Exhibit No.:
Issues: Capital Costs
Witness: Donald A. Murry
Sponsoring Party: Aquila Networks-MPS

Case No.: ER-2004-0034

Before the Public Service Commission
of the State of Missouri

Rebuttal Testimony

of

Donald A. Murry

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI
REBUTTAL TESTIMONY OF DONALD A. MURRY, PH.D.
ON BEHALF OF AQUILA, INC.
D/B/A AQUILA NETWORKS-MPS
CASE NOS. ER-2004-0034

Q. WHAT IS YOUR NAME?

A. My name is Donald A. Murry.

Q. ARE YOU THE SAME DONALD A. MURRY WHO FILED DIRECT TESTIMONY PREVIOUSLY IN THIS PROCEEDING BEFORE THE MISSOURI PUBLIC SERVICE COMMISSION ("COMMISSION")?

A. Yes, I am.

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A. I have prepared rebuttal testimony in response to the direct testimony of Commission Staff ("Staff") witness, Mr. David Murray, and the Office of Public Counsel ("Public Counsel") witness, Mr. Mark Burdette, in the cases involving Aquila Networks-MPS-Electric also referred to as "Aquila" or the "Company."

Q. WHAT IS THE NATURE OF YOUR REBUTTAL TESTIMONY OF STAFF WITNESS DAVID MURRAY?

A. My rebuttal testimony addresses the general inadequacy of Mr. Murray's recommendation for Aquila Networks and the apparent reasons for his reaching an inordinately low recommended return. His recommendation is particularly surprising because the results of his own analysis indicated the inadequacies of his recommendation. It is clear from his testimony that he ignored important findings

from his analysis when he chose the recommendations that he put forward. In short, his recommendations regarding the overall cost of capital, if adopted by the Commission, will imperil the financial health of the Company, and he had clear evidence of this from his reported analysis.

Q. WHAT OTHER GENERAL COMMENTS DO YOU HAVE CONCERNING MR. MURRAY'S TESTIMONY?

A. Beyond ignoring the signals that his recommended return is financially inadequate, his analysis has major flaws. For example, Mr. Murray's analysis has a number of analytical and methodological problems that appear to have led to his unsubstantiated conclusions and flawed recommendations. The most obvious problem is his use of the capital structure of Aquila, Inc. when more accurate data regarding the capital structures of the Missouri electric affiliates are available. Also problems with his Discounted Cash Flow ("DCF") analysis render his results unreliable. This is apparent from a simple investigation of the mechanical errors and his erroneous assumptions. Fortunately, the mistakes in his Capital Asset Pricing Model ("CAPM") analysis are more readily apparent. This transparency is useful because it means that one can correct these errors and recalculate his CAPM estimate. He also develops a Risk Premium analysis.

Q. PLEASE DISCUSS IN GREATER DETAIL THE PROBLEMS WITH THE CAPITAL STRUCTURE THAT MR. MURRAY USED IN HIS ANALYSIS.

A. He stated, page 20, lines 16-17, of his direct testimony that he used the parent company's, Aquila, Inc.'s, capital structure in this proceeding, "Because the debt and equity are generated from the parent company...." This position has two

major inconsistencies. First, the capital of the parent company, Aquila, Inc. includes the capital supporting the non-utility businesses and international operations of Aquila, Inc. These assets do not support the Missouri electric utility operations, and the Company has specifically stated its intentions, and taken actions, to return to the core utility business. Consequently, Aquila, Inc.'s capital structure does not represent the capital used to support the services provided by Aquila Networks MPS to Missouri electric customers in the past. Furthermore, it is not consistent with the capital structure that will support the assets of Aquila Networks MPS during the period when the rates set in this proceeding are in effect. Second, this capital structure is inconsistent with the principle set forth by the Company in this rate application, namely to isolate and to protect the utility ratepayers from the risks and costs of the non-regulated operations of Aquila. Using Aquila, Inc.'s capital structure with its higher financial risk violates this straightforward regulatory principle, as well.

Q. ARE YOU AWARE OF ANY OTHER REASONS WHY THE PARENT'S CAPITAL STRUCTURE SHOULD NOT BE USED AS A SURROGATE FOR THE CAPITAL STRUCTURE OF AQUILA NETWORKS MPS?

A. Yes. Superior information exists that more closely links the costs of capital used for serving the Missouri customers to the assets used to serve the customers. This is the divisional capital structure used by Aquila Networks MPS that takes into account the relevant risks of these utility operations

and was predicated on electric utility industry standards. Moreover, contrary to Mr. Murray's recommended use of Aquila, Inc.'s capital structure, the Company's divisional capital structure isolates the utility ratepayers from the risks of the non-utility operations. Use of the parent company's capital structure exposes ratepayers to higher financial risk.

Q. YOU STATED THAT THE DIVISIONAL CAPITAL STRUCTURE WAS SUPERIOR TO THE AQUILA, INC. CAPITAL STRUCTURE FOR THIS CASE. ARE THERE ANY OTHER REASONS THAT YOU BELIEVE THAT THIS IS THE CASE?

A. Yes, there are. Aquila has maintained a capital allocation, or assignment, process since 1988 that was designed to separate the capital costs of the divisions from the other operations of Aquila, Inc. This is especially important because of the significant international operations, the non-regulated operations and the utility operations in other states. The target capital structure for the electric operating divisions was consistent with realistic targets at that time, and as I indicated in my direct testimony, it is still appropriate today. The capital structure of MPS was known when it was blended into the parent corporation and the process tracks capital changes. The resulting capital structure is superior to either the use of Aquila, Inc.'s capital structure or a purely hypothetical capital structure.

Q. WHEN, IN YOUR OPINION, IS A HYPOTHETICAL CAPITAL STRUCTURE APPROPRIATE FOR UTILITY RATEMAKING PURPOSES?

A. Analysts generally recognize that a hypothetical capital structure is appropriate for ratemaking when the actual capital structure of a regulated utility is indeterminate or not representative of capital used to support the operating utility. It can serve to more accurately estimate the costs of supporting the utility as well as protecting the customers from the impact of costs from non-utility operations. For example, when applying the "rule" concerning use of the actual capital structure, Bonbright, *et.al.*, in *Principles of Public Utility Rates*, page 309, advocate that

> ... if the existing capital structure is clearly unsound or is extravagantly conservative, the rule may need to be modified in the public interest. Actual cost of capital may then be disqualified in favor of legitimate cost. The diversification of utilities into nonregulated activities in recent years is one potential area where the rule may have to be modified. The firm's overall capital structure may not be reflective of a capital structure appropriate to the financing of a public utility as a consequence of risk differentials between regulated and nonregulated activities.

This statement characterizes Aquila's circumstances in this proceeding.

Q. HAS THE STAFF ADDRESSED THIS CONCEPT AS IT PERTAINS TO AQUILA?

A. Yes. The Staff, in a report to the Commission in December 2002, at page 21, specifically summarized the merits of using a hypothetical capital structure for Aquila, Inc. The Staff in that report stated as follows:

> To prevent or mitigate Aquila's higher cost of capital from being charged to Missouri ratepayers, the Commission can order the use of a hypothetical capital structure for ratemaking purposes to determine the appropriate mix of debt and equity that is appropriate for MPS and /or L&P. This capital structure *would not be dependent on* the capital structure currently in effect for Aquila. [Emphasis added].

Q. HAS THE COMMISSION EVER REJECTED THE USE OF AQUILA'S CAPITAL STRUCTURE FOR RATEMAKING PURPOSES?

A. Yes. In its Report and Order on Remand in Case No. ER-93-37, page 38, the Commission rejected the use of the parent's capital structure for UtiliCorp, now Aquila, and stated:

> Because MoPub must raise capital through UtiliCorp, the use of UtiliCorp's consolidated capital structure may be a valid approach. However, this is not the best approach for this case because UtiliCorp is comprised of both operating divisions and unregulated subsidiaries, and its capital structure reflects that mix.

The Commission went on to affirm, page 38, that an assigned capital structure would insulate the Missouri ratepayers from the impacts from the unregulated affiliates.

> Use of MoPub's assigned capital structure will help insulate it to some extent from UtiliCorp's unregulated subsidiaries, and the assigned capital structure is actually analogous to the capital structures of comparable electric companies.

Q. HAVE THE OPERATING DIVISIONS OF AQUILA, INC., INSULATED THE MISSOURI RATEPAYERS FROM THE IMPACTS OF THE COSTS OF THE UNREGULATED AFFILIATES?

A. Yes. The debt costs of the Missouri operating divisions are capped at the debt costs of a BBB utility. Also, in my direct testimony I developed a recommended cost of common stock equity based on the earnings of a group of healthy electric utilities with similar financial characteristics as Aquila's Missouri operating divisions.

Q. SHOULD MR. MURRAY HAVE RECOGNIZED THAT HIS RECOMMENDED CAPITAL STRUCTURE IS INCONSISTENT WITH

THE PRINCIPLES OF LINKING CAPITAL COSTS TO THE RISKS OF THE UTILITY OPERATIONS?

A. Yes, I think that he should have seen how his recommendation was inconsistent with the companies that he used as comparable companies. The inconsistency, or mismatch, in his recommended return on common stock and the recommended common stock equity ratio is obvious, and his own analysis shows this. Apparently, he has ignored the financial risk associated with his capital structure recommendation.

Q. CAN YOU EXPLAIN HOW MR. MURRAY'S CAPITAL STRUCTURE AND HIS RETURN RECOMMENDATION ARE A MISMATCH?

A. Mr. Murray selected a group of comparable companies with very low common stock equities (averaging 36.77 percent), which is relatively close to the common stock equity of the parent company, Aquila, Inc., that he recommended for ratemaking purposes for this proceeding (35.31 percent). I have reproduced columns (1) and (5) from his Schedule 20 in my Rebuttal Schedule DAM -1, which compares the actual common equity returns of his comparable companies with his recommended returns for Aquila Networks L&P and Aquila Networks MPS. The common equity level that he recommends for

Aquila Networks MPS in this proceeding is similar to the common equity of these companies. However, the estimated 2003 return on common stock equity for his group of comparable companies averaged 12.83 percent.

Q. AS AN ANALYST, WERE YOU SURPRISED THAT MR. MURRAY'S COMPARABLE COMPANIES EARNED SUCH A HIGH COMMON EQUITY RETUURN IN TODAY'S, THE 2003, MARKET?

A. That companies with these low equity ratios, or high financial risk, have such high common equity returns is not surprising. However, what is surprising is Mr. Murray's recommended return for Aquila Networks MPS (from 8.64 percent to 9.64 percent) which is clearly way out of line and inconsistent with the actual returns of his comparable companies, and he did not attempt to reconcile this obvious inconsistency (See Mr. Murray's Schedule 20).

Q. YOU MENTIONED PROBLEMS WITH MR. MURRAY'S ANALYSIS. WHAT ARE THESE PROBLEMS?

A. From an initial review of his analysis, it is obvious that Mr. Murray has selected a group of companies as surrogate "comparable companies" to determine the cost of capital to assign to a small operating utility division , Aquila Networks MPS that is, in fact, not comparable at all.

Q. PLEASE EXPLAIN.

A. As his Schedule 11 indicates, he accepted companies that had a capitalization of $5 billion as comparable to these two small utilities. This step in his analysis probably was compounded by other analytical missteps. The first of these was the inclusion of two utilities in his analysis, DQE, Inc. (Duquesne Light Holdings) and IDACORP, as comparable companies that are inappropriate for ratemaking purposes.

Q. WHY ARE THESE COMPANIES INAPPROPRIATE?

A. These companies have decreased their dividend payouts because of financial exigencies in recent years, and as a result, they are not representative of healthy electric utilities. Consequently, they are useless as comparative utility standards in this proceeding. This is so because one cannot draw useful inferences about returns required for a healthy electric utility by looking at the performance of an unhealthy utility. Because of their financial difficulties, the earnings and dividends of these utilities are not reliable standards for ratemaking, and they are entirely inappropriate as comparable utilities in an analysis.

Q. ARE THERE OTHER PROBLEMS WITH MR. MURRAY'S ANALYSIS?

A. Yes. Mr. Murray makes several analytical mistakes, some of which are very basic mistakes, in his DCF analysis. These diminish the reliability of his analysis and reduce its results to uselessness. In addition, as stated previously, his CAPM analysis has obvious mistakes.

Q. OTHER THAN THE PROBLEMS THAT YOU MENTIONED, ARE THERE OTHER REASONS TO AVOID SELECTING LARGE COMPANIES AS COMPARABLE COMPANIES IN AN ANALYSIS OF SMALLER COMPANIES?

A. Yes, analysts agree that small companies are normally more risky than large companies because of lower economies of scale and scope in operations and less liquidity. Smaller companies have a narrower, less diverse customer base with a smaller geographic market. They also have more limited access to capital markets and relatively higher financial costs. Mr. Murray provides no evidence that he makes any adjustment for this risk differential.

Q. YOU STATED THAT MR. MURRAY HAS INCLUDED UTILITIES THAT HAVE REDUCED THEIR DIVIDENDS BECAUSE OF FINANCIAL EXIGENCIES AMONG HIS COMPARABLE ELECTRIC UTILITY COMPANIES. PLEASE EXPLAIN WHY THIS IS IMPORTANT?

A. This is important in this case because these utilities are not appropriate for the use as comparable companies, or standards, in a regulatory proceeding. As I said, both DQE and IDACORP have reduced their dividends recently because of significant financial exigencies, and a dividend reduction will impact common equity investors immediately.

Q. IS THERE EVIDENCE THAT THIS IS THE CASE WITH DUQUESNE LIGHT?

A. *Value Line* said about Duquesne Light, "On balance, in our view, DQE's potential stock returns to 2006-2008 do not fully compensate for all risk." Further, *Value Line* stated on June 6, 2003, "The typical utility investor will probably want to look elsewhere." Duquesne Light Holdings has been unwinding its unregulated ventures as well as trying to reach a settlement with the Internal Revenue Service about past tax payments. These non-utility factors are not appropriate utility ratemaking standards.

Q. WHAT FINANCIAL DISTRESS HAS IDACORP EXPERIENCED THAT MR. MURRAY SHOULD HAVE NOTED?

A. IDACORP has recorded losses associated with its non-utility operations, which have affected its financial condition. *Value Line* reported that, "The annual dividend was reduced from $1.86 to $1.20 a share, effective with the December

payment. The action was taken because profits didn't cover the disbursement in 2002 and probably won't this year or next." It is illogical to use the losses from non-utility operations as a standard for setting an allowed return for a regulated utility.

Q. SHOULD MR. MURRAY HAVE KNOWN THAT THESE COMPANIES WOULD NOT BE USEFUL AS REGULATORY STANDARDS FOR RATEMAKING?

A. Yes. In the case of these two utilities, the reductions of dividends were clear signals that they were under severe financial stress and not good candidates as comparative standards in a rate proceeding. In fact, these well-known financial circumstances were covered in the *Value Line* sources that he cited, and this should preclude any analyst from using them as ratemaking standards. Their use would bias the results of any analysis and make them unreliable.

Q. HOW DID USING THESE TWO COMPANIES AFFECT MR. MURRAY'S ANALYSIS?

A. Mr. Murray's Schedule 14 illustrates how he used the financial stress of these companies in his mechanical averaging process to offset the expectations of investors of returns in healthy electric utilities. In the case of DQE, he averaged the historical declines in earnings, dividends and book values of –7.19 percent to offset the expected future growth in earnings of three different analytical groups, i.e., IBES median (4.00 percent), Standard & Poor's earnings per share (4.00 percent) and Value Line earnings per share (7.50 percent). Although all of these analysts agree that DQE has turned around its past financial problems, Mr.

Murray, without any justification, reported that investors expect "growth" to decline 1.01 percent. This decrease is the growth rate that he used in his DCF analysis. He does not explain whether this "growth" refers to a growth rate in earnings per share, dividends or some combination of the two.

In the case of IDACORP, Mr. Murray averaged together historical growth of earnings, book values and dividends and reports a historical growth rate of 0.10 percent. Then he averaged this average with a predicted –11.0 percent decline in earnings and two growth rates of 7.00 percent. He reported a measured "growth" of IDACORP of only 0.55 percent.

Q. WHAT ARE THE CONSEQUENCES OF MR. MURRAY'S CALCULATIONS?

A. It is apparent that by mechanically averaging the financial characteristics of these utilities under stress into his DCF analysis as regulatory standards, Mr. Murray produced unreliable, biased estimates of the cost of capital of an electric utility. In fact, these calculations provide no basis for concluding the necessary return for a healthy standalone electric utility.

Q. WAS MR. MURRAY AWARE THAT HE USED COMPANIES THAT WERE UNDER SEVERE FINANCIAL STRESS AS REGULATORY STANDARDS IN HIS ANALYSIS?

A. It appears that Mr. Murray either did not know or did not use the financial health of his comparable companies as a criterion. For example, he was asked the following question in Data Request Number 0627, "Is it Mr. Murray's opinion that a regulatory body should base its allowed return on the performance of a

comparable company in financial stress?" His reply, in its entirety, was the following: "It is Mr. Murray's opinion that a regulatory body should base its allowed return on a comparable group of companies when a company-specific analysis cannot be performed."

Q. IS IT OBVIOUS THAT A UTILITY COMPANY THAT CUTS ITS DIVIDEND IS LIKELY IN FINANCIAL STRESS?

A. Although financial stress is not the only reason that a company will cut its dividend, most boards of directors will try to support a dividend to maintain a common stock's attractiveness to investors and to avoid increasing the cost of raising equity capital. In other words, a cut in dividends is a signal to any analyst to look behind this reduction for its cause.

Q. DID MR. MURRAY IDENTIFY THE REASONS THAT DQE AND IDACORP RECENTLY CUT THEIR DIVIDEND, WHICH MADE THEM UNRELIABLE STANDARDS FOR RATEMAKING PURPOSES?

A. It is not clear that Mr. Murray even considered the ability to pay a dividend as an indicator of a healthy utility. It was not a criterion for selecting comparable companies that he identified in his Schedule 11. He was asked the following question in Data Request Number 0627, "Is it Mr. Murray's opinion that if a company reduces its dividend, this may be an indicator that a company is under some financial stress?" He replied, as follows:

> A reduction in dividend can be an indicator of many things with one of them being the possibility that the company needs to conserve cash for debt service payments because of financial difficulties. Another indicator may be that a company wants to conserve cash for purposes of investing in attractive investment opportunities in the future. Yet another indicator may

be that the company may want to conserve cash in order to improve its creditworthiness regardless of whether it is having financial difficulties.

After stating on page 24, line 24 of his direct testimony that one of the assumptions underlying his DCF analysis was a "Constant growth in cash dividends," his response to this question was rather surprising.

Q. WHY IS THIS THE CASE?

A. His response to the data request implies that companies readily cut their dividends, which of course, violates this assumption underlying his DCF analysis.

Q. ARE THERE OTHER PROBLEMS WITH MR. MURRAY'S GROUP OF COMPARABLE COMPANIES?

A. Yes. He identified the bond rating of DPL as BBB. Instead, DPL's bond rating should be identified as BB, which is not investment grade. Although DPL did not cut its dividend, it took a substantial after tax charge to earnings following the settlement of a court case charging security law violations and a writedown to assets because of a devaluation of the Argentina peso. These non-utility impacts are also not representative of financial characteristics of a healthy electric utility.

Q. YOU STATED PREVIOUSLY THAT MR. MURRAY COMMITTED ANALYTICAL ERRORS THAT AFFECTED HIS DCF ANALYSIS. WHAT ERRORS WERE YOU REFERRING TO IN THIS STATEMENT?

A. Throughout Mr. Murray's DCF methodology he averaged averages. This substitutes a mindless set of calculations and averages for an analysis of the market data and masks the essence of the DCF analysis, which relies on market information to infer investors' discounted values of anticipated returns. Mr. Murray's series of averages simply hides from analytical view and subsequent

interpretation the various market valuations. It substitutes cursory mechanical calculations and averages for serious analytical interpretation. Consequently, his formulistic calculations were reduced to meaningless data manipulations.

Q. WHAT WERE YOU REFERRING TO WHEN YOU STATED THAT MR. MURRAY MADE ERRORS IN HIS CAPM CALCULATIONS?

A. Mr. Murray made three obvious mistakes is his CAPM analysis. Each caused him to underestimate the cost of common stock using this method. Taken together, these errors are significant. It is important, however, that they are readily identifiable and correctable.

Q. CAN YOU EXPLAIN THESE ERRORS IN THE CAPM ANALYSIS THAT ARE IMPORTANT, BUT SUBJECT TO CORRECTION?

A. Yes. First, Mr. Murray used a negative risk premium to calculate his CAPM. This assumption is contrary to the basic theoretical construct of the CAPM and without any precedent or theoretical justification. At minimum, if Mr. Murray thought for some reason that the "risk premium" actually was negative, he should have explained why such a theoretical anomaly occurred. Second, he selected an incorrect risk premium from the source he cited. Apparently he erred by selecting the wrong number from the page that he cited as a reference. Third, he failed to make a recommended adjustment for empirical bias when the data that he used in his CAPM called for this adjustment. The authors of the data source that he cited recommended this correction, and he just ignored their recommendation.

Q. YOU SAID THAT MR. MURRAY USED A NEGATIVE RISK PREMIUM IN HIS CAPM ANALYSIS. PLEASE EXPLAIN THE SIGNIFICANCE OF THIS.

A. It is an illogical assumption, and it will lead to meaningless calculations. In his Schedule 17, Mr. Murray identified a short-term risk premium of -0.34 percent. However, a negative risk premium in a CAPM analysis is not logical. It implies that the investors in the common stocks of the analyzed companies, in this case Mr. Murray's comparable companies, believe that these common stocks are less risky investments than U.S. Treasury bonds.

Q. COULD YOU TELL IF MR. MURRAY INTENDED TO INTRODUCE THIS ILLOGICAL ASSUMPTION INTO HIS CAPM ANALYSIS?

A. This is not clear. In response to Data Request Number 0629, he stated, "Mr. Murray is not recommending that a negative risk premium be used in determining the required return on equity in a regulatory proceeding." However, from his calculations, as illustrated in Schedule 17, it is apparent that this is exactly what he did. In this schedule he shows the results of estimating a CAPM cost of equity (4.92% = 5.16% + (.72*-0.34%)). He also cites this 4.92 percentage at page 30, line 4 of his Direct Testimony. These calculations imply that a rational investor would pass up a virtually certain return of 5.16 percent from an investment in U.S. Treasury bonds in favor of a less certain, or more risky return, of 4.92 percent from an investment in the common stocks of his comparable companies. The illogic, or even silliness, of this assumption is even more apparent when one

recognizes that Mr. Murray's comparable companies include companies under severe financial stress.

Q. YOU STATED THAT MR. MURRAY SELECTED THE WRONG NUMBER FROM ONE OF HIS CITED SOURCES. CAN YOU EXPLAIN?

A. Yes. Mr. Murray did not select the correct number for a risk premium for his CAPM analysis from the source, Ibbotson Associates, which he cited in Schedule 17. He stated that the risk premium is 6.4 percent. In fact, the risk premium in the source that he cited is 7.0 percent. I have enclosed the appropriate table as my Rebuttal Schedule DAM -2.

Q. YOU STATED THAT MR. MURRAY IGNORED A METHODOLOGICAL RECOMMENDATION FROM ONE OF HIS SOURCES. PLEASE EXPLAIN.

A. Because of known biases in the data favoring large firms, Ibbotson Associates, which is the source that he used in his CAPM analysis, recommends making a size adjustment based on the market capitalization of the company when the data are used for a CAPM analysis. Ibbotson Associates, which he cited in this Schedule 17, even recommends the level of adjustment to compensate for this bias. Mr. Murray ignored the presence of this bias and Ibbotson Associates' recommended adjustment. This recommended change is also explained by Ibottson Associates in the attached schedule.

Q. YOU STATED THAT MR. MURRAY'S CAPM ANALYSIS WAS CORRECTABLE. DID YOU CORRECT THESE ANALYTICAL ERRORS AND RECALCULATE THE CAPM USING HIS METHODOLOGY?

A. Yes.

Q. WHEN YOU CORRECTED MR. MURRAY'S CAPM ANALYSIS, WHAT RESULTS DID HIS METHODOLOGY PRODUCE?

A. When calculated correctly, after correcting for these three errors, Mr. Murray's CAPM analysis produced an estimate of the cost of common stock for his comparable companies of 11.35 percent. Notably, the corrected CAPM produces a return on equity estimate of 13.68 percent for Aquila, Inc. I have shown these calculations using his methodology in Rebuttal Schedule DAM -3.

Q. YOU MENTIONED MR. MURRAY'S RISK PREMIUM ANALYSIS. ARE YOU OFFERING REBUTTAL TESTIMONY CONCERNING THIS CALCULATION?

A. No. Mr. Murray's risk premium analysis, albeit a rather general analysis, is indicative of the longer-term valuations of the common stock of his comparable companies. His risk premium analysis produced a result of 11.51 percent. It is notable that this risk premium result is very similar to the average CAPM calculation for his comparable companies.

Q. WHY DID YOU STATE THAT THE RESULTS OF MR. MURRAY'S TESTIMONY IMPERILED THE FINANCIAL CONDITION OF THE COMPANY?

A. His recommended capital structure and his recommended return together, as shown by his own interest coverage analysis, show that he disregarded his analysis of financial integrity in addition to ignoring sound financial practice.

Q. WHAT FINANCIAL INTEGRITY MEASURES DID MR. MURRAY DISREGARD?

A. He calculated before tax interest coverage ratios to test the range of his rate of return recommendation, and he reported these in his Schedule 21. However, he either dismissed these results or misinterpreted them.

Q. WHAT IS THE EVIDENCE THAT HE DISMISSED OR MISINTERPRETED HIS FINANCIAL INTEGRITY MEASURES?

A. I have reproduced interest coverages from column (3) of Mr. Murray's Schedule 20 and the Pre-Tax Interest Coverage which he calculated on Schedule 21 using his return recommendation and illustrated this comparison in Rebuttal Schedule DAM-4. It shows that the average Pre-Tax Interest Coverage of his comparable companies is 2.65. This calculation included a "0" interest coverage for IDACORP that he did not exclude when he calculated this average. As this schedule also shows, Mr. Murray's calculated coverages using his recommended return for Aquila Networks L&P and Aquila Networks MPS would only be in the range of 2.11 to 2.23 times, or way below the interest coverage ratios of his comparable companies.

Q. YOU STATED PREVIOUSLY THAT YOU WERE OFFERING TESTIMONY IN REBUTTAL OF PUBLIC COUNSEL WITNESS, MR. MARK BURDETTE, IS THAT CORRECT?

A. Yes. It is my understanding, however, that Mr. Burdette may no longer be a participant in this proceeding. As a consequence and to provide context to my

rebuttal testimony, I am attaching a copy of Mr. Burdette's verified direct testimony in this case as Rebuttal Schedule DAM – 5.

Q. PLEASE SUMMARIZE YOUR REBUTTAL WITH RESPECT TO MR. BURDETTE'S DIRECT TESTIMONY.

A. Mr. Burdette's selection of comparable companies was extremely weak methodologically. In addition, he used a calculation of the growth rate for use in his DCF method that is generally recognized by analysts to be analytical flawed. He adjusted his CAPM analysis arbitrarily because of a result that he judged to be an outlier. Additionally, he rejected the Company's proposed capital structure although it is consistent with the capital structure of the companies that he chose as comparable companies to set a return in this proceeding. His proposed return on common equity also is out of line with companies in the industry with comparable common equity ratios. Finally, his proposed interest coverage ratio does not match those of his comparable companies.

Q. PLEASE DISCUSS YOUR CONCERNS ABOUT MR. BURDETTE'S COMPARABLE COMPANY SELECTION.

A. He selected four companies to include in his group of companies as comparable, but two of these are directly affected by a single, very concentrated financial impact. These companies are Central Vermont Public Service and Green Mountain Power, both of which are Vermont utilities. More important, both of these companies are still recovering from the financial setback of a single action, the Vermont Joint Operating Agreement and subsequent long-term contracts with Hydro-Quebec. Because half of the data that he used to develop an analysis for

the return of these Missouri operating divisions rely on these two Vermont companies, his analysis is methodologically very weak. Stated differently, because Mr. Burdette's analysis is dominated by the financial statistics of a narrow slice of the electric utility industry, which is so geographically and operationally remote to Missouri, it measures operational risks and financial costs of Missouri utilities only by rare coincidence.

Q. WHAT DCF METHOD DOES MR. BURDETTE USE THAT HAS SERIOUS ANALYTICAL FLAWS?

A. Mr. Burdette uses a method called the "Sustainable Growth" or "Plowback Growth" method.

Q. IS MR. BURDETTE'S USE OF THE SUSTAINABLE GROWTH METHOD FOR HIS DCF CALCULATION RECOMMENDED BY THE FINANCIAL LITERATURE?

A. No. The economic literature recognizes that the sustainable growth (or plowback) method is unsound both mathematically and empirically.

Q. CAN YOU PROVIDE AN EXAMPLE OF THE CRITICISM OF THIS METHOD RECOGNIZED IN FINANCE LITERATURE?

A. Yes, Roger Morin's *Regulatory Finance: Utilities' Cost of Capital,* pages 161-162, is a good reference because it addresses the use of the method in regulation specifically. For example, Dr. Morin identified three problems associated with using the sustainable growth method. He points out the difficulty in using the method to accurately estimate growth in a DCF analysis, as follows:

> "...it may be even more difficult to estimate what *b, r, s,* and *v* investors have in mind than it is to estimate what *g* they envisage. It would appear

> far more economical and expeditious to use available growth forecasts and obtain *g* directly instead of relying on four individual forecasts of the determinants of such growth…"

He adds that it possesses a serious conceptual flaw, which he explains, as follows:

> "Second, there is a potential element of circularity in estimating *g* by a forecast of *b* and ROE for the utility being regulated, since ROE is determined in large part by regulation. To estimate what ROE resides in the minds of investors is the equivalent to estimating the market's assessment of the outcome of regulatory hearings…"

Finally, he notes that the sustainable growth method is inferior to other more direct methods for measuring growth in a DCF, and that the financial literature has demonstrated this. He states, as follows:

> "Thirdly, the empirical finance literature demonstrates that the sustainable growth method of determining growth is not as significantly correlated to measures of value, such as stock price and price/earnings ratios, as other historical growth measures or analysts' growth forecasts…
>
> "In summary, of the three proxies for the expected growth component of the DCF model, historical growth rates, analysts' forecasts, and the sustainable growth method, the latter is the least desirable…"

Q. HOW DOES MR. BURDETTE ADJUST HIS CAPM TO CONTROL FOR A RESULT HE CONSIDERS TO BE A STATISTICAL OUTLIER?

A. He recalculated his CAPM averages without CLECO Corporation, which he considered too high or an outlier.

Q. HOW DO YOU CHARACTERIZE THIS EXCLUSION?

A. It is not justifiable methodologically to remove a calculation just because it is a high number. For example, an analyst could have arbitrarily concluded, just as easily, that Central Vermont Public Service was an outlier on the low side.

Q. HOW DOES PUBLIC COUNSEL WITNESS BURDETTE'S PROPOSED CAPITAL STRUCTURE COMPARE IN TERMS OF RISK TO THE ONE PROPOSED BY THE COMPANY?

A. It is more risky.

Q. PLEASE EXPLAIN.

A. A fundamental tenet of finance is that a more leveraged company has more financial risk than a less leveraged company. Another way of saying this is that the greater the portion of a company's capital is debt, then the greater the financial risk. Hence, the company's costs of capital will be higher.

Q. DID MR. BURDETTE CONSIDER THE CAPITAL STRUCTURES OF HIS COMPARABLE COMPANIES?

A. It appears that he did not. His comparable companies have equity ratios of 46.78 percent compared to his proposed capital structure of 40.14 percent. I have reproduced this comparison from his Schedule MB-3 from his testimony as my Rebuttal Schedule DAM-6. From his comparison, it is obvious that the equity ratios of his comparable companies are more in line with the divisional capital structure of Aquila Networks MPS than Aquila, Inc.'s capital structure that Mr. Burdette proposed.

Q. IS THERE ANYTHING IN ADDITION THAT CONCERNS YOU ABOUT MR. BURDETTE'S PROPOSED CAPITAL STRUCTURE IN THIS CASE?

A. Yes, his Schedule MB-1 shows a sharp decrease in the capital structure of Aquila, Inc., from 2001 of 56.1 percent to 2002 of 40.1 percent. The latter is the basis for his recommended capital structure in this proceeding for the Missouri affiliate .

This volatility in the common equity of a company is not characteristic of the capital structure of an electric utility. Because of the stability of the long-lived assets required to provide utility service and the permanent sources of capital to build these assets, the capital structures of utilities normally change very slowly over time, and this occurs as a consequence of the issuance of blocks of securities. This volatility of the common equity ratio alone demonstrates that the capital structure that he is proposing in this proceeding cannot be the germane utility capital structure of the electric division of Aquila, Inc., in Missouri.

Q. DO YOU KNOW WHAT ACCOUNTS FOR THIS SHARP DECLINE IN THE COMMON EQUITY OF AQUILA?

A. Yes, the current common equity of Aquila declined so rapidly and is so low because Aquila sold the non-regulated assets at current values and the erosion of the value of the common stock. There has been no erosion of the planned, and executed, utility equity component. This is further confirmation that Aquila's capital structure is not the correct capital structure to use in this proceeding.

Q. WHY DID YOU SAY THAT PUBLIC COUNSEL WITNESS MARK BURDETTE'S RETURN ON EQUITY JUDGMENT IS OUT-OF-LINE WITH THE INDUSTRY?

A. I compared the actual return on common stock of his comparable companies to his proposed return on common stock in this proceeding, as shown in Rebuttal Schedule DAM-7. This schedule shows that his comparable companies have an average return on common stock equity of 11.5 percent. This is much higher than his proposed range of 9.6 to 10.1 percent.

Q. HOW DOES MR. BURDETTE'S PROPOSED INTEREST COVERAGE RATIO COMPARE TO THE COVERAGE RATIOS THAT HE CALCULATED FOR HIS COMPARABLE COMPANIES?

A. The before tax interest coverage ratio that will result from Mr. Burdette's recommend allowed return is in the range of 2.40 times to 2.47 times, as shown in his schedule MB-10. In contrast, his Schedule MB-3 reports ranges of coverages of his comparable companies from 3.00 to 4.10 times, and they average 3.43 times. I have juxtaposed these results in Rebuttal Schedule DAM-8. This indicates that the recommended allowed return by Mr. Burdette will provide an interest coverage that is far below his calculations of interest coverage for the companies that he selected as comparable companies.

Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?

A. Yes, it does.

Aquila Networks – MPS and SJLP

Summary of Rebuttal Schedules

Rebuttal Schedule DAM-1: Selected Financial Ratios

Rebuttal Schedule DAM-2: Table C-1 from Ibbotson Associates 2003 SBBI Yearbook: Valuation Edition

Rebuttal Schedule DAM-3: Capital Asset Pricing Model

Rebuttal Schedule DAM-4: Witness Murray's Before Tax Interest Coverage Ratios

Rebuttal Schedule DAM-5: Direct Testimony of OPC Witness Mark Burdette

Rebuttal Schedule DAM-6: Common Equity Ratios

Rebuttal Schedule DAM-7: Returns on Common Equity for 2002

Rebuttal Schedule DAM-8: Witness Burdette's Before Tax Interest Coverage Ratios

Aquila Networks - MPS & SJLP

Selected Financial Ratios

For Staff Witness Murray's Comparable Electric Utilities

Company Name	Year 2002 Common Equity to Total Capital Ratio	2003 Projected Return on Common Equity
Cleco Corporation	38.20%	12.50%
DPL, Inc	24.70%	17.50%
DQE, Inc.	25.50%	19.50%
Hawaiian Electric Industries, Inc.	46.50%	9.50%
IDACORP, Inc.	47.90%	4.50%
NSTAR	37.80%	13.50%
Average	36.77%	12.83%

Source: Direct Testimony of Staff Witness David Murray, Schedule 20

Table C-1

Key Variables in Estimating the Cost of Capital

	Value
Yields (Riskless Rates)[1]	
Long-term (20-year) U.S. Treasury Coupon Bond Yield	4.8%
Intermediate-term (5-year) U.S. Treasury Coupon Note Yield	2.6
Short-term (30-day) U.S. Treasury Bill Yield	1.2
Equity Risk Premium[2]	
Long-horizon expected equity risk premium: large company stock total return minus long-term government bond income returns	7.0
Intermediate-horizon expected equity risk premium: large company stock total returns minus intermediate-term government bond income returns	7.4
Short-horizon expected equity risk premium: large company stock total returns minus U.S. Treasury bill total returns	8.4

Size Premium[3]

Decile	Market Capitalization of Smallest Company (in millions)		Market Capitalization of Largest Company (In millions)	Size Premium (Return in Excess of CAPM)
Mid-Cap, 3-5	$1,144.452	-	$5,012.705	0.82%
Low-Cap, 6-8	$314.174	-	$1,143.845	1.52
Micro-Cap, 9-10	$0.501	-	$314.042	3.53
Breakdown of Deciles 1-10				
1-Largest	$11,636.618	-	$293,137.304	–0.32
2	$5,018.316	-	$11,628.735	0.42
3	$2,686.479	-	$5,012.705	0.66
4	$1,691.463	-	$2,680.573	0.95
5	$1,144.452	-	$1,691.210	1.16
6	$791.917	-	$1,143.845	1.48
7	$521.400	-	$791.336	1.35
8	$314.174	-	$521.298	2.06
9	$141.529	-	$314.042	2.56
10-Smallest	$0.501	-	$141.459	5.67
Breakdown of the 10th Decile				
10a	$64.798	-	$141.459	3.98
10b	$0.501	-	$64.767	9.16

[1] As of December 31, 2002. Maturities are approximate.

[2] Expected risk premia for equities are based on the differences of historical arithmetic mean returns from 1926–2002 using the S&P 500 as the market benchmark.

[3] See chapter 7 for complete methodology.

Note: Examples on how these variables can be used are found in Chapters 3 and 4

AQUILA, INC.
CASE NOS. RE-2004-0034 and HR-2004-0024

Capital Asset Pricing Model (CAPM) Cost of Common Equity Estimates
for the Comparable Electric Utility Companies

Company Name	Risk Free Rate	Company's Value Line Beta	Market Risk Premium	Size Premium	CAPM Cost of Common Equity
Cleco Corporation	5.16%	0.90	7.00%	1.52%	12.98%
DPL, Inc	5.16%	0.80	7.00%	0.82%	11.58%
DQE, Inc.	5.16%	0.65	7.00%	1.52%	11.23%
Hawaiian Electric Industries, Inc.	5.16%	0.55	7.00%	0.82%	9.83%
IDACORP, Inc.	5.16%	0.75	7.00%	1.52%	11.93%
NSTAR	5.16%	0.65	7.00%	0.82%	10.53%
Average		0.72			11.35%
Aquila, Inc.	5.16%	1.00	7.00%	1.52%	13.68%

Sources: Direct Testimony of Staff Witness David Murray, Schedule 17, Schedule DAM R-2

Aquila Networks - MPS & SJLP

Before Tax Interest Coverage Ratios

For Staff Witness Murray's Comparable Electric Utilities

Company Name	Pre-Tax Interest Coverage Ratio
Cleco Corporation	3.10
DPL, Inc	3.30
DQE, Inc.	3.60
Hawaiian Electric Industries, Inc.	3.00
IDACORP, Inc.	0.00
NSTAR	2.90
Average	2.65

Source: Direct Testimony of Staff Witness David Murray, Schedule 20

Direct Testimony of Mark Burdette
Witness for the Office of Public Counsel

DIRECT TESTIMONY
OF
MARK BURDETTE

AQUILA, INC. D/B/A
AQUILA NETWORKS MPS AND AQUILA NETWORKS L&P
CASE NO. ER-2004-0034

INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

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

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

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

A. PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND.

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

Q. PLEASE DESCRIBE YOUR CONTINUING EDUCATION.

A. I have attended various regulatory seminars presented by the Financial Research Institute, University of Missouri-Columbia and the National Association of State Utility Consumer

Advocates. Also, I attended The Basics of Regulation: Practical Skills for a Changing Environment presented by the Center for Public Utilities, New Mexico State University.

Q. DO YOU HAVE ANY PROFESSIONAL AFFILIATIONS?

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

Q. DO YOU HOLD ANY PROFESSIONAL DESIGNATIONS?

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

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

A. Yes.

Q. WHAT IS THE PURPOSE OF THIS TESTIMONY?

A. I will present a cost-of-capital (rate of return) analysis for the regulated electricity operations of Aquila, Inc., d/b/a Aquila Networks-MPS and Aquila Networks-L&P. I will recommend and testify to the capital structure, embedded cost of long-term debt, fair return on common equity, and weighted overall cost of capital that should be allowed in this proceeding.

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

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

ANALYSIS

Q. WHAT DO YOU BELIEVE IS THE FINANCIAL MARKETS' VIEW OF REGULATED UTILITIES?

A. I believe the financial markets recognize that regulated utilities remain a stable investment with relatively low risk compared to the market overall. Many companies have suffered reduced credit worthiness due to their forays into unregulated ventures. The myriad failures of unregulated operations in the energy industry have tainted the view of traditional regulated utilities. Those companies entering unregulated operations appeared – indeed were - more risky overall, which would be reflected in investors' increasing their required rates of return on those companies' securities. But the increased risk was not due to regulated operations, and the increased cost of capital for those companies is not reflective of the returns required by investors for regulated utility operations.

According to a report by Standard & Poor's entitled "Key Issues Affecting Credit Quality for US Utility Companies" (October 6, 2003):

> The ratings trend year-to-date for the traditional, nondiversified, and regulated US investor-owned electric and gas industry remains relatively stable, with little of the downward pressure experienced elsewhere in the energy industry.
>
> Downward rating pressure on these companies typically results from the strained credit quality of their nonregulated affiliates. With limited exceptions, regulation has continued to remain relatively supportive of credit quality.

Q. WHY IS THE DISTINCTION BETWEEN THE RISK OF REGULATED VERSUS UNREGULATED OPERATIONS AN IMPORTANT FACTOR FOR THE MISSOURI PUBLIC SERVICE COMMISSION TO REMEMBER AND CONSIDER?

A. The distinction is important because in this proceeding the Commission will authorize a return on equity, cost of debt and overall cost of capital for the **regulated utility operations** of Aquila, Inc. The Commission should be wary of arguments that attempt to

paint a bleak picture of the financial markets' view of regulated utilities and the risk associated with regulated operations.

CAPITAL STRUCTURE

Q. IS AQUILA, INC. AN INDEPENDENT, PUBLICLY TRADED COMPANY?

A. Yes. Aquila, Inc. (Aquila) is a public corporation. Its stock trades under the ticker symbol ILA.

Q. ARE AQUILA NETWORKS-MPS AND AQUILA NETWORKS-L&P INDEPENDENT, PUBLIC CORPORATIONS?

A. No. Aquila Networks (both MPS and L&P) are operating divisions of Aquila, Inc., and therefore are not separate corporations. All of the corporate financing of Aquila Networks is handled through the only existing corporate entity, Aquila, Inc. The operating divisions do not have their own separate legal identities or financing.

Q. DO THE OPERATING DIVISIONS HAVE THEIR OWN SEPARATE CAPITAL STRUCTURES?

A. No. Both operating divisions are supported by the consolidated capital structure of Aquila, Inc. All capital is raised and provided to the divisions by Aquila.

Q. WHAT CAPITAL STRUCTURE IS APPROPRIATE TO USE TO SET THE RATE OF RETURN (WEIGHTED AVERAGE COST OF CAPITAL) FOR AQUILA NETWORKS-MPS AND AQUILA NETWORKS-L&P?

A. The capital structure that is appropriate is the capital structure of Aquila, Inc. It is the only capital structure that actually exists for Aquila or any of its operating divisions. Any 'allocated' or 'target' capital structures for Aquila Networks-MPS and Aquila Networks-L&P are purely fictitious and are inappropriate to use to calculate a regulated rate of return.

Q. WHAT CAPITAL STRUCTURE DO YOU RECOMMEND FOR THIS PROCEEDING?

A. I recommend Aquila, Inc.'s actual capital structure as of the end of the test year (31 December 2002) be used to calculate the overall rate of return that is appropriate for the Company's regulated electricity operations within the state of Missouri. Public Counsel is willing to update the capital structure to 30 September 2003 (the update period for this proceeding) to calculate the final rate of return.

According the Aquila, Inc.'s 2002 Annual Report to Shareholders and the Company's 10K report filed with the SEC, at 31 December 2002, Aquila's capital structure consisted of 40.14% common equity and 59.86% long-term debt (net, less current maturities). This capital structure was utilized for my calculation of overall rate of return (ROR) and is shown on Schedule MB-2. I recommend this capital structure be used in this proceeding to calculate Aquila's overall rate of return for Aquila Networks-MPS and Aquila Networks-L&P.

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

A. Aquila's capital structure has been quite variable over the past few years. As can be seen on Schedule MB-1, the levels of common equity and long-term debt have varied significantly for the years 1998-2002. Also, the Company carried various amounts of trust preferred securities during the years 1999-2001. The capital structure at the end of the test year is within the bounds of this variability, containing slightly more common equity than the low since 1998.

I would also note that I expect Aquila's capital structure to continue to vary even during these proceedings, depending on the outcome of various potential asset sales and attempts at debt reduction (or lack thereof).

Q. PLEASE SHOW THE CAPITAL STRUCTURE YOU RECOMMEND.

A. I recommend the following capital structure be used to calculate Aquila's overall rate of return for its Missouri-jurisdictional electricity operations:

Common equity:	40.14%
Long-term debt	59.86%
Total:	100.0%

Q. HOW DOES THIS CAPITAL STRUCTURE COMPARE WITH OTHER ELECTRIC UTILITIES?

A. Aquila's current common equity ratio has been highly variable, in general. It is lower than the average level of common equity of the comparison group I've selected for this analysis, but quite similar to the common equity ratio statistics included in Value Line's Composite Statistics for electric utilities (Schedule MB-4). The 24 electric utilities covered by C.A. Turner Utility Reports have an average common equity ratio of 40% as of the November 2003 issue. This level of common equity is essentially the same as Aquila's test-year level.

In addition, Aquila had varying levels of outstanding trust-preferred securities in the past that have now been retired. The existence of those securities affected the relative percentage levels of common stock and long-term debt in Aquila's historical capital structures.

Q. COULD YOU DEFINE THE RISK AND THE EXLAIN THE FUNDAMENTAL DIFFERENCES BETWEEN BUSINESS RISK AND FINANCIAL RISK?

A. Yes. Risk can be defined as the possibility that actual earnings from an asset or an investment may differ from expected earnings. The wider the range of possible earnings, the greater the risk associated with that asset or investment. A comparison of various risk measures for EDE and the group of comparison companies is shown on Schedule MB-3.

Business risk is the uncertainty (variability) associated with earnings due to fundamental business conditions faced by the company, such as cyclical markets, weather-sensitive sales, changing technology, unforeseen events, or competition. Business risk is the *inherent riskiness of a firm's assets* due to the operations of the company and the industry in which in operates. In other words, business risk is not connected to the way the firm finances its assets.

Financial risk is the uncertainty associated with earnings available to common shareholders due to debt and/or preferred stock being used to finance the firm's assets. This additional risk stems from the fact that cash flows to common shareholders are subordinate to a firm's required debt service (i.e. a firm must pay its debt service and any preferred dividends before it can pay common dividends.) From a common shareholder's perspective, a firm with less debt and preferred stock in its capital structure has fewer bills to pay before it can allocate earnings to common dividends, and is therefore less risky.

EMBEDDED COSTS

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

A. The embedded cost rate is 7.48% for Aquila's long-term utility debt as of 31 December 2002, as provided by the Company in response to OPC data request 2002.

Q. DOES THIS EMBEDDED COST REFLECT THE COST OF ALL OF AQUILA'S DEBT?

A. No. The 7.48% embedded cost reflects the actual embedded cost of Aquila's domestic utility debt only. However, this cost rate is appropriate to use in this proceeding because the cost of Aquila's other debt is primarily reflective of international and unregulated operations.

Q. HAS AQUILA, INC. MADE ASSURANCES TO THE MPSC THAT THE COMPANY'S MISSOURI-JURISDICTIONAL UTILITY CUSTOMERS WOULD PAY RATES BASED ON AN INVESTMENT-GRADE COST OF DEBT, AND NO MORE?

A. Yes. Aquila has assured the MPSC that it would not base rates nor attempt to base rates for its Missouri customers on a cost of debt that was more than that cost attainable by an investment-grade public utility. Aquila's domestic utility debt was all issued before the Company entered its current financial crisis. Therefore, that cost is appropriate to consider for the embedded cost of debt in this proceeding.

COST OF COMMON EQUITY

Q. WHAT IS YOUR RECOMMENDED COST OF COMMON EQUITY AQUILA'S REGULATED ELECTRICITY OPERATIONS, D/B/A AQUILA NETWORKS-MPS AND AQUILA NETWORKS-L&P?

A. Aquila should be allowed a return on common equity of 9.60% to 10.10%.

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

A. I utilized the standard Discounted Cash Flow (DCF) methodology and the Capital Asset Pricing Model (CAPM) applied to the common stocks of a group of four comparison publicly-traded electric utilities.

Q. WHY DID YOU NOT INCLUDE AQUILA IN YOUR ANALYSIS?

A. Frankly, the current financial situation of the Company, and the correspondingly low stock price, makes the Company's actual market information unsuitable to use. The Company's stock is trading at low levels and the Company has suspended dividend payments.

Q. HOW DID YOU CHOOSE THE COMPARISON GROUP YOU UTILIZED FOR YOUR ANALYSIS?

A. I started with all the electric utilities covered by C.A. Turner Utility Reports, November 2003. From that list, I excluded all companies that are regulated in the state of Missouri; all companies that did not have at least a Standard & Poor's BBB rating; all companies that did not earn at least 75% of revenues from the sale of regulated electricity; and excluded two companies due to them being vastly larger than the average electric utility. From the remaining companies, I excluded any company that had greater than 70% debt in its capital structure and any companies that were, essentially, in as bad or worse financial shape as Aquila. The following companies remained and were included in the analysis: 1) Central Vermont Public Service Corporation; 2) Cleco Corporation; 3) Green Mountain Power Corp.; and 4) Hawaiian Electric Industries, Inc. A comparison of financial information and risk measures for the proxy group are Schedule MB-3.

DISCOUNTED CASH FLOW MODEL

DCF COST OF EQUITY

Q. WHAT IS THE DISCOUNTED CASH FLOW MODEL (DCF) COST-OF-EQUITY YOU CALCULATED IN YOUR ANALYSIS?

A. Based on a dividend yield of 4.55% and a growth rate of 5.0%, the DCF cost of equity is 9.55%.

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

A. The model is represented by the following equation:

$$k = D/P + g$$

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

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

1) A constant rate of growth,

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

3) The dividend payout ratio remains constant,

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

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

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

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

Cash flows associated with owning a share of common stock can take two forms: selling the stock and dividends. Just as the current value of a share of stock is a function of future cash flows (dividends), the *future* price of the stock at any time is also a function of future dividends. When a share of stock is sold, what is given up is the right to receive all future dividends. Therefore, the DCF model, using expected future dividends as the cash flows, is appropriate regardless of how long the investor plans to hold the stock. Determination of a holding period and an associated terminal price is unnecessary. Brealey and Myers emphasize the irrelevance of investors' time horizons:

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

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

GROWTH RATE

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

A. The growth rate variable, g, in the traditional DCF model is the dividend growth rate investors expect to continue into the *indefinite future* (i.e., the sustainable growth rate). This is not necessarily the same growth rate that a company or analysts expect over the next one year or even the next five years.

Q. HOW IS THE SUSTAINABLE GROWTH RATE DETERMINED?

A. Sustainable growth is determined by analyzing various historical and projected growth rates for the Company. These growth rates might be calculated from raw data or taken from financial resources such as Value Line Investment Survey. The growth rates analyzed can include historical and projected growth rates of, for example, earnings per share (EPS), dividends per share (DPS) and book value per share (BVPS). Analysts also consider retention growth (both historical and projected), which is a calculation of the level of earnings the company retains and does not pay out in dividends.

Q. PLEASE DESCRIBE RETENTION GROWTH IN MORE DETAIL.

A. It is important to recognize the fundamentals of long-term investor-expected growth when developing a sustainable growth rate. Retention growth and a company's dividend policy, including payout ratio, can be important when calculating a sustainable growth rate. Future dividends will be generated by future earnings and a primary source of growth in future earnings is the reinvestment of present earnings back into the firm (for example, investment in new infrastructure components and other rate base assets). This reinvestment of earnings also contributes to the growth in book value. Furthermore, it is the earned return on reinvested earnings and existing capital (i.e., book value) that ultimately determines the basic level of future cash flows. Therefore, as measured by retention growth, the future growth rate called for in the DCF formula is found by multiplying the future expected earned return on book equity (r) by the percentage of earnings expected to be retained in the business (b). This calculation, known as the "b*r" method, or retention growth rate, results in a valid sustainable growth rate which can be used in the Discounted Cash Flow formula. While the retention growth rate can be calculated using historic data on earnings retention and equity returns, this information is relevant only to the extent that it provides a meaningful basis for

determining the future sustainable growth rate. Consequently, *projected* data on earnings retention and return on book equity are generally more representative of investors' expectations.

Q. CAN YOU PROVIDE AN EXAMPLE THAT ILLUSTRATES THE FUNDAMENTALS OF SUSTAINABLE GROWTH AS MEASURED BY RETENTION GROWTH?

A. Yes. To better understand the principles of retention growth, it is helpful to compare the growth in a utility's cash flows to the fundamental causes of growth in an individual's passbook account. For an individual who has $100 in a passbook account paying 5.0% interest, earnings will be $5 for the first year. If this individual leaves 100% of the earnings in the passbook account (retention ratio equals 100%), the account balance at the end of the first year will be $105. Total earnings in the second year will be $5.25 ($105 x 5.0%), and the growth rate of the account in year two is 5.0% [100%(b) x 5%(r)]. On the other hand, if the individual withdraws $3 of the earnings from the first year and reinvests only $2 (retention ratio equals 40%) earnings in the second year will be only $5.10 ($102 x 5.0%), with growth equaling 2.0% [($102-$100)/$100 = 2.0% = 40%(b) x 5%(r)]. In both cases, the return, along with the level of earnings retained, dictate future earnings.

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

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

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

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

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

As a matter of completeness, all of the above-mentioned techniques for measuring growth were utilized: historical growth in EPS, DPS, and BVPS, historical retention growth, projections of growth in EPS, DPS, and BVPS, and projected retention growth. My growth rate calculations are summarized on Schedule MB-5, page 1. Calculations for individual companies are shown on Schedule MB-5, pages 2-5.

Q. THE DCF GROWTH RATE IS THE SUSTAINABLE GROWTH RATE FOR DIVIDENDS PER SHARE. IS THE HISTORIC GROWTH RATE IN DIVIDENDS PER SHARE AN APPROPRIATE PROXY FOR THE SUSTAINABLE GROWTH RATE?

A. Not necessarily. The historic growth rate in dividends per share will tend to overstate (understate) the sustainable growth rate when the dividend payout ratio has increased (decreased) over the measurement period. For an extended discussion and illustration of this phenomenon, please see Appendix I.

DETERMINATION OF SUSTAINABLE GROWTH

Q. WHAT GROWTH RATE PARAMETERS HAVE YOU EXAMINED?

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

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

A. Historic rates of growth in earnings per share (EPS), dividends per share (DPS), and book value per share (BVPS) were analyzed using two methods. First, compound growth rates were calculated for the five-year periods ending 2000, 2001 and 2002. These three five-year compound growth rates were then averaged and are labeled "Ave. Compound Gr." on line (16) of Schedule MB-5, pages 2-5.

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

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

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

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

Value Line historic growth measurements for EPS, DPS and BVPS appear on line (19) of Schedule MB-5, pages 2-5.

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

A. Projected growth rates in EPS, DPS, and BVPS were taken from Value Line and are found on line 30 of Schedule MB-5, pages 2-5. Projected growth in EPS was also taken from First Call Corporation (line 32). If First Call did not issue a projection for a particular company, that space contains n/a. Information from First Call is available to the average investor. The projected growth in EPS found on line 36 is the average of earnings growth projections furnished by Value Line and First Call. Value Line's projected growth in dividends and book value are listed again on line 36.

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

A. Historic retention growth was determined using the product of return (r) and retention rate (b) for the years 1998-2002, and the average was calculated (line 10, final column). The projected retention growth data, found on lines 25-27 of Schedule MB-5, pages 2-5 is based on information from Value Line. Projected retention growth was calculated for 2003, 2004 and the period 2006-08. An average of these growth rates appears on line 30 and is used in calculating projected retention growth for each company.

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

Q. PLEASE SUMMARIZE YOUR GROWTH RATE CALCULATIONS FOR THE GROUP OF COMPARISON COMPANIES.

A. The following table outlines the results of the analysis of growth rates for the comparison group. The high average growth rate is 6.20% for projected EPS and the low average growth rate is 1.10% compound historical DPS. The overall average of all growth rates for all four companies is 3.77% (Schedule MB-5, page 1). The average projected growth rate for the group is 4.32%. The averages do not include negative growth rates. I also excluded the 19.16% Compound EPS growth rate for Central Vermont Public Service because it is an extraordinary value stemming from an unusually low EPS value in 1998.

Growth rate summary (proxy group): Overall average = 3.77%

	EPS	DPS	BVPS
Historic Compound Growth	5.11%	1.10%	2.54%
Historic Value Line Growth	4.00%	1.75%	2.50%
Projected Growth	6.20%	4.00%	2.88%

	Historical	Projected
Retention Growth	3.56%	4.52%

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

A. I believe the sustainable growth rate for the comparison companies is at most 5.0%.

DIVIDEND YIELD

Q. WHAT IS THE APPROPRIATE DIVIDEND YIELD TO USE TO CALCULATE A DCF COST OF EQUITY FOR AQUILA?

A. I utilized a dividend yield of 4.55% for my DCF cost of equity calculations. This value is the average dividend yield of for the group of comparison companies. This value is supported by the fact that C.A. Turner Utility Reports (November 2003) shows a dividend yield of

4.6% for the 24 electric utilities it covers. According to Value Line, the average dividend paid by all electric utilities under its review is "slightly over 4%."

Q. EXPLAIN YOUR CALCULATION OF THE DIVIDEND YIELD.

A. The appropriate dividend yield to use in the DCF equation is equal to the *expected* dividend divided by *current* stock price. Schedule MB-6 shows average stock price over a recent six week period for the comparison companies, expected dividends for 2004 (as taken from Value Line) and calculations of dividend yields.

I used a six-week period for determining the average stock price because I believe that period of time is long enough to avoid daily fluctuations and recent enough so that the stock price captured is representative of current expectations. The stock price is the average of the Friday closing price from 10/27/03 through 12/03/03.

CAPITAL ASSET PRICING MODEL

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

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

$$K = R_f + \text{beta}(R_m - R_f)$$

where,

K_e = the cost of common equity for the security being analyzed,
R_f = the risk free rate,
beta = the company's beta risk measure,
R_m = market return, and
$(R_m - R_f)$ = market premium.

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

The formula says that the cost of common equity is equal to the risk free rate plus some proportion of the market premium - that proportion being equal to beta. The market overall has a beta of 1.0. Firms with beta less than 1.0 are assumed to be less risky than the market; firms with beta greater than 1.0 are assumed to be more risky than the market. Beta for my group of comparison companies ranges from 0.45 to 0.90.

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

A. I believe the CAPM and its dependence on the single risk measure beta has limitations in its ability to accurately take into account the risk factors faced by a company, and therefore that company's cost of equity. I do not believe the CAPM should be used as the primary cost-of-capital analysis tool. However, many investors continue to rely on the CAPM. Therefore, I included the CAPM as part of my analysis.

Q. ARE THERE ASPECTS OF THE CAPITAL ASSET PRICING MODEL ON WHICH ANALYSTS TEND TO DISAGREE?

A. Yes. Analysts tend to disagree on all aspects of the CAPM model: the appropriate risk free rate, the appropriate beta, and the appropriate return on the overall market.

Company witness Murry supplied two CAPM analyses in his Direct testimony (Schedules DAM-15 and DAM-16) in which he utilized two different combinations of risk free rate and return on the market.

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

A. For this proceeding, given the lack of usable market data for Aquila or either of its operating divisions, I chose to calculate a total of four average CAPM costs of equity for my group of four comparison companies.

I utilized two separate risk free rates. First, I used 4.25% for the risk free rate, which is the current rate on intermediate-length U.S. Government securities as reported by Value Line (12/5/03). Second, I used the 5.6% historical return on intermediate-term Government bonds as reported by Ibbotson Associates.

Then, for each of these two risk free rates, I utilized two separate overall returns to the market: 1) 12.2% market return for large company stocks, as reported by Ibbotson Associates. This implied a market premium of 6.6%.

2) 14.55% market return, which is the average of the 12.2% return for large-company stocks and the 16.9% return for small-company stocks. This implied a market premium of 8.95%.

The result of this methodology was to provide a sweeping CAPM analysis that includes and covers the areas of disagreement that usually occur between analysts.

Q. WHAT DOES YOUR CAPM ANALYSIS SHOW?

A. The results of my four CAPM analyses are as follows:

Risk free rate	Return to Market	Cost of Equity
4.25%	12.20%	9.22%
4.25%	14.55%	10.69%
5.60%	12.20%	9.73%
5.60%	14.55%	11.19%

The overall average of all four calculations is 10.21%.

Q. DO YOUR CAPM RESULTS INCLUDE WHAT COULD BE CONSIDERED A STATISTICAL OUTLIER?

A. Yes. Cleco Corporation's beta is 0.90, which is significantly higher than the other three companies, and out of line for the risk of a pure-play electric utility. This fact causes the overall average to be greater than it would otherwise be. The higher beta means that Cleco's common stock has shown greater price volatility than the stock of the other companies.

Q. WHAT IS THE RESULT OF YOUR CAPM ANALYSIS IF YOU EXCLUDE CLECO CORPORATION?

A. The overall average CAPM cost of equity for the three remaining comparison companies (averaging the results of all four methods) is 9.43%.

RECOMMENDED RETURN ON COMMON EQUITY

Q. WHAT RETURN ON COMMON EQUITY DO YOU RECOMMEND THE MPSC AUTHORIZE FOR THE REGULATED ELECTRIC OPEREATIONS OF AQUILA?

A. Based on the results of my DCF and CAPM analyses, I recommend a return on common equity of 9.60% to 10.10%.

WEIGHTED AVERAGE COST OF CAPITAL

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

A. The weighted average cost of capital I calculated is 8.33% to 8.53%. The WACC calculation is shown on Schedule MB-10.

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

A. Based on a WACC of 8.33% to 8.53%, the pre-tax coverage ratio is 2.40 to 2.47 times. The derivation of pre-tax coverage is shown on Schedule MB-10.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, it does.

APPENDIX A

DEVELOPMENT & PURPOSES OF REGULATION

Q. WHY ARE PUBLIC UTILITIES REGULATED?

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

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

APPENDIX B
CALCULATION OF THE WEIGHTED AVERAGE COST OF CAPITAL

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

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

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

where R = the total revenue required,

O = cost of operations,

V = the gross value of the property,

D = the accrued depreciation, and

A = other rate base items,

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

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

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

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

where i = embedded cost of debt capital,

D = amount of debt capital,

l = embedded cost of preferred stock,

P = amount of preferred stock,

k = cost of equity capital,

E = amount of equity capital, and

C = amount of total capital.

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

APPENDIX C
ECONOMIC PRINCIPLES OF REGULATION

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

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

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

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

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

Competition, in conjunction with the wealth maximization goal, induces firms to increase investment as long as the expected rate of return on an investment is greater that the cost of capital. Competitive equilibrium is achieved when the rate of return on the last

investment project undertaken just equals the cost of capital. When competitive equilibrium is achieved, the price ultimately received for goods or services reflects the full costs of production. Therefore, not only does competition automatically drive unregulated firms to minimize their capital costs (investment opportunities are expanded and competitive position is enhanced when capital costs can be lowered), it also ensures that the marginal return on investment just equals the cost of capital.

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

APPENDIX D
LEGAL REQUIREMENT FOR A FAIR RATE OF RETURN

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

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

Bluefield Water Works and Improvement Company v. Public Service Commission, 262 U.S. 679 (1923), and

FPC v. Hope Natural Gas Co., 320 U.S., 591 (1944)

In the Bluefield Case, the Court states,

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

Together, Hope and Bluefield have established the following standards,

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

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

3). A fair return can change along with economic conditions and capital markets. Furthermore, in Hope, the Court makes clear that regulation does not guarantee utility profits and, in Permian Basin Area Rate Cases, 390 US 747 (1968), that, while investor interests (profitability) are certainly pertinent to setting adequate utility rates, those interests do not exhaust the relevant considerations.

APPENDIX E
REGULATION IN MISSOURI

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

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

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

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

The General Assembly has determined that the provisions of the Public Service Commission Act "shall be liberally construed with a view to the public welfare, efficient facilities and substantial justice between patrons and public utilities" (See: 386.610 RSMo 1994). Pursuant to the above legislative directive, when developing the cost of equity capital for a public utility operating in Missouri, it is appropriate to do so with a view toward the public welfare;

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

APPENDIX F
MARKET-TO-BOOK RATIO ILLUSTRATION

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

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

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

APPENDIX G

EFFICIENT NATURE OF THE CAPITAL MARKETS

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

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

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

Q. PLEASE EXPLAIN THAT STATEMENT.

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

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

$$P = D/k-g$$

where P = the intrinsic value of the security,

D = the current dividend,

g = the expected growth rate, and

k = the required return on the security

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

$$k = D/P + g$$

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

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

A. Yes. Modern investment theory maintains that the U.S. capital markets are efficient and, at any point in time, the prices of publicly traded stocks and bonds reflect all available information about those securities. Additionally, as new information is discovered, security prices adjust virtually instantaneously. This implies that, at any given time, security prices reflect "real" or intrinsic values. This point is further clarified in Investments, by Bodie, Kane, and Marcus. According to Bodie, et.al.,

> A large body of empirical evidence supports a theory called the **efficient markets hypothesis** (EMH), which among other things says that active management of both types should not be expected to work for very long. The basic reasoning behind the EMH is that in a competitive financial environment successful trading strategies tend to "self-destruct." Bargains may exist for brief periods, but with so many talented highly paid analysts scouring the markets for them, by the time you or I "discover" them, they are no longer bargains. (pg. 3-4)

According to Brealy and Myers;

> In an efficient market you can trust prices. They impound all available information about the value of each security. (Principles of Corporate Finance, Fourth Edition, page 300)

APPENDIX H

DETERMINATION OF RETENTION GROWTH & SUSTAINABLE GROWTH vs. EARNINGS AND DIVIDEND GROWTH RATES

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

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

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

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

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

$$g = br.$$

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

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

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

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

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

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

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

$$g = br + sv$$

where, g = DCF expected growth rate,

r = return on equity,

b = retention ratio,

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

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

Additionally,

$$v = 1 - BV/MP$$

where,

MP = market price,
BV = book value.

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

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

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

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

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

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

For year one, the sustainable rate of growth (g=br) is 6.00 percent, just as it was in the previous example. On the other hand, in years two and three, the sustainable growth rate increases to 7.50 percent. (15% ROE x 50% retention rate = 7.50%). Consequently, if the utility is expected to continually earn a 15 percent return on equity and retain 50 percent of earnings for reinvestment, a growth rate of 7.50 percent would be a reasonable estimate of the long-term sustainable growth rate. However, the compound growth rate in earnings and dividends, which is over 19 percent, dramatically exceeds the actual investor-expected growth rate.

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

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

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

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

Although the company has registered a high dividend growth rate (28.13%), it is not representative of the growth that could be sustained, as called for in the DCF model. In actuality, the sustainable growth rate (br) has declined due to the increased payout ratio. To utilize a 28 percent growth rate in a DCF analysis for this hypothetical utility would be to assume that the payout ratio could continue to increase indefinitely and lead to the unlikely result that the firm could consistently pay out more in dividends than it earns. The problems

associated with sole reliance on historic dividend growth has been recognized in the financial literature. According to Brigham and Gapenski,

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

DIRECT TESTIMONY
OF
MARK BURDETTE

AQUILA, INC. D/B/A
AQUILA NETWORKS MPS AND AQUILA NETWORKS L&P
CASE NO. ER-2004-0034

TABLE OF CONTENTS

BURDETTE - DIRECT
ER-2004-0034 Aquila, Inc.

Aquila, Inc. Historical Capital Structure

	2002	2001	2000	1999	1998	Average
Common Equity	40.1%	56.1%	39.2%	37.4%	51.2%	46.0%
Preferred Trust Securities	0.0%	5.5%	9.8%	8.6%	0.0%	6.0%
Long Term Debt	59.9%	38.4%	51.0%	54.0%	48.8%	48.1%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Financial Ratios

	2002	2001	2000	1999	1998	Average
EPS	($12.83)	$2.42	$2.21	$1.75	$1.63	$1.86
DPS	-	$1.20	$1.20	$1.20	$1.20	$1.20
Payout		49.6%	54.3%	68.6%	73.6%	64.4%
Return on average common equity		11.70%	13.46%	10.80%	11.43%	11.90%

Source: Aquila, Inc. Annual Reports
Value Line Investment Survey

BURDETTE - DIRECT
ER-2004-0034 Aquila, Inc.

Capital Structure as of 31 December 2002

		Amount	Percent
Common Stock Equity	$	1,607.9	40.14%
Trust Preferred Securities	$	-	
Long Term Debt	$	2,398.0	59.86%
	$	4,006	100.00%

Source: Company response to OPC DR2001 and 2002;

BURDETTE - DIRECT
ER-2004-0034 Aquila, Inc.

Risk Measures

	Public	(millions) Revenue	% Rev Elec	S&P	Missouri Regulation?
Central Vermont Public Service	Yes	$ 310.2	100.0%	BBB+	No
Cleco Corporation	Yes	$ 803.8	77.0%	BBB-	No
Green Mountain Power	Yes	$ 278.0	100.0%	BBB	No
Hawaiian Electric Industries	Yes	$ 1,740.7	78.0%	BBB+	No
Average		**$ 783.2**	**88.8%**	**BBB-**	

	Beta	Payout Ratio	Common Equity	Safety	MTB	Interest Coverage	Fixed Charge Coverage	Financial Strength
Central Vermont Public Service	0.45	54.0%	54.1%	3	1.37	4.1	251%	B++
Cleco Corporation	0.90	-	38.2%	3	1.55	3.1	226%	B+
Green Mountain Power	0.60	36.0%	48.3%	3	1.18	3.5	327%	B++
Hawaiian Electric Industries	0.55	84.0%	46.5%	2	1.53	3.0	289%	A
Average	**0.63**	**58.0%**	**46.8%**	**2.75**	**1.41**	**3.43**	**273%**	**B++**

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

BURDETTE - DIRECT
ER-2004-0034 Aquila, Inc.

Comparable Companies' Percent Common Equity
Value Line Investment Survey Composite Index

	2002	2001	2000	1999	Average
Central Vermont Public Service	54.1%	48.4%	50.0%	48.5%	50.3%
Cleco Corporation	38.2%	42.4%	39.7%	41.0%	40.3%
Green Mountain Power	48.3%	52.2%	50.3%	49.8%	50.2%
Hawaiian Electric Industries	46.5%	41.6%	39.9%	41.4%	42.4%
Average	**46.8%**	**46.2%**	**45.0%**	**45.2%**	**45.8%**
Aquila, Inc.	40.1%	56.1%	39.2%	37.4%	**46.1%**

	2002	2001	2000	1999	Average
Value Line Composite Index *(Electric Utility Industry)*	39.0%	38.9%	40.3%	42.1%	**40.4%**

Note: Calculations do not include short term debt

Source: Value Line Investment Survey

BURDETTE - DIRECT
ER-2004-0034 Aquila, Inc.

Summary - Discounted Cash Flow Growth

Historical Growth		Compound Growth			Value Line		
COMPANY	br+sv	EPS	DPS	BVPS	EPS	DPS	BVPS
Central Vermont Public Service	1.02%	*19.16%*	0.39%	0.82%	*-3.00%*	*-2.00%*	1.00%
Cleco Corporation	5.37%	7.75%	2.54%	5.65%	5.50%	2.75%	5.00%
Green Mountain Power	5.06%	4.61%	*-31.09%*	*-4.75%*	-	-	-
Hawaiian Electric Industries	2.78%	2.99%	0.38%	1.15%	2.50%	0.75%	1.50%
Average	**3.56%**	**5.11%**	**1.10%**	**2.54%**	**4.00%**	**1.75%**	**2.50%**

Projected Growth		Value Line/First Call		
COMPANY	br+sv	EPS	DPS	BVPS
Central Vermont Public Service	4.67%	7.50%	3.00%	2.00%
Cleco Corporation	5.61%	5.00%	0.50%	3.00%
Green Mountain Power	6.01%	9.50%	8.50%	3.00%
Hawaiian Electric Industries	1.79%	2.80%	-	3.50%
Average	**4.52%**	**6.20%**	**4.00%**	**2.88%**

Ranges	Overall			Hi/Low		Average	Average
COMPANY	Average	High	Low*	Average	Median	Historical	Projected
Central Vermont Public Service	2.55%	7.50%	1.00%	4.25%	1.02%	0.81%	4.29%
Cleco Corporation	4.42%	7.75%	0.50%	4.13%	5.00%	4.94%	3.53%
Green Mountain Power	6.11%	9.50%	3.00%	6.25%	4.83%	4.83%	6.75%
Hawaiian Electric Industries	2.01%	3.50%	0.38%	1.94%	2.14%	1.72%	2.70%
Average	**3.77%**	**7.06%**	**1.22%**	**4.14%**	**3.25%**	**3.07%**	**4.32%**

Negative growth rates are not included in averages nor in the determination of "Low."

BURDETTE - DIRECT
ER-2004-0034 Aquila, Inc.

Discounted Cash Flow Growth Parameters
Central Vermont Public Service Corporation

Historical Growth

Historical Data	EPS	DPS	BVPS	Retention Ratio (b)	Retention Growth: Equity Return (r)	Growth (b*r)
1996	1.41	0.84	16.19	0.404		
1997	1.32	0.88	16.38	0.333		
1998	0.18	0.88	15.63	-3.889	1.10%	-4.28%
1999	1.28	0.88	16.05	0.313	8.00%	2.50%
2000	1.14	0.88	16.57	0.228	6.90%	1.57%
2001	0.93	0.88	15.81	0.054	5.80%	0.31%
2002	1.54	0.88	16.83	0.429	9.30%	3.99%
Compound Growth Rates						
'96-2000	-5.18%	1.17%	0.58%		Ave. Internal Growth (br):	0.82%
'97-2001	-8.38%	0.00%	-0.88%		ADD: External Growth (sv):	0.20%
'98-2002	71.03%	0.00%	1.87%			
Ave Compound Gr.	19.16%	0.39%	0.82%		Historic "br + sv" Gr.	1.02%

Value Line Historical Gr. (Avg of 5 and 10 yr. if both are available)	EPS	DPS	BVPS
	-3.00%	-2.00%	1.00%

Projected Growth

Retention Growth Calculation

Value Line	EPS	DPS	BVPS	Retention Ratio (b)	Equity Return (r)	Growth (b*r)
2003	$1.50	$0.88	$17.10	0.413	8.50%	3.51%
2004	1.55	0.92	17.35	0.406	9.00%	3.66%
2006-08 est'd	1.85	1.04	18.20	0.438	10.50%	4.60%

Analysts Estimates					
Value Line	7.50%	3.00%	2.00%	Projected Growth (br):	3.92%
First Call	n/a			ADD: External Growth (sv):	0.07%
Average Proj'd Growth	7.50%	3.00%	2.00%	Projected "br + sv" Gr.	4.67%

SOURCE: The Value Line Investment Survey; C.A. Turner Utility Reports; First Call Corporation

BURDETTE - DIRECT
ER-2004-0034 Aquila, Inc.

Discounted Cash Flow Growth Parameters
Cleco Corporation

Historical Growth

	Historical Data	Compound Growth EPS	DPS	BVPS	Retention Ratio (b)	Retention Growth Equity Return (r)	Growth (b*r)
1	1996	1.12	0.77	8.30	0.313		
2	1997	1.09	0.79	8.68	0.275		
3	1998	1.12	0.81	9.07	0.277	12.70%	3.52%
4	1999	1.19	0.83	9.44	0.303	12.90%	3.90%
5	2000	1.46	0.85	10.04	0.418	14.90%	6.23%
6	2001	1.51	0.87	10.69	0.424	14.60%	6.19%
7	2002	1.52	0.90	11.77	0.408	13.10%	5.34%
8							
9		Compound Growth Rates				Ave. Internal	
10	'96-2000	6.85%	2.50%	4.87%		Growth (br):	5.04%
11							
12	'97-2001	8.49%	2.44%	5.35%		ADD: External Growth (sv):	0.34%
13							
14	'98-2002	7.91%	2.67%	6.73%			
15						Historic	
16	Ave.Compound Gr.	7.75%	2.54%	5.65%		"br + sv" Gr.	5.37%
17							
18	Value Line	EPS	DPS	BVPS			
19	Historical Gr.	5.50%	2.75%	5.00%			
20	(Avg of 5 and 10 yr. if both are available)						
21							

Projected Growth

Retention Growth Calculation

	Value Line	EPS	DPS	BVPS	Retention Ratio (b)	Equity Return (r)	Growth (b*r)
22							
23							
24							
25	2003	$1.30	$0.90	$10.40	0.308	12.50%	3.85%
26	2004	1.40	0.90	10.90	0.357	13.00%	4.64%
27	2006-08 est'd	1.50	0.90	12.75	0.400	13.50%	5.40%
28							
29	*Analyst's Estimates*					Projected	
30	Value Line	-	0.50%	3.00%		Growth (br):	4.63%
31							
32	First Call	5.00%				ADD: External Growth (sv):	0.21%
33							
34							
35	Average					Projected	
36	Proj'd Growth	5.00%	0.50%	3.00%		"br + sv" Gr.	5.61%

SOURCE: The Value Line Investment Survey; C.A. Turner Utility Reports; First Call Corporation

BURDETTE - DIRECT
ER-2004-0034 Aquila, Inc.

Discounted Cash Flow Growth Parameters
Green Mountain Power

Historical Growth

Compound Growth

	Historical Data	EPS	DPS	BVPS
1	1996	2.22	2.12	22.15
2	1997	1.57	1.61	22.02
3	1998	-0.80	0.96	20.09
4	1999	0.46	0.55	18.60
5	2000	-0.06	0.55	16.53
6	2001	1.88	0.55	17.81
7	2002	1.96	0.60	18.51
8				
9		Compound Growth Rates		
10	'96-2000	-	-28.63%	-7.06%
11				
12	'97-2001	4.61%	-23.55%	-5.17%
13				
14	'98-2002	-	-11.09%	-2.03%
15				
16	Ave.Compound Gr.	4.61%	-22.09%	-4.75%
17				
18	Value Line	EPS	DPS	BVPS
19	Historical Gr.			
20	(Avg of 5 and 10 yr. if both are available)			

Retention Growth

	Retention Ratio (b)	Equity Return (r)	Growth (b*r)
1	0.045		
2	-0.025		
3	2.200	-	
4	-0.196	2.40%	-0.47%
5	10.167	-	
6	0.707	10.70%	7.57%
7	0.694	12.30%	8.53%
8			
9		Ave. Internal	
10		Growth (br):	5.21%
11			
12		ADD: External	
13		Growth (sv):	-0.15%
14			
15		Historic	
16		"br + sv" Gr.	5.06%

Projected Growth

Retention Growth Calculation

	Value Line	EPS	DPS	BVPS	Retention Ratio (b)	Equity Return (r)	Growth (b*r)
24	2003	$1.90	$0.76	$19.65	0.600	9.50%	5.70%
25	2004	1.95	0.80	19.80	0.590	10.00%	5.90%
26	2006-08 est'd	2.15	0.92	20.85	0.572	10.50%	6.01%
27							
28							
29	*Analyst's Estimates*					Projected	
30	Value Line	9.50%	8.50%	3.00%		Growth (br):	5.87%
31							
32	First Call					ADD: External	
33						Growth (sv):	0.00%
34							
35	Average					Projected	
36	Proj'd Growth	9.50%	8.50%	3.00%		"br + sv" Gr.	6.01%

SOURCE: The Value Line Investment Survey; C.A. Turner Utility Reports; First Call Corporation

Schedule MB- 5
Page 4 of 5

BURDETTE - DIRECT
ER-2004-0034 Aquila, Inc.

Discounted Cash Flow Growth Parameters
Hawaiian Electric Industries, Inc.

Historical Growth

	Historical Data	EPS	DPS	BVPS	Retention Ratio (b)	Retention Growth Equity Return (r)	Growth (b*r)
1	1996	2.60	2.41	25.05	0.073		
2	1997	2.76	2.44	25.54	0.116		
3	1998	2.96	2.48	25.75	0.162	11.40%	1.85%
4	1999	2.89	2.48	26.31	0.142	11.00%	1.56%
5	2000	2.54	2.48	25.43	0.024	9.80%	0.23%
6	2001	3.19	2.48	26.11	0.223	11.60%	2.58%
7	2002	3.24	2.48	28.43	0.235	11.30%	2.65%
8							
9	Compound Growth Rates					Ave. Internal Growth (br):	1.77%
10	'96-2000	-0.58%	0.72%	0.38%			
11						ADD: External Growth (sv):	1.01%
12	'97-2001	3.69%	0.41%	0.55%			
13						Historic "br + sv" Gr.	2.78%
14	'98-2002	2.29%	0.00%	2.51%			
15							
16	Ave.Compound Gr.	2.99%	0.38%	1.15%			
17							
18	Value Line	EPS	DPS	BVPS			
19	Historical Gr.	2.50%	0.75%	1.50%			
20	(Avg of 5 and 10 yr. if both are available)						
21							

Projected Growth

Retention Growth Calculation

	Value Line	EPS	DPS	BVPS	Retention Ratio (b)	Equity Return (r)	Growth (b*r)
22	2003	$2.80	$2.48	$29.15	0.114	9.50%	1.09%
23	2004	2.85	2.48	30.10	0.130	9.50%	1.23%
24	2006-08 est'd	3.00	2.48	33.00	0.173	9.00%	1.56%
25							
26	*Analyst's Estimates*					Projected Growth (br):	1.29%
27	Value Line	-	-	3.50%			
28							
29	First Call	2.80%				ADD: External Growth (sv):	0.23%
30							
31							
32	Average Proj'd Growth	2.80%	=	3.50%		Projected "br + sv" Gr.	1.79%
33							
34							
35							
36							

SOURCE: The Value Line Investment Survey; C.A. Turner Utility Reports; First Call Corporation

BURDETTE - DIRECT
ER-2004-0034 Aquila, Inc.

Stock Prices and Dividend Yields

	6-Week Stock Price	2004 Expected Dividend	Dividend Yield
Central Vermont Public Service	$23.40	$0.92	3.93%
Cleco Corporation	$17.11	$0.90	5.26%
Green Mountain Power	$22.60	$0.80	3.54%
Hawaiian Electric Industries	$45.47	$2.48	5.45%
			4.55%

Stock prices are daily average from 27 October 2003 through 3 December 2003.

BURDETTE - DIRECT
ER-2004-0034 Aquila, Inc.

DCF Cost of Common Equity Calculations

DCF Cost of Equity using 6-week stock price

		Growth			Cost of Equity	
	Yield	Low	Average	High	Low	Average	High
Central Vermont Public Service	3.93%	1.00%	2.55%	7.50%	4.93%	6.48%	11.43%
Cleco Corporation	5.26%	0.50%	4.42%	7.75%	5.76%	9.69%	13.01%
Hawaiian Electric Industries	3.54%	0.38%	2.01%	3.50%	3.91%	5.55%	7.04%
Green Mountain Power	5.45%	3.00%	6.11%	9.50%	8.45%	11.57%	14.95%
Average	4.55%	1.22%	3.77%	7.06%	5.77%	8.32%	11.61%

DCF Using Average Projected Growth

	Dividend Yield	Average Projected Growth	Cost of Equity
Central Vermont Public Service	3.93%	4.29%	8.23%
Cleco Corporation	5.26%	3.53%	8.79%
Hawaiian Electric Industries	3.54%	2.70%	6.23%
Green Mountain Power	5.45%	6.75%	12.21%
Average	4.55%	4.32%	8.86%

Cost of Equity Based on DCF Analysis

Dividend Yield	Growth	Cost of Equity
4.55%	5.00%	9.55%

Source: Schedules MB-6, MB-7.

BURDETTE - DIRECT
ER-2004-0034 Aquila, Inc.

Capital Assest Pricing Model (CAPM) Cost of Common Equity (Ke)

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

Market Return Equal to Ibbotsons Large Company Stocks

Risk Free Rate (Rf):	4.25%	Risk Free Rate (Rf):	5.60%
Return on the Market (Rm):	12.20%	Return on the Market (Rm):	12.20%
Market premium:	7.95%	Market premium:	6.60%

	Beta	CAPM Ke	CAPM Ke
Central Vermont Public Service	0.45	7.83%	8.57%
Cleco Corporation	0.90	11.41%	11.54%
Hawaiian Electric Industries	0.60	9.02%	9.56%
Green Mountain Power	0.55	8.62%	9.23%
Average CAPM cost of equity:	0.63	9.22%	9.73%

Market Return Equal to Average of Large and Small Company Stocks

Risk Free Rate (Rf):	4.25%	Risk Free Rate (Rf):	5.60%
Return on the Market (Rm):	14.55%	Return on the Market (Rm):	14.55%
Market premium:	10.30%	Market premium:	8.95%

	Beta	CAPM Ke	CAPM Ke
Central Vermont Public Service	0.45	8.89%	9.63%
Cleco Corporation	0.90	13.52%	13.66%
Hawaiian Electric Industries	0.60	10.43%	10.97%
Green Mountain Power	0.55	9.92%	10.52%
Average CAPM cost of equity:	0.63	10.69%	11.19%

Overall average of all four calculations: 10.21%
Overall average without Cleco Corporation: 9.43%

Source: Value Line Investment Survey; Ibottson Associates;

BURDETTE - DIRECT
ER-2004-0034 Aquila, Inc.

Return on Equity (ROE) Analysis Summary and Recommendation

DCF Analysis	9.55%

Capital Asset Pricing Model Analysis

Method 1:	9.22%
Method 2:	9.73%
Method 3:	10.69%
Method 4:	11.19%
Overall average:	10.21%
Overall average with Cleco Corp:	9.43%

Recommendation

Low:	**9.60%**
High:	**10.10%**

BURDETTE - DIRECT
ER-2004-0034 Aquila, Inc.

Weighted Average Cost of Capital

	Amount	Percent	Cost Rate	Weighted Cost	Cost Rate	Weighted Cost
Common Stock Equity	$1,607.9	40.14%	***9.60%***	3.85%	***10.10%***	4.05%
Long Term Debt	$2,398.0	59.86%	7.48%	4.48%	7.48%	4.48%
	$ 4,006	100.00%		**8.33%**		**8.53%**

Pre-Tax Interest Coverage Tax factor = 1.62308

	Weighted Cost	Pre-tax Weighted Cost	Weighted Cost	Pre-tax Weighted Cost
Common Stock Equity	3.85%	6.25%	4.05%	6.58%
Long Term Debt	4.48%	4.48%	4.48%	4.48%
Total	8.33%	10.73%	8.53%	11.06%
Pre-tax weighted cost:		10.73%	Pre-tax wtd. cost:	11.06%
Cost of Debt:		4.48%	Cost of Debt:	4.48%
Pre-tax Interest Coverage		**2.40**		**2.47**

Source: Schedules MB-2, MB-5, MB-6, MB-7.

Aquila Networks - MPS & SJLP

Common Equity Ratios

For OPC Witness Burdette's Comparable Companies

Company Name	Common Equity
Central Vermont Public Service	54.10%
Cleco Corporation	38.20%
Green Mountain Power	48.30%
Hawaiian Electric Industries, Inc.	46.50%
Comparable Companies' Averages	46.78%
Witness Burdette's Proposed Equity Ratio	40.14%

Source: Direct Testimony of OPC Witness Mark Burdette, Schedule MB-4

Aquila Networks - MPS & SJLP

Returns on Common Equity for 2002

For OPC Witness Burdette's Comparable Companies

Company Name	ROE
Central Vermont Public Service	9.30%
Cleco Corporation	13.10%
Green Mountain Power	12.30%
Hawaiian Electric Industries, Inc.	11.30%
Comparable Companies' Averages	11.50%
Witness Burdette's Proposed Return on Equity	9.6% -10.1%

Source: Direct Testimony of OPC Witness Mark Burdette, Schedule MB-5

Aquila Networks - MPS & SJLP

Before-Tax Interest Coverage Ratios

For OPC Witness Burdette's Comparable Companies

Company Name	Interest Coverage
Central Vermont Public Service	4.10
Cleco Corporation	3.10
Green Mountain Power	3.50
Hawaiian Electric Industries, Inc.	3.00
Comparable Companies' Averages	3.43
Witness Burdette's Proposed Interest Coverage	2.47

Source: Direct Testimony of OPC Witness Mark Burdette, Schedules MB-3 and MB-10

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the matter of Aquila, Inc. d/b/a Aquila Networks-MPS and Aquila Networks-L&P, for authority to file tariffs increasing electric rates for the service provided to customers in the Aquila Networks-MPS and Aquila Networks-L&P area	)	Case No. ER-2004-0034
In the matter of Aquila, Inc. d/b/a Aquila Networks-L&P, for authority to file tariffs Increasing steam rates for the service provided To customers in the Aquila Networks-L&P area	)	Case No. HR-2004-0024

County of ~~Jackson~~ Franklin)
) ss
State of ~~Missouri~~ Florida)

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 "Rebuttal 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 23 day of January, 2004.

Karen Y. Brannan
Notary Public
~~Terry D. Estes~~

My Commission expires:

Karen Y. Brannan
MY COMMISSION # CC941741 EXPIRES
June 4, 2004
BONDED THRU TROY FAIN INSURANCE, INC.