated (industrial) firm. Third, I examined the relative risk of utilities versus

industrials and estimated the current cost of equity for various types of utilities, including electric companies. Fourth, I used the latter as a benchmark in deriving the comparable-earnings-based estimate of the Company's cost of equity.

Q. What conclusions have you drawn concerning the historical rate of earnings on common book equity for industrial firms?

A. Schedules 1 and 2 of my exhibit shows the earnings on average common equity of two broad and comprehensive groups. The Federal Trade Commission's "All Manufacturers" group, shown on Schedule 1, is a very broad-based group of industrial firms. These firms earned an average return of 10.5% during the five years 2000-2004. During the five years 1999-2003, the returns averaged 10.6%. For the 10-year period 1995-2004, returns on equity averaged 13.4%. For the 15-year period 1990-2004, returns on equity averaged 11.8%, and for the 20-year periods ending in 2002, 2003 and 2004 earnings averaged 11.7%, 11.8% and 11.9%, respectively. Finally, for the 30-year period 1975-2004, earnings averaged 12.3%.

The analogous data for the range of industries monitored quarterly by Business Week are shown on my Schedule 2. Earnings for this comprehensive group of approximately 900 companies averaged 11.8% during the 5 years 2000-2004 and 12.3% during the 5 years 1999-2003. Earnings were higher during the 10-year period 1995-2004, averaging 14.1%, but over the 15 year period ended in 2004 earnings averaged 13.3%, and during the 20-year period 1985-2004, their earnings averaged 13.0%. Similarly, over the 30 years from 1975 through 2004, the industries monitored by Business Week earned an average annual return on equity of 13.2%.

Q. Would you explain how you used this information?

A. Certainly. I looked at changes in equity returns over the long run and during the recent past, as well as current economic conditions, to estimate the current and near-future cost of equity. As depicted on Schedule 1, returns earned by unregulated firms tend to fluctuate with the business cycle--increasing during periods of expansion and falling during recessions. For example, just before and slightly into the 1980 recession, these returns peaked above 16%; they declined sharply during the subsequent recession. In 1988, returns again peaked at just over 16%. They then began to fall, reaching a low of 2% in 1992. Annual returns ending in the 4th quarter climbed above 15% for the years 1994 through 2000, then dropped below 2% in 2001. More recently, returns have climbed above 15% for the 12 months ending in the fourth quarter of 2004.

While this data reveals that manufacturing returns have fluctuated quite dramatically with changes in the business cycle, it also indicates that these returns have been rather stable over the longer run. For example, during the 15 year period 1990-2004, the FTC "All Manufacturers" returns averaged 11.8%, and the analogous returns over the 20 year period from 1983 through 2002 averaged 11.7%.

Q. Is this pattern consistent with that of other industry groups you have examined?

A. Yes. As Schedule 2 indicates, Business Week tracks data for more than 900 firms in a wide spectrum of industries. These equity returns also fluctuate with the business cycle; average returns reached a low of 8.8% in 1991 before climbing to a high of 16.8% in 1996. More recently, equity returns for this group sank to a low of 5.7% in 2001, before climbing to 14.7% in 2004. Long term averages for the most recent 20 year period was

13.0%, which is somewhat higher than the FTC "All Manufacturers" group averaged over the same time period.

Q. What have you concluded concerning the cost of equity to industrials and other unregulated firms?

A. Considering the full spectrum of information concerning returns earned in the unregulated sectors over the course of the business cycle, I have concluded that the average current and near-future opportunity cost of equity capital to a typical unregulated firm is in the neighborhood of 11.5% to 13.0%.

Q. How does your conclusion compare with the observed results?

A. My estimate range of 11.5% to 13.0% is consistent with the normal return earned by the average unregulated firm over the full course of the business cycle. The low end of the range is approximately equal to the 11.8% earned by the FTC "All Manufacturers" during the 15 year period 1990-2004, while the high end of the range is approximately equal to the 13.3% earned by the Business Week firms over this same 15-year period. The midpoint of this range (12.25%) is somewhat higher than the most recent earnings of these groups (which averaged 10.5% and 11.8%, respectively during the 5 years 2000-2004), and it is somewhat lower than the 10-year average of these groups (which averaged 13.4% and 14.1%, respectively during the 10 years 1995-2004).

Q. Does a utility's risk differ significantly from the risk of a typical unregulated firm?

A. Yes. The equity risk of the average regulated utility is far lower than that of the average

unregulated firm--an important fact that needs to be considered in any estimate of a utility's cost of equity capital. Nevertheless, all utilities do not face the same risk. In fact, significant risk differences exist between different types of utilities. For example, electric utilities, which construct and maintain massive generating plants and transmission facilities, must wrestle with problems of lead time, environmental impact, and financing to a greater degree than water and sewer utilities and telephone companies. Electric and gas distribution utilities also risk changes in the cost and availability of various fuels, and most electric utilities face the additional uncertainties of environmental regulation. While telephone utilities do not face these problems, they do face an increasing degree of competition, changing regulatory and market conditions, and they rely on some technologies that are subject to rapid change.

Q. Why do you believe that utilities are generally less risky in equity investment than unregulated firms?

A. First, most public utilities enjoy territorial certificates that free them from competition within their market area; unregulated firms do not. As virtual monopolies, public utilities confront to a far lesser degree the possibility of market erosion. The average competitive firm, by contrast, must face the uncertainty of actions taken by its rivals, continually running the risk that their success will reduce its earnings.

Second, because of the nature of their services, utilities face relatively minimal variations in demand. There is little likelihood, for instance, that the demand for basic telephone service or water and sewer service will drop substantially over a short period of time. In contrast, most competitive firms face uncertainty not only about the actions of

their competitors, but also about the prospects of their entire industry.

Third, utilities are far less subject to the uncertainties associated with fluctuations in the business cycle. Typically, the demand for public utility services holds relatively firm throughout a recession and does not increase sharply in periods of economic expansion.

Fourth, public utilities are reasonably certain of recovering most of their costs most of the time. Although utilities argue that regulatory lag is a hindrance, most competitive firms would be thankful to have the same assurance as utilities that they will be able to recover increased costs from their customers, despite the lag problem.

Because of these substantial risk differences, public utilities should not be provided with the opportunity to earn returns equal to or greater than the ones earned by unregulated and competitive enterprises, and, in my opinion, the equity markets for public utilities and for unregulated firms should be separated.

Q. Can you elaborate on the differences in risk among regulated utilities?

A. Risk is affected by differences in product line, operational characteristics, market structure, size, management techniques, bond ratings, capital structure, and many other factors. In isolated cases a public utility may actually face risks comparable to those of an unregulated firm, if not greater. Such an exceptional situation will rarely, if ever, occur when making comparisons with the average unregulated firm, but it can sometimes occur when drawing comparisons between individual firms; for instance, a particular unregulated firm might enjoy a substantial degree of monopoly power, which lessens its exposure to normal competitive risks. Nevertheless, all utilities incur at least some

degree of equity risk – none of them operate in entirely risk free environments.

Amongst the utilities, telephone carriers face the greatest uncertainty with respect to competition, both as a result of declining barriers to entry, and because a variety of different products and services can be substituted for many of the services provided by these firms. Local exchange companies, which are historically operated as de facto monopolies in their service areas, are experiencing competitive pressures from cellular carriers, long distance carriers, competitive local exchange carriers, cable television carriers, and smaller specialized telecom suppliers.

At the other extreme, water utilities face very little risk from competition and product substitution; in fact, these firms tend to face the lowest overall level of equity risk. The elasticity of demand for water service is extremely low, thereby reducing the equity risks faced by the average local water company to a level far below that of the typical industrial firm, and below most other regulated utilities. Simply stated, life cannot exist without water. At any conceivable price--no matter how high--most customers will continue to use a water utility's product, particularly in urban areas where water wells and septic tanks are not viable options. This is crucially important, because it suggests that most of the risks that a water utility confronts can potentially be solved, if necessary, by raising prices. For instance, changing environmental regulations may lead to cost increases, but water utilities can rest assured that these cost increases will ultimately be passed through and borne by their customers.

Electric utilities and gas distribution utilities fall somewhere between local exchange carriers and water utilities on the spectrum of risk. Regulated electric utilities face a limited degree of competition from unregulated electric providers, particularly in

the generation sector. On the other hand, like water utilities, electric utilities provide a product with no short run substitute. Gas utilities face a more substantial, but still limited, degree of product substitution risk – particularly with respect to industrial customers who maintain dual fuel capabilities. Most gas customers, however, will continue using natural gas even if the price of propane or fuel oil declines relative to the price of gas. As well, the prices of natural gas and substitute fuels tend to move somewhat in tandem – in response to global market forces – and thus gas utilities face very limited risk from product substitution and other forms of indirect competition, particularly over the short run.

Of course, compared with water utilities both gas and electric utilities face a somewhat greater degree of uncertainty about the long term consequences of price increases – if cost increases, regulatory changes or other problems are sufficiently severe, energy utilities may eventually start losing some customers, and their sales volumes will be affected by conservation efforts – risks that do not apply to the typical water utility.

Q. What is your conclusion with respect to the level of risk facing different utilities?

A. I believe all utilities tend to face far lower risks than the typical unregulated firm, because the services they provide are vitally important, demand for those services tends to be relatively impervious to changes in the business cycle, and they generally enjoy the benefits of substantial barriers to entry and limited competition. Still, there are significant risk differences within the utility sector. Electric and gas utilities tend to be less risky than telephone utilities – just slightly more risky than water utilities.

Q. Is the analysis you have just presented applicable to Aquila's electric operating divisions in Missouri, specifically?

A Yes, it is. The demand for MPS and LP's primary services is far stronger and more stable than the demand for the products and services produced by most unregulated firms. The latter suffer far greater uncertainties over shifting market shares, changing technology and the vicissitudes of competition. Because the underlying demand for most products is not as stable as the demand for utility services, the average unregulated firm--even if well managed--faces the possibility of negative earnings, bankruptcy, and total extinction. No such concerns need apply to MPS and LP--particularly considering the stable, conservative regulatory climate in which they operate.

Q. Company witness Hadaway argues that an upward risk adjustment is necessary for Aquila. Do you agree?

A. No. Dr. Hadaway argues that such an adjustment is necessary for three reasons: 1) Aquila's electric operations are relatively small; 2) Aquila has a substantial amount of capital expenditures planned for its Missouri electric operations; and, 3) the majority of the companies in his proxy group have fuel and purchased power adjustment clauses that allow them to recover unexpected increases in these costs, while such clauses have historically been prohibited in Missouri. [Hadaway Direct, pp. 5-6]

Dr. Hadaway does not explain why he feels the Company's size warrants a risk adjustment. He simply states: "[T]here is sound academic evidence to support a small company risk premium." [Id, p. 6] Dr. Hadaway does not define "small", nor does he provide any hard evidence concerning specific size characteristics which might justify an

upward or downward risk adjustment for the Company based on size.

Aquila has approximately 450,000 electric distribution customers in three states. [FEC. From 1, Page 304 et. seq.] Approximately 290,000 of those customers are served by MPS and LP. [Id.] Aquila's electric operations are smaller than some of the electric operations of some of the 29 companies in Dr. Hadaway's proxy group, and larger than others. Of course, the mere fact that these operations are not precisely the same size as those of another firm would not necessarily justify a risk differential. Any such difference would need to be very substantial and – more importantly – result in a significant, measurable difference in risk.

Significantly, Aquila's customer base is not concentrated in a single, small service area. Like other utilities, its earnings may fluctuate a bit from year to year, but there is no reason to fear that the Company's earnings will ever drastically decline over an extended period of time. Aquila's service territory is large enough, and diversified enough, that it is not vulnerable to any extraordinary size related risks. Furthermore, if the Company were to encounter unexpected financial difficulties due to the loss of a significant number of customers, or some other extraordinary problem, there is no reason to fear that the Commission would turn a deaf ear to its plight. To the contrary, the Commission is obligated to provide the Company with a reasonable opportunity to earn a fair rate of return. Under these circumstances, there is no justification for boosting the Company's allowed return because of any minor differences that might exist in the size and scope of the Company's electric operations relative to those of other utilities.

For similar reasons, no adjustment is necessitated by the amount of capital spending Aquila is planning in the coming years. Dr. Hadaway states: "MPS/LP capital

expenditures over the next five years are expected to equal about 81 percent of their current net plant.". He notes that the amount of capital spending planned by Aquila, in relation to net plant, is greater than the average ratio for the companies in his proxy group. Finally, he concludes: "MPS/LP's larger construction program increases their financing and regulatory risks and therefore should be reflected in a higher allowed rate of return". [Hadaway Direct, pp. 5-6] However, this reasoning is not persuasive. Dr. Hadaway does not mention the fact that this added investment will benefit Aquila by reducing costs and/or enabling it to increase revenues. For instance, Aquila plans to construct base load generating capacity to be added to its system after 2009. This capacity will allow the Company to accommodate growth, enabling it to increase its revenues. This may also allow the Company to reduce its reliance on older, less efficient generating plants, which are more costly to maintain and operate. Moreover, to the extent a portion of the cost of this investment is not fully recovered through a reduction in costs or increase in revenues, Aquila can file another rate case, to recover any shortfall that might otherwise arise at the time the newly constructed plant and equipment is placed into service.

With regard to Dr. Hadaway's third argument, he concedes that the Missouri legislature has passed legislation that would allow fuel and purchased power clauses. [Id., p. 6] However, he claims that there is still some uncertainty because, at the time he prepared his testimony, the legislation had not become law, and because it is not clear exactly "how it will be applied to MPS/LP". [Id.] Dr. Hadaway provides no evidence that would indicate the legislation will not become law, or that the law will not be appropriately applied to Aquila, or that it will be applied in a manner that prevents the

Company from implementing fuel and purchase power clauses. In any event, he has not provided any evidence to support the argument that the presence or absence of a fuel and purchased power adjustment clause is of such extraordinary importance that it necessitates an upward or downward risk adjustment. In my opinion this is a relatively minor issue, which does not provide a sufficient basis for adopting a risk adjustment.

Q. You have previously described your analysis of the historical returns on equity of industrial firms, and your conclusions concerning the relative risk of electric utilities in general and Aquila in particular. Would you now please explain your opinion concerning the cost of equity to unregulated firms and utilities based on the comparable earning approach?

A. Yes. As I explained earlier, I have concluded that the current and near-future opportunity cost of equity capital to the typical unregulated firm is in the neighborhood of 11.5% to 13.0%. Because of the many risk differences separating these unregulated firms from utilities, my comparable earnings analysis suggests that the current and near-future cost of equity to utilities is far lower.

More specifically, I believe the cost of equity to the typical telephone utility is in the range of 10.5% to 11.5%, and the cost of equity to the typical gas and electric utility is in the range of 9.75% to 10.75%. These conclusions are derived from my estimate of the cost of equity to unregulated firms, adjusting for differences in risk: logically, the cost of equity for electric companies must be substantially lower than for manufacturers and other unregulated firms, because of the very substantial differences in risks faced by these respective types of firms.

Q. What is your conclusion concerning the Company's cost of equity using the comparable earnings approach?

A. I believe the equity risks facing the Company in its electric operations are about the same as, or slightly higher than, those of the average electric utility. In making this assessment I have taken into consideration the Company's size, its geographic footprint, regulatory climate, ongoing construction program, and capital structure. More specifically, based upon the comparable earnings approach I estimate the cost of equity to Aquila's MPS and LP operating divisions is 10.0% to 11.0%

Market Analysis

Q. Would you now discuss how the cost of equity is determined under the market approach?

A. Yes. Market data are used indirectly to estimate the return requirement for equity investors. This requirement, in turn, can be indirectly used as an estimate of the cost of equity capital. Since the rate of return is applied to the book amount of equity investment, the estimated investor return requirement should be factored up to allow for the transaction costs of issuing stock.

Q. What method have you employed in your market analysis of the cost of equity?

A. My market analysis is independent of my comparable earnings analysis. In developing my market analysis I used two closely related analytic processes involving data from the

financial markets. I developed two sets of distinct, yet closely related, calculations: I observed historic market returns earned by equity investors; and, I prepared a Discounted Cash Flow (DCF) analysis.

In an effort to minimize controversy and to help the Commission focus on key differences in our respective analytical approaches, for purposes of my DCF analysis I accepted the proxy group of 29 U.S. electric utilities used by Dr. Hadaway in his DCF analysis. Dr. Hadaway started with the 61 electric utilities included in Value Lines' East, West and Central electric utility groups. He then removed those that did not meet certain criteria:

> To be included in my group, reference companies must have at least a BBB-/Baa3 bond rating; they must derive at least 70 percent of revenues from regulated utility sales; and they must have consistent financial records not affected by recent mergers or restructuring, and a consistent dividend record with no recent dividend cuts. [Hadaway Direct, p. 4]

I believe that in performing a market analysis, especially in estimating the growth component in a DCF analysis, the status of investor expectations or psychology should be assessed very carefully, but it is also important to give adequate consideration to actual, historical data.

Similarly, I believe a strictly mechanical process should not be used, because this considers neither the available evidence regarding investors' moods and expectations nor subtle nuances such as the sustainability of particular growth rates (whether historically achieved or projected for the future).

In the broadest sense, the market approach is simply a technique for determining the rate of return that investors require from a particular security. Since the supply of a particular security tends to be fixed at any point, securities markets allow supply and demand to match by adjusting the price to an appropriate, market-clearing rate of return. Unfortunately, the market clearing return cannot be directly observed. Avoidance of incorrect or misleading conclusions about investor requirements entails a close examination of the securities markets and of the various psychological and economic factors that influence them.

Q. How should factors of market psychology be taken into consideration?

A. It is sometimes necessary to decide whether investors are optimistic or pessimistic about the future of the firm or firms in question. When attitudes are very negative, earnings/price ratios will be above the cost of equity, and market-to-book ratios will tend to be low, since the stock price is depressed by factors not fully reflected in the current earnings figure.

Conversely, during a period of bullish speculation, or when investor attitudes are particularly buoyant about the company in question, the calculated earnings/price ratio will tend to be less than the actual cost of equity. In effect, investors are anticipating extra earnings from their investment in the stock, beyond those reflected in the earnings per share.

Q. Let's discuss your first set of calculations under the market approach. What historical levels of achieved market returns have you observed?

A. I began my analysis with a review of total returns for the S&P 500, as reported by Ibbotson Associates in its annual *Stocks, Bonds, Bills and Inflation Yearbook*. For 1926 to 1976, these total returns were calculated by summing the return from capital appreciation return and from income (dividends) for this group of stocks. The capital appreciation return is measured as the change in the S&P 90 stock index from 1926 to March 1957, and the S&P 500 stock index from 1958 to 1976. According to the explanation provided by Ibbotson Associates, the income return was calculated by extracting quarterly dividends from rolling year dividends reported quarterly in S&P's *Trade and Securities Statistics*, then allocated to months within each quarter using proportions taken from the 1974 actual distribution of monthly dividends within quarters. After 1976, total returns were provided to Ibbotson Associates by the National Bank and Trust Company of Chicago.

Schedule 3 shows total returns from 1926 to 2004 for these large company stocks, as reported by Ibbotson. This 78-year period covers many business cycles and stock market cycles; therefore, dramatic fluctuations in earned returns occur throughout the series. These wide fluctuations can have a profound effect upon the observed returns that can be calculated from any given series of stock market data for any particular time period. For example, for the period 1929 to 1932, total annual returns averaged -21.2% On the other hand, from 1933 to 1936, returns averaged 33.4%.

Clearly, investors do not expect to earn extremely low returns, and they do not require extremely high returns. Yet, long stretches of inordinately high or low returns do occur. During some time periods, investors are unusually lucky, or they benefit from "irrational exuberance" which boosts stock prices year after year. During other periods investors are unusually unlucky, or they suffer the effects of undue pessimism, which push market prices below their long term trend line, or prevent them from rising as much as would occur under more typical conditions. The resulting year to year fluctuations in returns actually earned by investors are a key source of controversy and difficulty in carrying out the market approach.

Fortunately, a measure of central tendency can be observed if one looks at a long enough data series, or if one focuses on a time period which includes a balanced mixture of bear and bull markets. For instance, returns averaged 12.5% over the entire 78-year period. In my opinion, this long term average provides a reasonable estimate of the cost of equity for large company stocks. While the cost of equity during any one year can certainly deviate from this long term average, any market-based estimate of equity costs that is drastically different from this long term average should be treated with suspicion; absent a compelling reason for concluding that equity costs are currently far different from this long term average, it is more reasonable to conclude that equity costs are currently at least somewhat similar to the returns which investors have achieved over the very long term.

Q. Have you performed any additional calculations that tend to corroborate this very long term measure of equity costs?

A. Yes. On Page 2 of Schedule 3 I present the average returns over the 30, 25, 20, 15, 10 and 5 year periods ending in 2004. This series of recent time periods is dominated by the long bull market which ended a few years ago. The more recent years have been much less bullish, and thus returns have been lower (or negative) in the more recent past. As a result of this corrective period, the overall average of the returns earned by investors during these recent time periods tends to corroborate, to some degree, the very long term average results. For instance, averaging returns for the 30, 25, 20, 15, 10, and 5-year time periods ending in 2004, I computed an overall average of 11.6%.

To appreciate the degree to which these various returns tend to corroborate the 78-year average, consider a few specific examples. Over the 30-year period from 1946 through 1975, returns averaged 11.7%. Over the 30-year period ending in 1976, returns averaged 12.7%. Over the 30-year period ending in 1977, returns averaged 12.3%. Following the same procedure for all of the years up to and including the 30-year period ending in 2004, the overall cumulative average return is 12.3%, as shown in the bottom right hand corner of page 2 of Schedule 3. This averaging technique considers all of the data from the entire post-World War II period, but it places greater emphasis on more recent years.

Applying this same technique to the 10 year period from 1966 through 1975, the 10-year period ending in 1976, the 10-year period ending in 1977, and so forth, to and

including the 10-year period ending in 2004, the overall cumulative average return is 13.6%. I've computed similar averages over various other time periods, as shown in the matrix of results displayed on page 2 of Schedule 3. Viewed in its entirety, this data suggests that over long periods of time, the return required (and expected) by equity investors in the average large unregulated company (the types of firms included in this data series) is somewhere in the neighborhood of 12.5%. However, using this technique it is difficult to pinpoint a precise figure, because the actual returns fluctuate widely in response to changes in market psychology and other factors. Of course, investors would expect substantially lower returns from investments in utility stocks, due to the same sort of risk differences discussed earlier.

Q. Would you please briefly summarize the Discounted Cash Flow analysis you performed?

A. Yes. I concluded that investors in the 29 electric utilities require on average a return of approximately 8.0% to 9.5%, composed of a dividend yield of 5.0% to 5.5% and a long term future growth rate of 3.0 to 4.0%. This 5.0% to 5.5% dividend yield is consistent with the recent historic range of yields for these 29 companies' stocks, placing the greatest emphasis on the yields experienced during the past 3 years. This yield is currently satisfactory to investors, given their current growth expectations, low returns available from money market instruments and other investment alternatives, and current attitudes about the risk and growth profiles of these firms.

Q. Let's discuss your DCF analysis in detail. Would you please begin with a brief overview of recent dividend yields for the 29 electric utilities?

A. Yes. As shown on page 4 of Schedule 4, the average dividend/price ratio (yield) for the 29 electric companies have declined in recent years, moving from a high of 6.3% in 1995 to a low of 4.5% in 2004. Yields averaged 5.0% for the 3 year period 2002-2004, and 5.2% during 2001-2003. Yields for these 29 companies averaged 5.1% for the 5 year period 2000-2004, and 5.3% for the five year period ending in 2003. After evaluating this data, I selected a dividend yield of 5.0 to 5.5% for my DCF analysis.

Q. How does this 5.0 to 5.5% range compare to the dividend yield Dr. Hadaway derives for these same companies?

A. Dr. Hadaway used a dividend yield of 4.54% in his DCF analysis. His dividend yield was developed by comparing an estimate of dividends for 2006 with recent stock prices for each of the 29 companies. [See, e.g., Hadaway Schedule SCH-9, p. 2]

Q. Could you now discuss the growth rate you used in your DCF analysis?

A. Yes. Since growth is a multidimensional phenomenon, no single variable proves adequate in describing a firm's growth, or investor expectations concerning that growth. The historical growth statistics vary widely, depending upon the type of growth measured and the period chosen. Therefore, I have examined the historical pattern of growth in dividends, earnings, and book value for these 29 electric utilities which are presented in Schedule 5.

During recent years, many of these 29 electric companies have cut their dividends.

For example, Alliant consistently paid total annual dividends of $2.00 per share from 1997 through 2002, then reduced them to $1.00 in 2003. Similarly, American Electric paid total annual dividends of $2.40 per share from 1995 through 2002, then reduced them to $1.65 and $1.40 in 2003 and 2004, respectively. Dusquesne Light, NiSource, Puget Energy, Westar and Xcel have made similar reductions in their dividends in recent years.

On average, the 29 companies reduced dividends by 0.2% from 2002 to 2004, and by 2.5% from 2001 to 2003. Similarly, dividends were reduced by an average of 0.3% from 2000 to 2004, and by 1.3% from 1999 to 2003. Dividends declined by 1.0% from 1998 to 2004.

Some might argue that historic growth in dividends is the best single indicator of future growth in dividends. While there is some merit to this view, historic dividend growth is not always a good indicator of future dividend growth, particularly over the very long term future – which is what is relevant in a DCF analysis. Firms are not under any compulsion to pay out any particular portion of their earnings. To the contrary, they are free to modify the pace at which they increase their dividends, although they may be compelled to reduce dividends if earnings are not sufficient to support the dividend.

However, investors do not simply look at the historical rate of dividend growth in valuing stocks. To the contrary, investors recognize that growth is a dynamic process, which responds to changes in industry conditions, and the underlying financial health of each firm. In particular, investors realize that a firm with a low dividend payout and low rate of dividend growth may be reinvesting a large portion of its earnings in the firm, and this should ultimately benefit investors through increased earnings, higher stock prices,

and (perhaps) higher dividends in future years.

Q. Have you attempted to do an alternate analysis that places less emphasis on periods in which dividends fluctuated drastically?

A. Yes. The purpose of reviewing historical growth rates is to gain insight into the growth rates that investors can reasonably expect in the future. Hence, I have performed an alternative analysis that excludes from consideration year to year dividend changes of greater than 10%. The effect of this procedure is to remove extreme swings in the dividend rate, particularly sudden dividend reductions. In effect, this method removes the "outliers" or extreme values, without removing all of the data for that particular firm (unlike the procedure used by Dr. Hadaway in selecting these 29 firms from the group of 61 firms he started with).

The results of this alternative approach are shown on Schedule 6. As shown, for the 29 companies, dividends increased at an average annual rate of 2.0% from 2002 to 2004, and 1.7% from 2001 to 2003. Similarly, under this approach, dividends increased at an average annual rate of 1.7% during the five year period from 2000 to 2004, 1.8% during the earlier five year period from 1999 to 2003 and 1.9% during the seven year period from 1998 to 2004.

Q. Can you now discuss your review of historical growth in earnings for the 29 companies?

A. As shown on Schedule 7, from 2002-2004, earnings for the 29 electric companies increased by an annual average of 2.4%. From 2001 to 2003, earnings increased by 3.7%

per year. From 2000 to 2004, earnings increased by just 0.8%. During the immediately prior five year period (1999-2003) earnings grew by 1.5%. During the seven year period 1998 to 2004, earnings grew by an average annual rate of 1.3%.

As with dividends, I have prepared an alternative analysis of earnings growth, in which I exclude instances in which earnings have increased or decreased by more than 10% from one year to the next. The results of this analysis are shown on Schedule 8. As shown, under this approach, from 2002-2004, earnings for the 29 electric companies increased by an annual average of 1.0% From 2001-2003, earnings increased by 1.5% per year. Over the five year period from 2000-2004, earnings increased by 1.6%. During the immediate prior five year period (1999-2003) earnings grew by 1.9%. During 1998-2004, earnings grew by an average annual rate of 2.0%.

Q. All of these growth rates are for the recent past. Is there other historical data that can help illuminate the long term growth prospects for these firms?

A. Yes. For instance, I examined growth in book value for the 29 electric utilities. Book value is an important indicator of the fundamental earnings power and value of a regulated firm. Among other reasons, book value is closely related to the amounts which are likely to be allowed in the firm's rate base in the event of a rate proceeding. In general, if book value has been growing, investors can anticipate growth in earnings and dividends in the future, even if dividends and earnings have been stagnant, or declining, in the recent past.

As shown on Schedule 9, book value grew by an average annual rate of 5.1% for these 29 firms during the three year period 2002-2004. During the prior three year period

of 2001-2003, book value grew by an average rate of 1.1%. For the five year period 2000-2004, book value grew by an average annual rate of 1.7%. For the prior five year period 1999-2003, book value grew by an average rate of 1.4%.

I also prepared an analysis in which I excluded instances in which book value increased or decreased by more than 10%. The results of that analysis are shown on Schedule 10. Under this approach, for the period 2002-2004, book value grew by an average annual rate of 3.2%. For the period 2001-2003, book value also grew by an average rate of 3.2%. For the period 2000-2004, book value grew by an average annual rate of 3.0%. For the period 1998-2004, book value grew by an average rate of 2.3%.

Book value closely tracks the underlying growth in equity capital per share (primarily due to reinvested earnings), and it therefore provides an indicator of the long term prospects for both earnings and dividends per share. As well, in the case of rate base regulated companies, book value is conceptually related to the process used in developing a firm's revenue requirements, and thus growth in book value is an indicator of the firm's long term future earnings and dividend growth potential.

Q. Taking investors' future expectations into consideration, what growth rate did you determine would be appropriate for use in your DCF analysis?

A. I selected a long term growth rate of 3.0% to 3.5% for use in my DCF analysis, despite the fact that during recent years these firms' dividends have generally grown at a somewhat lower average rate.

The 3.0% to 3.5% growth rate used in my DCF analysis is similar to – but somewhat greater than – the historic rates of growth in dividends, earnings and book

value that were experienced during 2002-2004 and 2002-2002.

The average annual growth in dividends was in the vicinity of 1.6% to 2.0% during all of the three, five and seven year time periods ending in 2002, 2003 and 2004, after removal of outliers. Similarly, the average annual growth in earnings ranged from 1.3% to 3.7% in all but one of the three and five year periods ending in 2002, 2003 and 2004. After removal of outliers, the earnings growth rates fall in an even tighter range. After removal of outliers, during all but one of the three, five and seven year periods ending in 2002, 2003 and 2004 earnings growth averaged between 1.5% and 2.5%. Finally, the average annual growth in book value per share ranged from 1.0% to 2.2% in all but two of the three, five and seven year periods ending in 2002, 2003 and 2004. After removal of outliers, the book value growth rates fall in a narrower range: during all but one of the three, five and seven year periods ending in 2002, 2003 and 2004 earnings growth averaged between 1.4% and 3.2%.

In general, it is fair to say that the growth range I selected for use in my DCF analysis is consistent with, but somewhat higher than, the average historic growth rates experienced by the 29 electric companies during 1995-2004. While it may seem anomalous to choose a growth rate that differs from the historical data, in this instance I believe it is appropriate. Bear in mind that it is investor *expectations* about the future, not past results, that are most relevant in developing a DCF analysis. In my opinion, a 3.0% to 3.5% growth rate fairly reflects the average investor's expectations for long term dividend growth for these 29 electric companies, despite the fact that this range is somewhat higher than most of the recent historic growth data.

Q. How does the DCF growth rate you used compare to the growth rate used by Dr. Hadaway?

A. Dr. Hadaway uses three separate DCF analyses: a "traditional constant growth" model, a "long term GDP growth" model, and a "two stage growth" model. [See, Hadaway Schedule SCH-9] To develop a growth component under his "traditional constant growth" approach, he relies primarily on analysts' estimated future earnings, dividends and book value, and historical growth in GDP. This approach produces a short term future growth rate of 4.98%. [Id., p. 2] However, Dr. Hadaway places no weight on this approach, since the overall ROE derived from it is significantly less than the ROE derived from his Risk Premium analysis. [Hadaway Direct, pp. 6-7]

Under his second approach, Dr. Hadaway uses historical GDP growth as his DCF growth component. He estimates historical GDP growth of 6.6%. [Hadaway Schedule SCH-9, p. 3]

Under his "two stage growth" approach, Dr. Hadaway derives an internal rate of return from estimated dividends over the next 150 years. Dr. Hadaway uses the analysts' projected dividend amounts for the first 5 years, and estimates dividends for the remaining 145 years using his 6.6% historical GDP growth estimate. [Id., p. 4]

Q. Do you think Dr. Hadaway's approach is reasonable?

A. No. I disagree with all three of the methods he used to estimate the dividend growth rate. First, it is not appropriate to rely on financial analysts' near term growth dividend projections, to the total exclusion of actual historical growth data. Second, there is no empirical or logical basis for using nominal growth in GDP as a basis for arriving at a

dividend growth rate to use in the DCF approach. Historically, these firms' dividends have not been closely correlated with GDP, and there is no basis for assuming that they will track GDP in the future.

Financial analysts' estimates of near-term future dividends show, at most, what certain stockbrokers and other analysts are anticipating will occur in the future. In this regard, it is important to realize that the DCF method requires use of long term growth expectations – something that cannot be gleaned from the short term dividend and earnings estimates published by financial analysts. Even if these financial analysts were infallible (they are not), this would not answer the question of what dividend growth the average investor, or the market as a whole, expects over the long term. Not all investors agree with Value Line or Zacks, or even pay much attention to their projections. Furthermore, these analyst projections are typically limited to the near future, yet the DCF method requires use of a long term growth rate – as indicated by Dr. Hadaway's use of a 150 year period in a portion of his analysis. The theory that underlies the DCF method requires consideration of growth for at least 30 years into the future – not just the handful of years considered by financial analysis.

Similarly, I strongly disagree with Dr. Hadaway's heavy reliance upon historical growth in GDP as the predominant basis for estimating future dividend growth for these 29 electric utilities. Throughout his DCF analyses, Dr. Hadaway uses the "average of GDP growth during the last 10 year, 20 year, 30 year and 40 year growth periods". [Id., p. 5] It appears that Dr. Hadaway is focusing the nominal change in GDP, which averaged 6.77% per year from 1930 to 2004; a substantial portion of this growth measure

represents the impact of inflation over this lengthy time period. Yet, there is no evidence that the dividends paid by these firms have ever been correlated with GDP growth in the past, or that they will be correlated with GDP in the future. Simply stated, his selection of historical GDP growth for his DCF approach is entirely arbitrary and inconsistent with the theoretical underpinnings of the DCF approach.

Q. What would happen if Dr. Hadaway had used the real growth in GDP, rather than nominal growth?

A. The annual percentage change in Real Gross Domestic Product averaged 3.55% from 1930 to 2004. [BEA, National Economics Accounts, Sept. 29, 2005] Substituting this measure of GDP growth in Dr. Hadaway's DCF analyses results in ROE estimates of 8.7%, 8.1% and 8.0% for his "traditional constant growth" model, "long term GDP growth" model, and "two stage growth" models, respectively.

Q. What conclusions have you drawn from your market analysis regarding the appropriate cost of equity capital for use in this proceeding?

A. I have reached the conclusion that the Company's cost of equity falls within a range from 8.4% to 9.9%. This conclusion reflects my analysis of the full spectrum of market data discussed above, but I primarily relied on my discounted cash flow analysis of investors' required returns for the 29 electric utilities. As noted earlier, my DCF analysis included a dividend yield of 5.0% to 5.5% and a growth rate of 3.0% to 3.5%. Combining these

figures, I estimated investor return requirements for the 29 electric companies to be 8.0% to 9.0%. Based upon my evaluation of the Ibbotson data discussed earlier, I expanded the range slightly, to 8.0%, to 9.5%. The final cost estimate – 8.4% to 9.9% – was developed by factoring up my estimate of investor return requirements by 0.4%, to cover the cost of issuing stock – an allowance I made rather generously, by applying it to the entire equity amount, even though issuance costs are not incurred for total equity (e.g., not for reinvested earnings).

Conclusions and Recommendations

Q. Let's turn to the last section of your testimony. You have derived different estimates of the Company's cost of equity by using comparable earnings and market approaches. Is this inconsistent?

A. No. It is not inconsistent, because I derived these estimates by methods that are theoretically and practically distinct. It would be unrealistic to expect identical results from the market and comparable earnings approaches, considering the differences between them. Nevertheless, the independent application of the two methods has resulted in reasonably similar conclusions: 10.0% to 11.5% under the comparable earnings approach, and 8.4% to 9.9% under the market approach.

Q. Considering the results of both approaches, your equity cost estimates cover a rather wide range. Can you be more specific in your recommendation?

A. Yes. I recommend the Commission primarily focus on the central portion of each range, rather than the extreme values. More specifically, if the Commission were to give equal weight to both methods, I would recommend using 9.95% as the best estimate of the cost of equity. If the Commission wants to place greater weight on the market approach – consistent with its typical practice in other proceedings, I would recommend using 9.75% as the best estimate of the cost of equity.

Q. What is your recommendation concerning the Company's overall allowed rate of return?

A. For the reasons discussed earlier in my testimony, I recommend accepting the Company's proposed 6.7% long term debt cost rate for MPS and 7.96% long term debt cost rate for LP. However, I recommend giving 67.3% weight to the debt component and just 32.7% weight to the common equity component. Using a 9.95% cost of equity estimate, the overall cost of capital for MPS is estimated to be 7.76%, as shown at top of Schedule 11. Using the same procedure results in an overall cost of capital estimate for LP of 8.61%. If the Commission were to conclude that it is more appropriate to use the same cost of capital for both operating divisions, these estimates can be combined based on the relative levels of net plant in service, resulting in a composite overall cost of capital of 7.90%

Q. Does this conclude your direct testimony, which was prefiled on October 14, 2005?

A. Yes.