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MISSOURI PUBLIC SERVICE COMMISSION

CASE NO. ER-2007-0002

REBUTTAL TESTIMONY

OF

JAMES H. VANDER WEIDE, PH.D.

ON

BEHALF OF

UNION ELECTRIC COMPANY
d/b/a AMERENUE

St. Louis, Missouri
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OF

DR. JAMES H. VANDER WEIDE

CASE NO. ER-2007-0002

I. INTRODUCTION AND SUMMARY

Q. Please state your name, title, and business address.

A. My name is James H. Vander Weide. I am Research Professor of Finance and Economics at the Fuqua School of Business of Duke University. I am also President of Financial Strategy Associates, a firm that provides strategic and financial consulting services to business clients. My business address is 3606 Stoneybrook Drive, Durham, North Carolina.

Q. Are you the same James H. Vander Weide who presented direct testimony in this proceeding filed in July 2006?

A. Yes, I am.

Q. What is the purpose of your testimony?

A. I have been asked by Union Electric Company d/b/a AmerenUE ("AmerenUE" or "the Company") to respond to the direct testimonies filed by Mr. Stephen G. Hill, Dr. J. Randall Woolridge, Mr. Michael Gorman, Mr. Charles W. King, and Ms. Billie Sue LaConte. Mr. Hill's testimony is filed on behalf of the Missouri Public Service Commission Staff ("Staff"), Dr. Woolridge's testimony is filed on behalf of the State of Missouri, Mr. Gorman's testimony is filed on behalf of the Missouri Industrial Energy Consumers ("MIEC"), Mr. King's testimony is filed on behalf of the Office of Public

Counsel ("OPC"), and Ms. LaConte's testimony is filed on behalf of the Missouri Energy Group ("MEG").

Q. Please summarize your rebuttal testimony.

A. My rebuttal testimony can be summarized as follows:

Tests of Reasonableness. Dr. Woolridge and Mr. Hill attempt to support their low 9.0 percent and 9.25 percent recommended rates of return on equity by citing several tests of reasonableness. Dr. Woolridge cites data on market-to-book ratios and expected rates of return on equity for electric utilities; Dr. Woolridge and Mr. Hill refer to certain research on market risk premiums; and Mr. Hill cites Towers Perrin's assumed rate of return on pension plan assets and Value Line's 3- to 5-year expected rate of return on investments in electric utility stocks.

Dr. Woolridge's first test of reasonableness is based on his incorrect assumption that companies with market-to-book ratios greater than 1.0 are necessarily earning more than their costs of equity. Contrary to his hypothesis, I demonstrate that there are hundreds of companies that have negative or extremely low expected rates of return on equity, yet have market-to-book ratios exceeding 1.0. Since Dr. Woolridge's basic assumption is incorrect, his test of reasonableness is meaningless.

With regard to Dr. Woolridge's and Mr. Hill's cited research on the equity risk premium, I demonstrate that they have mischaracterized this research as "current," when most of this research was conducted prior to 2001. I also demonstrate that these witnesses have failed to recognize the weaknesses in the research they cite, and I note that this Commission was familiar with this research when it granted rates of return on equity to electric utilities in 2006 in the range 10.9 percent to 11.25 percent.

With regard to Mr. Hill's tests of reasonableness, I demonstrate that Towers Perrin's assumed rate of return on pension plan assets is not comparable to Mr. Hill's recommended rate of return on equity because it is based on an entirely different conceptual foundation. Even if were comparable, Towers Perrin's assumed rate of return would imply a significantly higher cost of equity than Mr. Hill is recommending in this proceeding. Further, I demonstrate that the Value Line data on 3- to 5-year expected returns cited by Mr. Hill could not possibly be estimates of the cost of equity because Value Line's average expected return for Mr. Hill's companies, 4.5 percent, is less than the current 5 percent interest rate on short-term Treasury bills.

As an alternative to Dr. Woolridge's and Mr. Hill's tests, I compare the Intervenors' recommended costs of equity, which range from 9.0 percent to 9.8 percent, to several indicators of the returns that investors expect to receive on other investments of comparable risk. I find that the Intervenors' recommended allowed returns are significantly less than the recent 10.8 percent – 11.25 percent allowed rates of return on equity in Missouri and other Midwestern states; they are significantly less than the recent 12.2 percent average FERC allowed rates of return on equity in electric transmission cases; they are significantly less than Value Line's 11.0 percent to 12.0 percent average expected rates of return on equity for electric and natural gas utilities; they are significantly less than the recent 15.18 percent Surface Transportation Board allowed rate of return on equity for regulated railroad companies; and they are significantly less than the 12.0 percent cost of equity one would obtain from reasonable applications of cost of equity models to comparable groups of companies. Each of these indicators of investors' expected returns suggests the Intervenors' recommended allowed returns on equity are significantly below the returns investors could

reasonably expect on investments of comparable risk. I conclude that AmerenUE would have no incentive to invest in its electric plant and equipment if the Commission were to authorize a rate of return on equity for AmerenUE as low as the rates of return recommended by the Intervenors.

Proxy Company Selection. I demonstrate that the Intervenors generally have adopted proxy company selection criteria that needlessly restrict the set of proxy companies, and that their incorrect choices of proxy companies have a significant impact on their cost of equity results. The purpose of proxy selection criteria is to identify the largest possible group of comparable risk companies that have sufficient data to reliably apply cost of equity methodologies such as the DCF, CAPM, and risk premium. However, rather than choosing the largest possible number of comparable risk companies as a proxy group for AmerenUE, Mr. Hill, Mr. Gorman, and Mr. King apply arbitrary selection criteria that significantly reduce the number of companies in their proxy groups.[1] These witnesses defend their choices of proxy groups on the grounds that these companies, in their opinion, are in similar lines of business as AmerenUE; but they fail to recognize that the average risk of their smaller samples of proxy companies, with a Value Line Safety Rank of 2 and an S&P bond rating of BBB+ or lower, is either similar to the average risk of my larger proxy group, which includes 34 electric companies, or, in the case of Mr. Hill's group, more risky than my group.

I demonstrate that it is preferable to choose the largest possible sample of comparable risk companies because the estimate of the cost of equity obtained from applying cost of equity methodologies to a single company is uncertain. Cost of equity methodologies

[1] Dr. Woolridge's low cost of equity result arises primarily from his incorrect choices of inputs in his DCF and CAPM analyses rather than from his choice of proxy group.

require estimates of quantities such as growth rates, betas, and expected risk premiums that necessarily involve a degree of uncertainty. However, the uncertainty in estimating the cost of equity by applying cost of equity methodologies to a single company can be significantly reduced by applying cost of equity models to a relatively large group of comparable risk companies. Intuitively, any over- and under-estimate of the cost of equity that arises from the application of cost of equity methods to a single company is averaged out by applying the methods to a larger group of comparable risk companies.

In addition, choosing a relatively small group of proxy companies requires a great deal of judgment, and the analyst may be tempted to choose a set of selection criteria that produce a desired result. The possibility of selection bias can be eliminated by starting with the largest possible group of comparable risk companies and eliminating only those companies with insufficient data to estimate the cost of equity.

Thus, the results of my application of cost of equity methods to a larger sample of companies that have the same or lower risk as Mr. Hill's, Mr. Gorman's, and Mr. King's smaller samples of companies are more reliable than the results from the smaller samples.

Discounted Cash Flow Model. The DCF model requires an estimate of the expected dividend yield and investors' expected future growth for each company. I demonstrate that the Intervenors' DCF results significantly underestimate AmerenUE's DCF cost of equity because they have incorrectly applied their own annual DCF models and significantly underestimated investors' expected future growth. Indeed, the Intervenors fail to provide any evidence that the historical and internal growth rates they use to estimate future growth reflect growth expectations of investors. My studies indicate that analysts'

growth forecasts are highly correlated with stock prices, while historical and internal growth rates used by the Intervenors are not. In contrast to the low DCF results obtained by the Intervenors, my updated DCF analysis applied to a large sample of electric companies produces a result of 11.75 percent.

Capital Asset Pricing Model. The CAPM requires estimates of the risk-free rate, company-specific risk factor or beta, and risk premium on the market portfolio. I demonstrate that the Intervenors' low CAPM results are based on their incorrect choices for these inputs. If the Intervenors had based their CAPM calculations on correct inputs from Ibbotson Associates for the market risk premium, the average Value Line beta for a large sample of risk comparable companies, and the interest rate on long-term U.S. Treasury securities, the Intervenors would have obtained a CAPM result of 11.8 percent [4.9 + (.97 x 7.1) = 11.8], 200 to 280 basis points higher than the Intervenors' low recommended costs of equity. Thus, a correctly implemented CAPM analysis does not support the Intervenors' recommended costs of equity for AmerenUE.

Mr. Hill's Modified Earnings Price Ratio ("MEPR" and Market-to-Book ("MTB") Methods. I demonstrate that Mr. Hill's MEPR and MTB methods are not widely-accepted methods of estimating the cost of equity. The MEPR method suggests that the cost of equity lies between a company's earnings/price ratio and its expected rate of return on book equity. However, the low end of this range, the earnings/price ratio, provides no information relevant to the cost of equity because it gives no consideration to potential growth in earnings; and the use of the rate of return on equity as the upper bound for the cost of equity range depends on Mr. Hill's incorrect assumption that a company with market-to-book ratios exceeding 1.0 is earning more than its cost of equity. Further, Mr. Hill's MTB

method is circular in that it requires an estimate of the earned rate of return on equity to estimate the cost of equity, even though, for a regulated company like AmerenUE, the cost of equity determines the earned rate of return on equity through the regulatory process.

Mr. Gorman's Risk Premium Analyses. I demonstrate that Mr. Gorman's risk premium analyses fail to reflect the basic underlying relationship between allowed rates of return on equity and interest rates, namely, that the risk premium implied by allowed rates of return on equity tends to increase when interest rates decline. Once this flaw in Mr. Gorman's risk premium analyses is corrected, Mr. Gorman's risk premium analyses produce cost of equity estimates that are 90 basis points higher than Mr. Gorman's recommended cost of equity.

Ms. LaConte's Risk Analysis. I refute Ms. LaConte's arguments about my financial risk adjustment and her conclusion that AmerenUE is significantly less risky than other electric utilities. As I explain, Ms. LaConte incorrectly assumes that my risk adjustment is based on the market price of AmerenUE's stock, even though AmerenUE does not have publicly-traded stock.

Q. Is there anything in the testimonies of Mr. Hill, Dr. Woolridge, Mr. Gorman, Mr. King, or Ms. LaConte that causes you to change your recommended cost of equity for AmerenUE?

A. No.

II. REBUTTAL OF MR. HILL

A. Reasonableness of Mr. Hill's ROE Recommendation

Q. What is Mr. Hill's recommended rate of return on equity for AmerenUE?

A. Mr. Hill recommends that AmerenUE be allowed to earn a rate of return on equity equal to 9.25 percent.

Q. Do you agree with Mr. Hill's 9.25 percent rate of return on equity recommendation for AmerenUE?

A. No. Mr. Hill's 9.25 percent rate of return on equity recommendation is significantly below every reasonable indicator of the returns that investors expect to receive on other investments of comparable risk—it is significantly less than allowed rates of return on equity in Missouri and other states, it is significantly less than FERC allowed rates of return on equity in electric transmission cases, it is significantly less than Value Line's average expected rates of return on equity for electric and natural gas utilities, and it is significantly less than the cost of equity one would obtain from reasonable applications of cost of equity models to comparable groups of companies. AmerenUE would have no incentive to invest in its electric plant and equipment if Mr. Hill's recommended rate of return on equity were approved.

Q. How does Mr. Hill's 9.25 percent recommended rate of return on equity compare to the allowed rates of return on equity during the first three quarters of 2006 for Midwestern electric and natural gas utilities?

A. As shown in Vander Weide Rebuttal Schedule JVW-1, the average allowed rate of return on equity during the first three quarters of 2006 for Midwestern electric and gas utilities was 10.8 percent. Mr. Hill's recommended 9.25 percent return on equity would be

155 basis points less than the average allowed rate of return on equity for other Midwestern utilities.

Q. How does Mr. Hill's 9.25 percent recommended rate of return on equity compare to the Commission's recently authorized rates of return on equity for Empire District Electric Company and Kansas City Power & Light?

A. The Commission recently authorized a rate of return on equity equal to 10.9 percent in the Empire District Electric case, ER-2006-0315, and a rate of return on equity equal to 11.25 percent in the Kansas City Power & Light proceeding, ER-2006-0314. Thus, Mr. Hill's recommended 9.25 percent rate of return on equity is 165 to 200 basis points less than the rates of return on equity the Commission recently authorized for other electric utilities in Missouri.

Q. How does Mr. Hill's 9.25 percent recommended rate of return on equity compare to recent FERC allowed rates of return on equity in electric transmission cases?

A. Since April 2005, FERC allowed rates of return on equity in electric transmission cases have averaged 12.2 percent.

Q. What are Value Line's projected rates of return on equity for electric and natural gas utilities?

A. As shown in Table 1 below, Value Line projects rates of return on equity for these companies in the range 11 percent to 12 percent.

TABLE 1
VALUE LINE'S PROJECTED RATES OF RETURN ON EQUITY
FOR ELECTRIC AND NATURAL GAS UTILITIES[2]

Industry Group	*2006*	*2007*	*2009-2011*
Eastern Electric	11.0%	11.0%	11.5%
Central Electric	11.0%	11.0%	11.5%
Western Electric	11.0%	11.0%	11.5%
Natural Gas Utilities	11.0%	11.5%	12.0%

Q. Do Value Line's data on projected rates of return on equity for electric and natural gas utilities support Mr. Hill's 9.25 percent recommended rate of return on equity for AmerenUE?

A. No. Value Line's data indicate that Value Line expects electric and natural gas utilities to earn rates of return on book equity that significantly exceed Mr. Hill's recommended 9.25 percent rate of return on book equity in this proceeding. If Value Line thought that Mr. Hill's recommended 9.25 percent rate of return on equity were a reasonable estimate of the typical utility's cost of equity, their average expected rates of return on equity for utilities would likely approximate 9.25 percent because Value Line understands that utility rates are established through rate of return regulation. Value Line certainly would not expect that regulated electric and gas utilities would earn rates of return on equity in the range 11 percent to 12 percent, a range which is approximately 175 to 275 basis points higher than Mr. Hill's recommendation, if they thought that Mr. Hill's recommended 9.25 percent were a reasonable estimate of the typical utility's cost of equity.

2 Value Line Investment Survey, Issue 1, p. 157, December 8, 2006 (Eastern Electric); Issue 3, p. 459, December 15, 2006 (Natural Gas); Issue 5, p. 695, December 29, 2006 (Central Electric); and Issue 11, p. 1774, November 10, 2006 (Western Electric).

Q. How does Mr. Hill's recommended rate of return on equity compare to the cost of equity one would obtain from reasonable applications of cost of equity models to reasonable comparable groups of companies?

A. As shown in my direct testimony, reasonable applications of cost of equity models to reasonable comparable groups of companies produce a cost of equity of 11.5 percent before any adjustment to compensate for the higher financial risk of AmerenUE's recommended capital structure and approximately 12 percent after such an adjustment.

Q. If Mr. Hill's recommended rate of return on equity is significantly below allowed rates of return on equity in this and other states, how does Mr. Hill attempt to justify his low recommendation?

A. Mr. Hill offers four reasons why AmerenUE's allowed rate of return on equity should be set significantly below the allowed rates of return on equity in this and other states. First, he argues that published data on Ameren's assumed 8.5 percent overall rate of return on pension plan assets supports a rate of return on equity below his 9.25 percent rate of return on equity recommendation. (Hill Direct at 6.) Second, he contends that his 9.25 percent rate of return on equity recommendation is supported by return expectations published by Value Line and A. G. Edwards. (Hill Direct at 8—9.) Third, he argues that current research related to the market risk premium suggests that the required market risk premium is significantly less than the long-run historical average market risk premium. (Hill Direct at 10—14.) Fourth, he argues that "regulatory commissioners, in general, are not aware of the significant new research regarding the market risk premium and the reduction of long-term investor return expectations." (Hill Direct at 15.)

1. Towers Perrin's Assumed Overall Rate of Return on Pension Plan Assets

Q. What overall rate of return on pension plan assets does Ameren use for the purpose of pension plan accounting?

A. As discussed in the Company's response to Staff Data Request No. 158, Ameren uses an assumed 8.5 percent overall rate of return on pension plan assets for the purpose of pension plan accounting. The Company's response to Staff Data Request No. 158, prepared by Mr. C. Kenneth Vogel, an actuary at Towers Perrin, contains information supporting the assumed 8.5 percent overall rate of return on pension plan assets for the purpose of pension plan accounting.

Q. Is the assumed 8.5 percent rate of return on pension plan assets for the purpose of pension plan accounting conceptually similar to Mr. Hill's 9.25 percent estimate of AmerenUE's cost of equity?

A. No. First, the assumed 8.5 percent overall rate of return on pension plan assets is the assumed rate of return on a portfolio of stocks and bonds rather than an assumed rate of return on stocks alone. Thus, if anything, the assumed overall rate of return would be more comparable to Mr. Hill's recommended weighted average cost of capital than to Mr. Hill's recommended cost of equity. Second, the assumed rate of return on pension plan assets is the assumed rate of return on the *market value* of the pension plan assets, not the book value, or historical cost, of the pension plan assets. In contrast, Mr. Hill's estimate of AmerenUE's cost of equity is his estimate of the required rate of return on the book value of AmerenUE's equity. Third, the assumed rate of return on pension plan assets is an accounting assumption determined in accordance with Generally Accepted Accounting Principles, not an estimate of the market-determined cost of equity.

Q. You note that Towers Perrin's assumed 8.5 percent rate of return on pension plan assets is more comparable conceptually to Mr. Hill's recommended weighted average cost of capital than to his recommended cost of equity. What weighted average cost of capital does Mr. Hill recommend for AmerenUE in this proceeding?

A. Mr. Hill recommends a weighted average cost of capital for AmerenUE equal to 7.403 percent. [See Mr. Hill's Exhibit___(SGH-1), Schedule 12, page 1 of 2.]

Q. Since Towers Perrin's assumed 8.5 percent overall rate of return on pension plan assets is more than 110 basis points higher than Mr. Hill's recommended weighted average cost of capital for AmerenUE, is there any reasonable basis for Mr. Hill's claim that Towers Perrin's assumed overall rate of return on pension plan assets supports his recommended cost of capital for AmerenUE?

A. No. Since Towers Perrin's assumed 8.5 percent overall rate of return on pension plan assets is 110 basis points higher than Mr. Hill's recommended weighted average cost of capital, it certainly does not support Mr. Hill's cost of capital recommendation in this proceeding. In addition, as noted below, Towers Perrin's assumed overall rate of return on pension plan assets is not even conceptually comparable to Mr. Hill's recommended cost of capital because Towers Perrin's return must be based on Generally Accepted Accounting Principles, while Mr. Hill's return must be based on market economic principles.

Q. Recognizing that Towers Perrin's assumed overall rate of return on pension plan assets is not conceptually comparable to Mr. Hill's recommended cost of capital, have you nonetheless calculated what rate of return on equity would be

required to allow AmerenUE to earn an overall rate of return equal to Towers Perrin's assumed 8.5 percent return on pension plan assets?

A. Yes. As shown below, using the data in Mr. Hill's Exhibit__SGH-1, Schedule 12, page 1 of 2, a cost of equity equal to 11.34 percent would be required for AmerenUE to earn an overall rate of return equal to 8.5 percent.

Capital Source	*Percent of Total*	*Cost Rate*	*Weighted Cost*
Common Equity	52.39%	11.34%	5.943%
Preferred Stock	2.04%	5.19%	0.106%
Long-term Debt	45.47%	5.38%	2.446%
Short-term Debt	0.10%	5.11%	0.005%
Total	100.00%		8.500%

Q. Mr. Hill sometimes focuses on Towers Perrin's assumed rate of return on equity rather than on its overall assumed return on pension plan assets. What rate of return on equity investments did Towers Perrin use to develop its assumed 8.5 percent rate of return on pension plan assets?

A. Towers Perrin does not explicitly state what rate of return on equity it used to develop its assumed 8.5 percent rate of return on pension plan assets. Its response to Data Request 158 merely states:

Based on Ameren's current asset mix of 64 percent equities and 36 percent fixed income (source: 2005 Annual Report) and an assumed inflation level of 3.0 percent –3.5 percent, the building block method produces the following expected returns:

	80 Years	*40 Years*
Equity return * 60%	4.5%	3.5%
Fixed Income return * 40%	1.0%	1.2%
Inflation	3.0%-3.5%	3.0%-3.5%
Expected return	8.5%-9.0%	7.7%-8.2%

Q. The last row of the column with the heading "80 Years" shows an expected return of 8.5 percent to 9.0 percent. How is that range of returns derived?

A. The low end of the expected return range, 8.5 percent, is simply the sum of 4.5 percent, 1 percent, and 3 percent; while the upper end of the range, 9 percent, is the sum of 4.5 percent, 1 percent, and 3.5 percent.

Q. You note that the expected return of 8.5 percent is the sum of 4.5 percent, 1 percent, and 3 percent. What does the 4.5 percent figure in this sum represent?

A. The 4.5 percent figure represents the historical, inflation-adjusted, or real geometric mean return on large capitalization stocks over the last 80 years, as reported by Ibbotson Associates in its *2006 Yearbook*, multiplied by an assumed 60 percent equity asset mix (that is, the assumed portfolio consists of 60 percent equities and 40 percent debt).

Q. If the real return associated with a portfolio containing 60 percent equities is 4.5 percent, what is the real return associated with a portfolio containing 100 percent equities?

A. The real return associated with a portfolio containing 100 percent equities would be 4.5 percent divided by 0.6, or 7.5 percent using Towers Perrin's assumptions.

Q. If the real return on an all-equity portfolio were 7.5 percent and the inflation rate were 3 percent, what is the nominal return on the all-equity portfolio?

A. The nominal return on the all-equity portfolio would be 10.5 percent.

Q. Does the implied 10.5 percent return on equity associated with Towers Perrin's 8.5 percent expected return on pension plan assets support Mr. Hill's recommended 9.25 percent cost of equity in this proceeding?

A. No. In addition to the fact that Towers Perrin's assumed return on pension plan assets is a completely different concept than Mr. Hill's estimate of the cost of equity, the 10.5 percent nominal return on equity that supports the assumed 8.5 percent pension plan return is 125 basis points higher than Mr. Hill's low 9.25 percent estimate of AmerenUE's cost of equity.

Q. You mention that the real returns shown in the 80-year column represent the historical geometric mean return on large capitalization stocks as reported by Ibbotson Associates in its *2006 Yearbook*. Does Ibbotson Associates recommend that historical geometric mean return data be used to estimate the cost of equity?

A. No. Ibbotson Associates recommends that its geometric mean return data be used only to report past performance. For the purpose of estimating the cost of equity, Ibbotson Associates recommends that its arithmetic mean risk premium over the longest available period (using the *2006 Yearbook* data, 80 years) be used to estimate the cost of equity.

Q. Why does Ibbotson Associates recommend using data from the entire 80-year period to estimate the cost of equity, rather than using data from a 40-year period?

A. Ibbotson Associates recommends using data from the complete 80-year period from 1926 through 2005 to estimate the cost of equity because the longer data series is more stable and reduces the possibility of bias associated with shorter time periods:

> The estimate of the equity risk premium depends on the length of the data series studied. A proper estimate of the equity risk premium requires a data series long enough to give a reliable average without being unduly influenced by very good and very poor short-term returns. When calculated using a long data series, the historical equity risk premium is relatively stable. Furthermore, because an average of the realized equity risk premium is quite volatile when calculated using a short history, using a long series makes it less likely that the analyst can justify any number he or she wants.
>
> ...The 80-year period starting with 1926 is representative of what can happen: it includes high and low returns, volatile and quiet markets, war and peace, inflation and deflation, and prosperity and depression. Restricting attention to a shorter historical period underestimates the amount of change that could occur in a long future period. Finally, because historical event-types (not specific events) tend to repeat themselves, long-run capital market return studies can reveal a great deal about the future. Investors probably expect "unusual" events to occur from time to time, and their return expectations reflect this. [*SBBI Valuation Edition 2006 Yearbook*, pp. 82—83.]

Q. Why does Ibbotson Associates recommend using the arithmetic mean return, not the geometric mean return, to estimate the cost of equity?

A. As discussed in my direct testimony at p. 38 and in Schedule JVW-7, Ibbotson Associates recommends using the arithmetic mean return to estimate the cost of equity because the arithmetic mean is the best estimate of the expected future rate of return; and the cost of equity reflects the expected future rate of return on an investment:

> The equity risk premium data presented in this book are arithmetic average risk premia as opposed to geometric average risk premia. The arithmetic average equity risk premium can be demonstrated to be

> most appropriate when discounting future cash flows. For use as the expected equity risk premium in either the CAPM or the building block approach, the arithmetic mean or the simple difference of the arithmetic means of stock market returns and riskless rates is the relevant number. This is because both the CAPM and the building block approach are additive models, in which the cost of capital is the sum of its parts. The geometric average is more appropriate for reporting past performance, since it represents the compound average return. [Ibbotson Associates, *op. cit.*, p. 77.]

Q. Since Ibbotson Associates recommends that the cost of equity be estimated using arithmetic mean risk premium data over the longest available period, *i.e.*, 80 years at present, why might it be appropriate for Towers Perrin to base its assumed rate of return on pension assets on geometric mean return data over both 40-year and 80-year periods?

A. It might be appropriate for Towers Perrin to use geometric mean return data over 40-year and 80-year periods for the purpose of determining the assumed rate of return on pension plan assets because the assumed rate of return on pension plan assets is based on Generally Accepted Accounting Principles standards rather than on an estimate of the cost of equity. Specifically, Financial Accounting Standard No. 87 states that in determining the assumed rate of return on plan assets "appropriate consideration should be given to the returns being earned by the plan assets in the fund and the rates of return expected to be available for reinvestment." The "returns being earned by the plan assets" might be estimated using geometric mean return data, even though arithmetic mean return data are the only appropriate data that should be used to estimate the cost of equity.

Q. Recognizing that Ibbotson Associates recommends using the arithmetic mean risk premium over the 80-year time period 1926 – 2005, what cost of equity does the Ibbotson data support?

A. Over the period from 1926 through 2005, the arithmetic mean return on large company stocks was 12.3 percent, and the arithmetic mean risk premium was 7.1 percent. When the long-run risk premium of 7.1 percent is added to the expected 4.9 percent yield on long-term Treasury bonds, one obtains a cost of equity estimate for the S&P 500 equal to 12.1 percent. Since the average electric utility beta is approximately 0.97, a 12.1 percent cost of equity for the S&P 500 implies an 11.8 percent cost of equity for the average electric utility.

Q. You also mentioned that Towers Perrin's assumed rate of return on pension assets is an assumed rate of return on the market value of Ameren's pension plan assets. Is it appropriate for Mr. Hill to compare a rate of return based on market values to his recommended rate of return on book value?

A. No. In using Towers Perrin's assumed rate of return on the market value of Ameren's pension plan assets to support his low recommended return on equity in this proceeding, Mr. Hill fails to recognize that his recommended return on equity will be applied to the book value of AmerenUE's equity. Thus, his comparison of the assumed rate of return on pension plan assets to his recommended cost of equity is entirely inappropriate for the further reason that the return on pension plan assets is measured on an entirely different base than Mr. Hill's recommended rate of return on equity.

Q. You noted earlier that the assumed rate of return on pension plan assets must be based on the market value of the assets in the plan. Did you recommend an

adjustment to your estimate of the cost of equity for your proxy companies to reflect the difference in the financial risk of AmerenUE's book value capital structure and the average market value capital structure of your proxy companies?

A. Yes, I did.

Q. Is this adjustment consistent with the standard that the assumed return on pension plan assets must be based on the market values of the plan assets?

A. Yes, it is. Specifically, my financial risk adjustment recognizes that investors base their estimates of the expected return and risk on their investments on market values, not book values.

Q. Does Towers Perrin's assumed 8.5 percent rate of return on pension plan assets demonstrate the reasonableness of Mr. Hill's cost of equity estimate for AmerenUE, as Mr. Hill asserts?

A. No. Since Towers Perrin's assumed rate of return on pension plan assets is determined on the basis of Generally Accepted Accounting Principles rather than on the basis of the economic principles used to estimate the cost of capital, it is an entirely different concept than AmerenUE's cost of equity. On a strictly logical basis, it makes no sense to use an entirely different concept to test the reasonableness of Mr. Hill's cost of equity estimate. Further, Towers Perrin's assumed rate of return on pension plan assets is an assumed rate of return on a portfolio of both debt and equity investments, not equity investments alone. Thus, if it were comparable at all, Towers Perrin's assumed rate of return would be more comparable to a weighted average cost of capital than to a cost of equity. On that basis, Towers Perrin's assumed 8.5 percent rate of return on pension plan assets also does not

support Mr. Hill's recommended weighted average cost of capital for AmerenUE in this proceeding because it is 110 basis points higher than Mr. Hill's recommendation.

2. Return Expectations of Value Line and A. G. Edwards

Q. On page 9 of his testimony, Mr. Hill attempts to corroborate his lower 9.25 percent recommended rate of return on equity for AmerenUE by stating that for his proxy companies Value Line "currently projects a three- to five-year total return expectation ranging from 0% to 9%." How does Value Line calculate its projected three to five year total return expectation for each company?

A. Value Line calculates its projected three- to five-year total return expectation by: (1) applying a normalized P/E ratio to projected three- to five-year earnings per share to determine a forecasted price; (2) subtracting the current price from the forecasted price to determine a capital gain; and (3) adding the current dividend yield to the forecasted geometric average capital gain to determine a forecasted return. Value Line defines its procedure as follows:

> **Projected 3-5 Yr. Avg. Return**—The average annualized return projected for a stock. Projected average annual target price range 3 to 5 years hence is based on the standard deviation of historical weekly percent price changes for 52 weeks applied to the average annual price projected 3 to 5 years from now (the mid-point of the range). The 3—5 year average price is determined by applying a "normalized" P/E ratio to projected 3—5 year earnings per share.

Q. Can a three- to five-year return expectation based on the Value Line methodology appropriately be considered to be an estimate of a company's cost of equity?

A. No. It is clear that Value Line is not estimating each company's cost of equity using conventional cost of equity methodologies such as DCF, risk premium, or CAPM.

Rather, Value Line is simply estimating a future price by applying its "normalized" P/E ratio to its forecasted earnings per share and adding the implied capital gain to the company's current dividend yield.

Q. Do Value Line's three- to five-year projected total return data in fact indicate that these data could not possibly be cost of equity estimates?

A. Yes. Mr. Hill's work papers show the following Value Line three- to five-year return expectation data for his proxy electric companies:

TABLE 2
VALUE LINE 3- TO 5-YEAR ANNUAL TOTAL RETURN
FOR MR. HILL'S PROXY ELECTRIC COMPANIES

Company	*Low*	*High*
Central Vermont P. S.	-1%	6%
FirstEnergy Corp.	3%	9%
Northeast Utilities	-2%	10%
Progress Energy	1%	8%
Alliant Energy	0%	9%
Ameren Corp.	3%	8%
American Electric Power	4%	15%
Cleco Corporation	-2%	8%
DPL, Inc.	-2%	10%
Empire District Electric	0%	8%
Entergy Corp.	1%	8%
Hawaiian Electric	-3%	6%
PNM Resources	2%	10%
Pinnacle West Capital	6%	10%
UniSource Energy	-4%	7%
Average	0%	9%

The average low expectation is 0 percent, and the average of the low and high expectations is 4.5 percent. As a point of comparison, the average yield on 90-day Treasury bills for December 2006 was 5 percent. No reasonable investor would invest in the risky equities of

Mr. Hill's proxy companies if they expected a return on equity equal to only 4.5 percent, when they could earn a risk-free rate of return on 90-day Treasury bills equal to 5 percent.

Q. Mr. Hill also cites return data from an A. G. Edwards report that allegedly support his low recommended rate of return on equity for AmerenUE. Does the A. G. Edwards report contain any data that indicates that Mr. Hill's 9.25 percent rate of return on equity recommendation is unreasonably low?

A. Yes. The A. G. Edwards report shows allowed rates of return on equity in 2005 rate orders for six natural gas distribution companies, and allowed rates of return on equity in 2006 for two natural gas distribution companies. Every single allowed rate of return on equity is significantly higher than Mr. Hill's recommendation for AmerenUE.

3. Market Risk Premium Literature

Q. Mr. Hill claims that "current research related to the market risk premium supports" his "estimate of the cost of equity capital." (Hill Direct at 10.) What research does Mr. Hill cite as allegedly being supportive of his rate of return recommendation?

A. Mr. Hill cites: (1) an article by Dimson, Marsh and Staunton, "Risk and Return in the 20th and 21st Centuries," *Business Strategy Review*, 2000, Volume 11, Issue 2, 1-18 ("Dimson"); (2) a book titled, *Stocks for the Long Run, A Guide to Selecting Markets for Long-term Growth* (Irwin Professional Publishing, Chicago, IL, 1994), by Jeremy Siegel ("Siegel"); (3) an article by Fama and French, "The Equity Risk Premium," *The Journal of Finance*, Vol. LVII, No. 2, April 2002 ("Fama French"); (4) a survey conducted by Graham and Harvey and *CFO Magazine* ("Graham Harvey"); (5) a survey published by Ivo Welch, "The Equity Premium Consensus Forecast Revisited," working paper, September 2001

("Welch"); and (6) a paper published by Ibbotson and Chen, "Long-Run Stock Returns: Participating in the Real Economy," *Financial Analysts Journal*, January/February 2003, 88-98 ("Ibbotson Chen").

Q. Are you familiar with the research cited by Mr. Hill?

A. Yes, I am.

Q. Do you agree with Mr. Hill's assessment that his cited research supports his low 9.25 percent rate of return on equity recommendation for AmerenUE?

A. No. Mr. Hill's optimistic assessment of the supportive character of this research is entirely unjustified. First, Mr. Hill mischaracterizes the research as "current," when, in fact, one of the six studies he cites only use data through 1992 ("Siegel"); two of the studies only include data through 2000 ("Dimson" and "Fama French"); and two of the studies extend only to 2001 ("Welch" and "Ibbotson Chen"). Second, Mr. Hill fails to acknowledge major weaknesses of his cited risk premium studies, most of which preclude their use in determining AmerenUE's cost of equity.

Q. Does the Dimson study cited by Mr. Hill support his 9.25 percent recommended cost of equity in this proceeding?

A. No. The Dimson article presents evidence that the arithmetic mean risk premium on U.S. equities compared to long-term U.S. government bonds over the period 1900 to 2000 is 7.2 percent, a value that is indistinguishable from the Ibbotson Associates' risk premium for the period 1926 – 2005, 7.1 percent; and it is significantly higher than the risk premiums that Mr. Hill used to estimate AmerenUE's cost of equity in this proceeding. Unlike Mr. Hill, the Dimson article also concludes that the arithmetic mean risk premium is the only risk premium that should be used to estimate the cost of equity. In contrast, Mr. Hill

recommends using the geometric mean risk premium to estimate the cost of equity in this proceeding. Further, Mr. Hill fails to recognize the major weaknesses of the Dimson study, namely: (1) it relies on non-U.S. data that are unlikely to reflect required returns for U.S. companies such as AmerenUE; and (2) it relies on data prior to 1926, when the stock market was dominated by a few companies in industries that play a relatively small role in today's stock markets. For example, in their book, *Triumph of the Optimists*, Dimson, Marsh and Staunton provide evidence that railroads represented 63 percent of the U.S. equity market in 1900. Today, railroad companies represent only 0.6 percent of the market value of all companies in the Value Line universe, which is a reasonable approximation for the total capitalization of the U.S. equity market.

Q. Does the Siegel study cited by Mr. Hill at page 12 of his direct testimony support his 9.25 percent rate of return recommendation for AmerenUE?

A. No. The Siegel study relies on unreliable historical data that extends as far back as 1802, a period when there were very few publicly-traded equities; moreover, the historical dividend data needed to estimate returns for these equities does not exist. Furthermore, the Siegel study ends in 1992.

Q. How does the Fama French study cited by Mr. Hill on page 13 of his testimony differ from the historical risk premium studies of Dimson and Siegel?

A. The Fama French risk premium study differs from the Dimson and Siegel studies primarily in two respects. First, it estimates the expected risk premium using a DCF model rather than using actual earned returns. Second, Fama French cover the period 1872 to 2000.

Q. How do Fama French estimate the growth component of their DCF model?

A. Fama French apply their DCF model to three periods: 1872 – 2000, 1872 – 1950, and 1951 – 2000. For the longest period, 1872 – 2000, Fama French estimate the growth component of their DCF model using the average dividend and earnings growth rates over the entire study period. For the two sub-periods, Fama French use the average dividend and earnings growth rate over these two sub-periods, 1872 – 1950 and 1951 – 2000.

Q. Do you agree with Fama French's method for estimating the growth component of their DCF model?

A. No. The DCF model requires the growth expectations of investors. In 1872, investors would not have known what the average dividend and earnings growth rates would be for the period 1872 – 2000. Furthermore, there is significant evidence for more recent periods that investors do not use historical growth rates in making stock buy and sell decisions.

Q. Does the Fama French paper itself contain evidence that a DCF model based on historical dividend and earnings growth rates underestimates the investor-required return for the period 1951 – 2000?

A. Yes. Fama French report that their estimate of the expected risk premium for 1951 – 2000 using historical earnings growth was higher than their results using historical dividend growth, but only equal to 60 percent of the actual risk premium over this period. In short, the Fama French DCF model underestimates the actual returns achieved by equity investors over the period 1951 – 2000 by approximately 40 percent.

Q. Mr. Hill cites two research studies that rely on surveys to measure the expected market risk premium, the Welch survey and the Graham Harvey survey. Are there any problems with using surveys to estimate the required market risk premium on equity investments?

A. Yes. It is widely recognized that surveys are subject to bias because they reflect only the opinion of the survey participants at certain points in time rather than the actual behavior of investors when they buy stocks in the marketplace. In addition, surveys may be flawed by low response rates.

Q. Do you have any evidence that the survey methods of Welch and/or Graham Harvey may not reflect the behavior of investors who are actually making investment decisions?

A. Yes. The Graham Harvey survey cited by Mr. Hill indicates that company executives use hurdle rates for investment decisions that exceed the rates implied by their survey response.[3]

Q. Mr. Hill also cites a paper by Ibbotson and Chen as support of his argument that the market risk premium is now significantly below historical risk premiums. Is the Ibbotson who co-authored the Ibbotson-Chen equity risk premium paper also the Ibbotson who is Founder, Advisor, and Former Chairman of Ibbotson Associates, a company that is the major provider of risk premium data to the financial community?

A. Yes, he is.

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3 "Often their 10-year risk premium is supplemented so that the company's hurdle rate exceeds their expected excess return on the S&P 500." Graham-Harvey: Equity risk premium in January 2006, p. 6

Q. Is the Chen who co-authored the Ibbotson-Chen equity risk premium paper the current President of Ibbotson Associates?

A. Yes, he is.

Q. What risk premium does Ibbotson Associates recommend for use in estimating the cost of equity?

A. Ibbotson Associates recommends a risk premium equal to 7.1 percent over the yield to maturity on 20-year Treasury bonds. Ibbotson Associates argues that the long-run historic arithmetic mean risk premium is most appropriate for use in estimating the cost of equity because the arithmetic mean is the best estimate of the expected risk premium on a forward-looking basis, and there is no evidence that risk premiums have declined over time as Mr. Hill claims.

Q. Does the most recent Ibbotson Associates yearbook discuss the Ibbotson Chen paper cited by Mr. Hill?

A. Yes. In the valuation edition of the *2006 Yearbook*, Ibbotson Associates has a brief discussion of the Ibbotson Chen paper under the heading, "Other Equity Risk Premium Issues." (*2006 Yearbook* at 92 – 98.)

Q. Does Ibbotson Associates give much weight to the results of the Ibbotson Chen paper?

A. No. If Ibbotson Associates gave much weight to the results of the Ibbotson Chen paper, they would recommend using the slightly lower risk premium implied by the Ibbotson Chen supply-side model to estimate the cost of equity. Instead, they continue to strongly recommend using the historical 7.1 percent arithmetic mean risk premium over the period 1926 to the present for the purpose of estimating the cost of equity.

Q. Does Ibbotson Associates provide an estimate of the equity risk premium using the Ibbotson Chen supply-side model discussed in the Ibbotson Chen paper?

A. Yes. Ibbotson Associates describes how the Ibbotson Chen supply side model now produces an equity risk premium of 6.28 percent, not the 3.97 percent to 5.90 percent value discussed by Mr. Hill.

Q. What cost of equity would one obtain using an equity risk premium of 6.28 percent?

A. Using an equity risk premium of 6.28 percent, a 20-year Treasury bond yield of 4.8 percent, and the 0.94 current average beta for Mr. Hill's proxy companies would produce a CAPM estimate of the cost of equity equal to 10.7 percent, well above Mr. Hill's recommended cost of equity of 9.25 percent.

4. Regulatory Commissioners' Knowledge of Equity Risk Premium Literature

Q. Mr. Hill's fourth reason for why the Commission should accept his low 9.25 percent rate of return on equity recommendation is that regulatory commissioners are not aware of literature on the equity risk premium. Was evidence on the equity risk premium literature presented in the recent Empire and Kansas City Power & Light cases in Missouri?

A. Yes. Staff Witness Mr. David Murray presented testimony on the equity risk premium literature in the recent Empire case, and Dr. Woolridge presented testimony on the equity risk premium literature in the Kansas City Power & Light case.

Q. Did the Commission nonetheless authorize a rate of return on equity of 10.9 percent in the Empire case and 11.25 percent in the Kansas City case?

A. Yes.

B. Mr. Hill's Proxy Companies

Q. How did Mr. Hill estimate AmerenUE's cost of equity?

A. Mr. Hill applied four cost of equity models, including the DCF model, the Capital Asset Pricing Model ("CAPM", the Modified Earnings/Price Ratio method ("MEPR"), and the market-to-book ratio ("MTB") method, to proxy groups of electric and natural gas utilities.

Q. What criteria did Mr. Hill use to select his proxy electric company group?

A. Mr. Hill selected Value Line electric utilities that "had at least 70% of revenues from electric operations, did not have a pending merger, did not have a recent dividend cut, had stable book values and a senior bond rating between 'A' and 'BBB-,'" obtaining a final group of 15 electric utilities. (Hill Direct at 27 – 28.)

Q. What is the purpose of proxy selection criteria?

A. The purpose of proxy selection criteria is to identify the largest possible group of comparable risk companies that have sufficient data to reliably apply cost of equity methodologies such as the DCF, CAPM, and risk premium.

Q. Why is it desirable to choose a relatively large group of comparable risk companies?

A. It is desirable to choose a relatively large group of comparable risk companies because the estimate of the cost of equity obtained from applying cost of equity methodologies to a single company is uncertain. Cost of equity methodologies such as the DCF, CAPM, and risk premium, require estimates of quantities such as growth rates, betas, and expected risk premiums that necessarily involve a degree of uncertainty. However, the

uncertainty in estimating the cost of equity by applying cost of equity methodologies to a single company can be significantly reduced by applying cost of equity models to a relatively large group of comparable risk companies. Intuitively, any over- and under-estimate of the cost of equity that arises from the application of cost of equity methods to a single company is averaged out by applying the methods to a larger group of comparable risk companies.

In addition, the choice of a relatively small group of proxy companies requires a great deal of judgment. When an analyst like Mr. Hill applies judgment to select a small group of companies, he or she may be tempted to choose a set of selection criteria that produce a desired result. The analyst can eliminate the possibility of selection bias by starting with the largest possible group of comparable risk companies and eliminating only those companies with insufficient data to estimate the cost of equity.

Q. Do Mr. Hill's proxy selection criteria produce the largest possible group of comparable risk companies that have sufficient data to reliably apply cost of equity methodologies?

A. No. Mr. Hill's proxy selection criteria eliminated a large number of utilities that most investors would consider to be of comparable risk to AmerenUE. For example, Mr. Hill's requirement that each proxy company must have at least 70% of revenues from electric operations eliminates all combination electric and natural gas utilities, even though these utilities are widely considered to be comparable in risk to AmerenUE. Indeed it is reasonable to expect that a combination electric and gas utility might be slightly less risky than a company operating in a single energy market such as electricity because electric and natural gas operations are comparable in risk when considered individually, but are not perfectly correlated with each other. The imperfect correlation of returns on electric and natural gas

operations can allow the combined energy companies to diversify their risks. Since many of the companies in Value Line's group of electric utilities operate in both the electric and natural gas segments of the energy markets, Mr. Hill's 70% criteria ruled out many comparable risk companies that should have been included in Mr. Hill's risk proxy group.

Q. Did Mr. Hill accurately apply his proxy selection criteria?

A. No. One of Mr. Hill's criteria is that his proxy companies must have an investment-grade S&P bond rating. In fact, even according to Mr. Hill's own work papers, three of his proxy electric companies have below-investment grade bond ratings, namely, Central Vermont Public Service, DPL, and UniSource. In addition, Mr. Hill failed to include Southern Company, even though it meets all his criteria. Furthermore, contrary to Mr. Hill's assertion, PPL earns 70 percent of its revenues from utility operations and has stable book values. (I also note that there typically are few I/B/E/S analysts' growth forecasts available for five of Mr. Hill's 15 proxy electric companies, including Alliant, Central Vermont, Cleco, Empire, and UniSource.)

Q. What is the effect of Mr. Hill's faulty implementation of his own selection criteria on his cost of equity result?

A. As I discuss below, because Mr. Hill implements his DCF model using his own growth estimates rather than growth rates that are widely available and known to investors such as the I/B/E/S growth rates, it is impossible to assess precisely what effect his faulty implementation of his selection criteria had on his cost of equity result. However, there is strong evidence that Mr. Hill's selection criteria, taken by themselves, caused him to significantly underestimate AmerenUE's cost of equity.

Q. What criteria did you use to select proxy companies?

A. I selected all the companies in Value Line's electric and natural gas groups that: (1) paid dividends during every quarter of the last two years; (2) did not decrease dividends during any quarter of the past two years; (3) had at least three analysts included in the I/B/E/S average growth forecast; (4) have an investment-grade bond rating and a Value Line Safety Rank of 1, 2, or 3; and (5) have not announced a merger.

Q. Do you have any evidence that your proxy groups are a reasonable proxy for the risk of investing in AmerenUE?

A. Yes. In my direct testimony, I note that my proxy group of electric companies has an average S&P bond rating of BBB+, and my proxy group of LDCs has an average S&P bond rating of A- (see pages 25 and 27 of my direct testimony). AmerenUE currently has an S&P bond rating of BBB. In addition, my proxy groups of electric and natural gas companies have an average Value Line Safety Rank of 2, and Ameren has a Value Line Safety Rank of 1. These data indicate that my proxy groups of companies are reasonable proxies for the risk of investing in AmerenUE.

Q. Do you have any evidence that your large proxy group is more conservative in risk than Mr. Hill's smaller proxy group of electric companies?

A. Yes. As noted above, the average S&P bond rating for my proxy electric and natural gas groups are BBB+ and A-, respectively. The average S&P bond rating for Mr. Hill's electric proxy group is in the range BBB to BBB-. The average Value Line Safety Rank for all groups is approximately 2. Since Mr. Hill's proxy group has a lower bond rating and the same Safety Rank as my proxy group, my proxy group is less risky than Mr. Hill's.

Q. Are there other reasons why the Commission should accept your comparable company groups instead of Mr. Hill's?

A. Yes. As discussed above, it is preferable to use a larger proxy group of similar risk companies to estimate the cost of equity because the cost of equity results for a single company or a small group of companies is uncertain. However, the uncertainty in cost of equity results for a small group of companies can be reduced by using a larger group of companies of comparable risk. Since my proxy group is comparable in risk to Mr. Hill's, but contains more than twice as many companies, my cost of equity results are significantly more reliable than Mr. Hill's.

Q. What DCF results did you obtain in your direct testimony for your proxy companies?

A. I obtained an average DCF result of 9.8 percent for my proxy companies, as reported in Table 4 in my direct testimony.

Q. Have you updated your electric company DCF studies?

A. Yes, I have.

Q. What DCF result do you obtain from your updated studies?

A. Using the same proxy selection criteria and DCF model described in my direct testimony and using market data through December 31, 2006, I obtain an average DCF result of 11.75 percent. In the Empire proceeding, ER-2006-0315, I was asked as a Bench Request to provide updated results produced by removing the two highest and two lowest results from the sample of comparable companies; and I therefore also show that removing those four results from the sample would produce an average result of 10.78 percent. (See Vander Weide Rebuttal Schedule JVW-2.)

C. Mr. Hill's Discounted Cash Flow Model

Q. What DCF model did Mr. Hill choose as his vehicle for estimating AmerenUE's cost of equity capital?

A. Mr. Hill chose an annual DCF model, $k = D_1 \div P_0 + g$, where k is the cost of equity, D_1 is the first period dividend, P_0 is the current stock price, and g is the average expected future growth in the company's earnings and dividends.

Q. What are the basic assumptions of Mr. Hill's annual DCF model?

A. Mr. Hill's annual DCF model is based on the assumptions that: (1) a company's stock price is equal to the present value of the future dividends investors expect to receive from their investment in the company; (2) dividends are paid annually; (3) dividends, earnings, and book value are expected to grow at the same constant rate forever; and (4) the first dividend is received one year from the date of the analysis.

Q. One of the assumptions of Mr. Hill's annual DCF model is that dividends are paid annually. Do any of Mr. Hill's proxy companies, in fact, pay dividends annually?

A. No. All of Mr. Hill's proxy companies pay dividends quarterly.

Q. Can Mr. Hill's annual DCF model be mathematically derived from the assumption that dividends are paid quarterly?

A. No. Mr. Hill's annual DCF model can only be derived from the assumption that dividends are paid annually. When dividends are paid quarterly, the quarterly DCF model is the only model that can be mathematically derived from DCF assumptions. Since Mr. Hill's proxy companies pay dividends quarterly, he should have used a quarterly DCF model to estimate AmerenUE's cost of equity.

Q. You also mention that Mr. Hill's DCF model requires an estimate of the first period dividend for each company. How did Mr. Hill estimate the first period dividend in his annual DCF model?

A. For most of his companies, Mr. Hill used the current quarterly dividend multiplied by four to obtain his estimate of the first period dividend in his annual DCF model. In the case where his proxy companies were expected to increase their dividends in the next quarter, Mr. Hill estimated the first period dividend by multiplying the current quarterly dividend by the factor $(1 + g)$. This procedure resulted in a dividend increase for only seven of Mr. Hill's 15 electric companies and four of his nine natural gas utilities.

Q. Do you agree with Mr. Hill's use of the current annualized dividend as the estimate of the first period dividend in his application of the DCF model?

A. No. Mr. Hill's annual DCF model is based on the assumption that dividends will grow at the same constant rate forever. Under the assumption that dividends will grow at the same constant rate forever, the cost of equity is given by the equation, $k = D_0 (1 + g) / P_0 + g$, where D_0 is the current annualized dividend, P_0 is the stock price, and g is the expected constant annual growth rate. Thus, the correct first period dividend in the annual DCF model is the current annualized dividend multiplied by the factor, (1 + growth rate). As noted above, Mr. Hill only multiplied the current dividend by (1 + growth rate) for fewer than half his proxy companies.

D. Mr. Hill's Growth Estimate

Q. How does Mr. Hill estimate the DCF growth rate for his proxy companies?

A. Mr. Hill begins by reviewing various internal, historical, and projected growth rates for each company. After reviewing these data, Mr. Hill then simply states his opinion regarding what a "reasonable" growth rate would be (see Hill Direct at 29—31).

Q. Mr. Hill implies that his DCF growth rates are "calculated" (Hill at 29, lines 8 – 9). Is there any way to calculate Mr. Hill's DCF growth rates from the data that he presents?

A. No. There is no way to calculate Mr. Hill's final growth estimate for each company from the growth rate data that he presents. Mr. Hill's final growth rate for each company is simply his own opinion of what a "reasonable" growth rate would be for the company.

Q. Can you illustrate the subjective nature of Mr. Hill's "method" for estimating future growth for his proxy companies?

A. Yes. Mr. Hill reports 12 separate values of growth rates for each of his proxy electric companies. (See SGH-1 Schedule 4). For example, in the case of Public Service of New Mexico ("PNM"), Mr. Hill reports values ranging from *negative* 8.76 percent to *positive* 11.45 percent. From these data for PNM, Mr. Hill arbitrarily picks 6.36 percent as his estimate of PNM's growth for his DCF calculations. Mr. Hill's estimates of the growth component for each of his proxy companies are equally arbitrary.

Q. How does Mr. Hill describe his method for arriving at PNM's growth rate?

A. Mr. Hill describes his method for estimating PNM's growth rate as follows:

> PNM Resources—PNM's sustainable growth rate has averaged 5.37% over the most recent five year period with a declining trend. Value Line expects PNM's sustainable growth to fall below that historical average growth rate level to about 3.6% by the 2009-2011 period. PNM's book value growth rate is expected to be 4% over the next five years, similar to the 4.5% rate of growth experienced over the past five years. Those data indicate stable growth. Also, PNM's earnings per share are projected to increase at a 5.5% (Value Line) to 8.3% (Zacks) to 11.45% (Reuters) rate. Its dividends are expected to grow at 8.5%, increasing long-term growth rate expectations. Over the past five years, PNM's earnings growth was -1% while its dividends increased at a 5% rate. ***Investors can reasonably expect a sustainable growth rate in the future of 5.75% for PNM.***
>
> Regarding share growth, PNM's shares outstanding increased at a 4% rate over the past five years. The number of shares outstanding in 2009-2011 is expected to increase at about a 1.5% rate from 2005 levels. ***An expectation of share growth of 2% for this company is reasonable***. [Hill Appendix C-5—C-6. Emphasis added.]

Mr. Hill goes through a similar process to estimate growth for each proxy company.

Q. The growth component of the DCF model is meant to reflect investors' growth expectations for the proxy companies. Does Mr. Hill provide any evidence that his DCF growth rates reflect investors' growth expectations for his proxy companies?

A. No. It is clear from his description that Mr. Hill's DCF growth rates only reflect his own opinion regarding a "reasonable" growth rate.

Q. Does the DCF model require that growth expectations be "reasonable"?

A. No. The DCF model requires that the growth component reflect investors' growth expectations, whether or not they conform to Mr. Hill's opinion that the estimate is "reasonable."

Q. You mentioned earlier that Mr. Hill reviews data on "internal" growth rates for each company. What is the standard definition of "internal" growth?

A. Internal growth is usually defined as the product of a company's retention ratio, b, and its rate of return on book equity, r. The retention ratio is the percentage of earnings retained in the company's business.

Q. Can Mr. Hill's *b x r* approach be logically used to estimate the cost of equity for a regulated company such as AmerenUE?

A. No. When applied to a regulated firm, the *b x r* approach is logically circular because it incorporates information on the regulated firm's expected rate of return on book equity, *r*, to calculate the firm's cost of equity using the DCF model. However, the regulated firm's cost of equity also determines the allowed rate of return on book equity, through rate of return regulation. Thus, the cost of equity is based on the allowed rate of return, and the allowed rate of return is based on the cost of equity. The logical circularity, or inconsistency, in applying the *b x r* approach to rate-of-return regulated firms cannot be resolved, because only one of the two variables can be known before the other is calculated.

Q. Can you illustrate the logical circularity or inconsistency in Mr. Hill's application of the *b x r* approach to estimating internal growth?

A. Yes. Mr. Hill shows that Value Line projects that his proxy electric companies will earn a rate of return on equity in the range 10.17 percent to 10.63 percent

over the next several years, while his natural gas proxy companies will earn a rate of return on equity in the range 11.17 percent to 11.33 percent over the next several years (see Mr. Hill's Exhibit__SGH-1, Schedule 10, pp. 1 – 2). Mr. Hill then uses these values in his DCF model to obtain DCF estimates of 9.26 percent for his proxy electric companies and 9.22 percent for his proxy gas companies. Mr. Hill fails to explain how his electric and natural gas companies could be expected earn rates of return on equity in the range 10.17 percent to 11.33 percent if they are only allowed to earn his recommended cost of equity of 9.25 percent.

Q. In summary, do you agree with Mr. Hill's approach to estimating DCF growth rates for his proxy companies?

A. No. Mr. Hill's method for estimating growth is highly subjective and logically inconsistent. Although Mr. Hill's DCF methodology is extremely sensitive to his estimates of each company's future growth, Mr. Hill provides no objective method of obtaining his estimates of the future growth. As a result of the sensitivity of his model results to the choice of growth, and because of his lack of objective standards for estimating growth, Mr. Hill can obtain virtually any result through his subjective choice of the growth rate.

Q. How do you recommend estimating the future growth component in the DCF model?

A. As described in my direct testimony, I recommend using the analysts' forecasts published by I/B/E/S.

Q. Why do you believe that the analysts' forecasts of earnings growth are more accurate indicators of investors' expectations than the growth estimates provided by Mr. Hill?

A. Security analysts analyze the prospects of companies and forecast earnings. They take into account all of the historical and current data that Mr. Hill mentions plus any additional information that is available, such as changes in regulatory climate, industry restructuring, FERC rulings, or changes in the competitive environment. The performance of security analysts is measured against their ability to weigh the above factors, to predict earnings growth, and to communicate their views to investors. Current research indicates that the securities analysts are influential, their forecasts are more accurate than simple extrapolation of past growth, and, most importantly, the consensus of their forecasts is impounded in the current structure of market prices. This is a key result, since a proper application of the DCF model requires the matching of stock prices and investors' expectations.

Q. Are analysts' forecasts readily available?

A. Yes. An important part of the analysts' job is getting their views across to institutional investors. The major brokerage firms send out monthly reports with their earnings forecasts, and institutional investors have direct access to analysts. Individual investors can get the same forecasts through their brokers. Studies reported in the academic literature indicate that recommendations based on these forecasts are relied on heavily by investors. Indeed, because analysts' forecasts are perceived by investors as being useful, there are services which offer analysts' forecasts on all major stocks. I/B/E/S, Reuters, and Zack's are some of the providers of this data. I recommend use of the I/B/E/S growth rates

because they have been: (1) shown to be highly correlated with stock prices; (2) widely studied in the finance literature; and (3) widely available to investors for many years.

Q. Is it your contention that analysts make perfectly accurate predictions of future earnings growth?

A. No. Forecasting earnings growth, for either the short-term or long-term, is very difficult. This statement is consistent with the facts that: (1) stocks, unlike high-quality bonds, are risky investments whose return is highly uncertain; and (2) analysts who forecast poorly lose their jobs. Though analysts' forecasts are not perfectly accurate, they are better than either internal growth rates or historical growth in predicting stock prices. One would expect this result, given that analysts have all the past data plus current information. The important consideration is: what growth rates do investors use to value a stock? Current research suggests that the analysts' growth forecasts are used by investors and therefore most related to stock prices. Investors are unlikely to be aware of Mr. Hill's growth expectations.

Q. Have you done research on the appropriate use of analysts' forecasts in the DCF model?

A. Yes. As described in my direct testimony, I have done extensive research on the use of the analysts' growth forecasts as estimates of investors' future growth expectations (see Vander Weide Direct at 21 – 22). My studies indicate that the analysts' forecasts of future growth are superior to historically-oriented growth measures and internal growth measures in predicting a firm's stock price.

E. Mr. Hill's Capital Asset Pricing Model ("CAPM")

Q. How did Mr. Hill use the CAPM to estimate AmerenUE's cost of equity?

A. To use the CAPM, one must determine a risk-free rate of return, a security specific beta, and a market risk premium. For the risk-free rate, Mr. Hill used a long-term Treasury bond yield of 4.83 percent. For the security-specific beta, Mr. Hill used a value of 0.89. As his estimate of the market risk premium, Mr. Hill used both a geometric mean market risk premium, 4.9 percent, and an arithmetic mean risk premium, 6.5 percent, producing a cost of equity in the range 9.19 percent to 10.62 percent. However, Mr. Hill concludes that a cost of equity at the low end of this range provides a more accurate estimate of AmerenUE's cost of equity:

> Given the recent research on the market risk premium it is reasonable to believe that the CAPM result based on Ibbotson's historical geometric mean market risk premium provides a more accurate estimate of investors' return requirements and the cost of equity capital. [Hill Direct at 47 – 48.]

Q. Do you have any objections to Mr. Hill's implementation of the CAPM?

A. Yes. I disagree with: (1) Mr. Hill's use of a geometric mean risk premium on the market portfolio to estimate the market risk premium component of the CAPM; and (2) his use of an incorrect value for the arithmetic mean risk premium. Ibbotson Associates' *2006 Yearbook*, Mr. Hill's data source for the geometric mean risk premium, strongly recommends the use of the arithmetic mean risk premium for the purpose of estimating the cost of equity. In addition, Ibbotson Associates reports the correct arithmetic mean risk premium as 7.1 percent, not the 6.5 percent that Mr. Hill used.

Q. What CAPM result would Mr. Hill have obtained if he had correctly used the arithmetic mean risk premium of 7.1 percent in his application of the CAPM to his proxy companies?

A. Mr. Hill would have obtained a CAPM result of 11.15 percent (4.83 + .89 x 7.1 = 11.15).

F. Mr. Hill's Modified Earnings-Price Ratio Method

Q. What is Mr. Hill's modified earnings price ratio ("MEPR") method?

A. Mr. Hill's MEPR is a mathematical re-statement of his DCF method in which a company's cost of equity lies in a range between its earnings/price ratio and its expected rate of return on book equity.

Q. How does Mr. Hill use his MEPR to estimate AmerenUE's cost of equity?

A. Mr. Hill calculates the average earnings-price ratio for his group of electric companies to be 6.58 percent. He considers the range between 6.58 percent and Value Line's expected 2007 rate of return on equity for his proxy electric companies, 10.63 percent, as one range of reasonableness for AmerenUE's cost of equity. As a second range of reasonableness, he considers the range between 6.58 percent and Value Line's expected 2009-2011 average rate of return on equity for his proxy electric companies, 10.17 percent. Mr. Hill notes that the midpoints of these two ranges are 8.60 percent and 8.37 percent. Applying this same process to his proxy gas companies, Mr. Hill obtains MEPR results in the range 8.54 percent to 8.62 percent.

Q. Do Mr. Hill's ranges of returns between the earnings-price ratio and the expected rates of return on book equity provide any evidence relevant to the determination of AmerenUE's cost of equity capital?

A. No. The low end of his range, the earnings/price ratio, is not relevant to estimating a firm's cost of equity capital because the earnings/price ratio: (1) combines an earnings figure which reflects the results of past investments with a market price that reflects investors' expectations about the future results of current investments; (2) gives no consideration to potential growth in earnings; (3) gives no consideration to whether next year's forecasted earnings are reflective of the long-run future, or are the result of non-recurring events; and (4) may not be comparable when compared to the earnings/price ratios for firms in other industries because of different accounting conventions in different industries.

Mr. Hill's use of the expected return on book equity as the high end of his cost of equity range depends on his incorrect assumptions that companies with market-to-book ratios greater than 1.0 are earning more than their costs of equity, and companies with market-to-book ratios less than 1.0 are earning less than their costs of equity. However, these assumptions are clearly inconsistent with the empirical evidence that there are many companies with either low or negative earnings that have market-to-book ratios exceeding 1.0. In fact, as I discuss in my rebuttal of Dr. Woolridge, most U.S. companies have market-to-book ratios greater than 1.0 regardless of their rates of return on book equity.

Q. Is Mr. Hill's MEPR method a widely-accepted method for estimating the cost of equity in the financial community?

A. No. I do not know of anyone other than Mr. Hill who has used this method to estimate the cost of equity during the last 20 years.

Q. Mr. Hill states that the Federal Energy Regulatory Commission ("FERC") found the MEPR method to be useful in its generic rate of return hearings in 1986. Has the FERC subsequently commented on the usefulness MEPR method?

A. Yes. In its Final Order 489, effective February 1, 1988, the FERC stated:

> FA Staff's presentation[4] in this proceeding is substantially similar to those filed in the three earlier annual proceedings. Its analysis is not entitled to great weight because of its lack of precision. If one were to accept FA Staff's presentations at face value, they would appear to support nearly any cost of common equity estimate in the range of 9.38 to 13.70 percent. [RM87-35-000; Order No. 489, 53 FR 3342 (1988)]

Q. The FERC Order criticizes the MEPR method on the grounds that it is imprecise. Are the results of Mr. Hill's application of his MEPR method also imprecise?

A. Yes. Mr. Hill obtains a range of results for his electric company group from 6.58 percent to 10.63 percent, and for his gas proxy group, a range of results from 5.92 percent to 11.33 percent.

4 The Commission refers to FA Staff's presentation on earnings-price ratios and forecasted rates of return on equity, the methodology which Mr. Hill refers to as the MEPR.

Q. When a method produces such a wide range of average results for the proxy group, is it appropriate to simply average the low and high ends of the range, as Mr. Hill does in his MEPR method?

A. No. Averaging the high and low ends of the MEPR results makes no sense. Mr. Hill should have recognized that the average earned rate of return on equity for his proxy group is a more reasonable estimate of AmerenUE's cost of equity than the average earnings/price ratio. For example, the earnings/price ratio for the gas proxy group, 5.92 percent, is less than interest rate on Baa-rated utility bonds.

Q. Does the FERC use the MEPR method to estimate the cost of equity for electric utilities at present?

A. No.

G. Mr. Hill's Market-to-Book Method

Q. How did Mr. Hill use his market-to-book ratio method to estimate the cost of equity for AmerenUE?

A. Mr. Hill started with his basic DCF equation, $P = D \div (k - g)$. By substituting in definitions for dividends, earnings, and growth, Mr. Hill derives an equation for the cost of equity capital as a function of a firm's market-to-book ratio. Using data on market-to-book ratios, in addition to the other variables in his equation, Mr. Hill calculates an estimate of the cost of equity for his comparable companies.

Q. Is Mr. Hill's market-to-book method independent of his DCF method?

A. No. Mr. Hill's market-to-book method begins with the same DCF equation as his DCF method. Although it involves slightly different variables, one would expect Mr. Hill to arrive at results that are virtually identical to his results from his DCF method.

Q. Is Mr. Hill's market-to-book method widely accepted in the financial community?

A. No. Financial analysts generally prefer the straight forward DCF approach over Mr. Hill's variant of the DCF approach.

Q. Does Mr. Hill's market-to-book model provide information relevant to determining the cost of equity capital for AmerenUE?

A. No. Mr. Hill's market-to-book model suffers from the same circular reasoning as his expected growth method: this model requires an estimate of the earned rate of return on equity to estimate the cost of equity capital; yet, the cost of equity capital determines the earned rate of return on equity through the regulatory process.

H. Financial Risk Adjustment

Q. Mr. Hill states that his cost of equity range for AmerenUE is "from 9.00% to 9.75%, with a midpoint of 9.375%." (Hill Direct at 52.) Does Mr. Hill recommend that AmerenUE be allowed to earn a rate of return on equity equal to 9.375 percent?

A. No. Mr. Hill recommends that AmerenUE be allowed to earn only a rate of return on equity equal to 9.25 percent.

Q. Why does Mr. Hill recommend that AmerenUE be allowed to earn a rate of return on equity that is below the midpoint of his cost of equity range?

A. Mr. Hill claims that AmerenUE should be allowed to earn a rate of return below the midpoint of his cost of equity range because, in his opinion, AmerenUE has less financial risk than his proxy group of companies:

> However, because the capital structure I recommend for ratesetting purposes contains considerably more common equity and less debt

than average for the sample group, AmerenUE, prospectively will have less financial risk than the sample group and should be awarded an equity return below the mid-point of a reasonable range. In this instance, I believe an equity return of 9.25%, modestly below the mid-point of a reasonable range of equity cost for similar-risk firms, would be reasonable for ratemaking purposes. (Hill Direct at 53.)

Q. How does Mr. Hill measure whether AmerenUE has less financial risk than his proxy group of companies?

A. Mr. Hill compares his recommended capital structure for AmerenUE to his estimate of the average book value capital structure of his proxy group.

Q. How do financial economists measure the risk of investing in a company's stock?

A. Financial economists generally measure the risk of investing in a company's stock by the variance of the expected rate of return earned by a company's shareholders in the marketplace.

Q. Does the risk of investing in a company's stock depend on the company's capital structure?

A. Yes. It can be easily demonstrated that the variance of return to shareholders depends on the company's capital structure measured using market values. The impact of the company's market value capital structure on the variance in return to shareholders is frequently termed, "financial risk."

Q. Do you have any evidence that financial economists measure financial risk using the market values, not the book values, of the debt and equity in a company's capital structure?

A. Yes. The fact that financial economists measure financial risk using the market values, not book values, of debt and equity in a company's capital structure, is

apparent from the discussion on pp. 503 – 507 of widely-used text, *Principles of Corporate Finance*, by Brealey, Myers, and Allen, 8th edition.

Q. Is there any meaningful relationship between a company's book value capital structure and the variance of return to shareholders in the marketplace?

A. No. The variance of the market return to shareholders depends on the company's market value capital structure, not its book value capital structure.

Q. Can you illustrate why financial risk depends on market values rather book values?

A. Yes. Assume that an individual buys a house at year end 2000, for a price of $200,000, and finances the purchase price with a $160,000 interest-only mortgage. Thus, the book value of the individual's equity in the house is $40,000. Now assume that, by year end 2005, the value of the house has increased to $300,000. Since the principal in the mortgage has not declined, the market value of the equity in the house is now $140,000 ($300,000 - $160,000 = $140,000). However, the book value of the equity is still $40,000. Finally, assume that by year end 2006, the market value of the house declines to $250,000. Does the $40,000 book value of the house have any impact on the risk of a decline in market value during 2006? Clearly, the answer is no. Since the market value of the house was $300,000 at the beginning of the year, the $50,000 decline in the market value still leaves the market value of the house ($250,000) well in excess of the $160,000 mortgage. The fact that the book value of the house is $40,000 is totally irrelevant.

Q. Is Mr. Hill's financial risk adjustment consistent with the economic definition of financial risk that you discuss above?

A. No. Mr. Hill incorrectly measured financial risk by comparing his recommended capital structure to the average book value capital structure of his proxy group. Mr. Hill's financial risk adjustment is incorrect because financial economists measure financial risk in terms of market value capital structures, not book value capital structures. To be consistent with financial economics, Mr. Hill should have compared his recommended capital structure to the average market value capital structure of his proxy companies.

Q. Did you present a financial risk adjustment in your direct testimony that correctly compares the company's recommended capital structure to the average market value capital structure of your proxy companies?

A. Yes. I presented such a financial risk adjustment on pp. 40 – 43 of my direct testimony and Schedule JVW-11.

III. REBUTTAL OF DR. WOOLRIDGE

Q. What is Dr. Woolridge's recommended rate of return on equity for AmerenUE?

A. Dr. Woolridge recommends that AmerenUE be allowed to earn a rate of return on equity equal to 9.0 percent.

Q. Do you agree with Dr. Woolridge's 9.0 percent recommended rate of return on equity for AmerenUE?

A. No. For all of the reasons discussed in my rebuttal of Mr. Hill, Dr. Woolridge's recommended rate of return on equity is below every reasonable indicator of the current cost of equity for electric utilities such as AmerenUE.

Q. What areas of Dr. Woolridge's testimony will you address in your rebuttal testimony?

A. I will address Dr. Woolridge's comments regarding: (1) discounted cash flow (DCF) approach; (2) capital asset pricing model (CAPM); and (3) tests of reasonableness.

A. Dr. Woolridge's DCF Approach

Q. What DCF model did Dr. Woolridge use to estimate AmerenUE's cost of equity?

A. Dr. Woolridge used an annual DCF model, $k = D_1 \div P_0 + g$, where k is the cost of equity, D_1 is the first period dividend, P_0 is the current stock price, and g is the average expected future growth in the company's earnings and dividends.

Q. What are the basic assumptions of Dr. Woolridge's annual DCF model?

A. Dr. Woolridge's annual DCF model is based on the assumptions that: (1) a company's stock price is equal to the present value of the future dividends investors expect to receive from their investment in the company; (2) dividends are paid annually; (3) dividends, earnings, and book value are expected to grow at the same constant rate forever; and (4) the first dividend is received one year from the date of the analysis.

Q. Do you agree with Dr. Woolridge's use of an annual DCF model to estimate AmerenUE's cost of equity?

A. No. Dr. Woolridge's annual DCF model is based on the assumption that companies pay dividends annually at the end of each year. Since Dr. Woolridge's proxy companies all pay dividends quarterly, Dr. Woolridge should have used the quarterly DCF model to estimate AmerenUE's cost of equity.

Q. Recognizing your disagreement with Dr. Woolridge's use of an annual DCF model, did Dr. Woolridge apply the annual DCF model correctly?

A. No. Dr. Woolridge's annual DCF model is based on the assumption that dividends will grow at the same constant rate forever. Under the assumption that dividends will grow at the same constant rate forever, the cost of equity is given by the equation, $k = D_0 (1 + g) / P_0 + g$, where D_0 is the current annualized dividend, P_0 is the stock price, and g is the expected constant annual growth rate. Thus, the correct first period dividend in the annual DCF model is the current annualized dividend multiplied by the factor, (*1 + growth rate*). Instead, Dr. Woolridge used the current annualized dividend as the first period dividend in his DCF model. He failed to multiply the annualized dividend by the factor (*1 + growth rate*). This incorrect procedure, apart from other errors in his methods, caused him to underestimate the cost of equity by approximately 20 basis points.

Q. How does Dr. Woolridge estimate the expected future growth component of the DCF cost of equity?

A. Dr. Woolridge considers Value Line data on historical growth rates in earnings, dividends, and book value, as well as Value Line data on projected growth rates in earnings, dividends, and book value. For most of his proxy companies, Value Line's average historical growth rates are significantly less than its projected growth rates. Dr. Woolridge also considers analysts' forecasts of future growth provided by First Call, Reuters, and Zacks, and internal growth estimates based on Value Line's estimates of retention ratios and rates of return on book equity. Dr. Woolridge's final estimate of the growth rate that investors expect for his proxy companies is based on his judgment.

Q. Do you agree with Dr. Woolridge's use of historical growth rates to estimate investors' expectation of future growth in the DCF model?

A. No. Historical growth rates are inherently inferior to analysts' forecasts because analysts' forecasts already incorporate all relevant information regarding historical growth rates and also incorporate the analysts' knowledge about current conditions and expectations regarding the future. My studies, described in my direct testimony at pp. 21 – 22, indicate that investors use analysts' earnings growth forecasts in making stock buy and sell decisions rather than historical or internal growth rates such as those presented by Dr. Woolridge.

Q. How do Value Line's projected growth rates for Dr. Woolridge's proxy group of electric utilities compare to Value Line's historical growth rates for these companies?

A. Value Line's projected growth rates are 300 to 400 basis points higher than its historical growth rates for Dr. Woolridge's proxy companies (see Dr. Woolridge's Exhibit__JRW-7, pp. 3 and 4).

Q. What is the internal growth method of estimating the growth component for the DCF method?

A. The internal growth method estimates expected future growth by multiplying a company's retention ratio, "b," times its expected rate of return on equity, "r." Thus, "g = b x r," where "b" is the percentage of earnings that are retained in the business and "r" is the expected rate of return on equity.

Q. Do you agree with the internal growth method for estimating growth in the DCF model?

A. No. As described in my rebuttal of Mr. Hill, the internal growth method is logically circular because it requires an estimate of the expected rate of return on equity, "r," in order to estimate the cost of equity using the DCF model. Yet, for regulated companies such as AmerenUE, the allowed rate of return on equity is set equal to the cost of equity.

Q. What rate of return on equity does Dr. Woolridge assume in his calculation of expected growth using his internal growth method?

A. Dr. Woolridge uses a rate of return on equity in the range 10.3 percent to 11.6 percent, with a midpoint equal to 10.95 percent (Wooldridge Exhibit__JRW-7, p. 4.)

Q. Is it reasonable to assume that Dr. Woolridge's proxy companies will earn a rate of return on equity of approximately 11.0 percent when he is recommending that they be allowed to earn only a return of 9.0 percent?

A. No. Investors are well aware that electric utilities are regulated by rate of return regulation. If investors truly believed that the utilities' cost of equity were equal to Dr. Woolridge's recommended 9.0 percent, they would forecast that the utilities would earn 9.0 percent on equity. Thus, Dr. Woolridge's recommended 9.0 percent rate of return on equity is inconsistent with his assumed 11.0 percent earned rate of return on equity for his proxy companies.

Q. Does Dr. Woolridge's internal growth method recognize that, in addition to growth from retained earnings, the companies in his proxy group can also grow by issuing new equity at prices above book value?

A. No. Dr. Woolridge's internal growth method underestimates the expected future growth of his proxy companies because it neglects the possibility that the companies can also grow by issuing new equity at prices above book value. Since the proxy companies are all selling at prices well in excess of book value, and Value Line forecasts that many of them will issue new equity over the next several years, Dr. Woolridge's failure to recognize the "external" component of future growth causes to him to significantly underestimate his proxy companies' expected future growth. This is particularly important at this point in time when the electric utility industry is expected to undertake substantial infrastructure investments and to finance part of this expansion through capital markets.[5]

Q. Do you agree with Dr. Woolridge's use of analysts' growth forecasts to estimate the expected growth component of his DCF model?

A. Yes. As discussed in my direct testimony, I recommend the use of analysts' growth forecasts for the purpose of estimating the expected growth component of the DCF model. I have conducted extensive studies that demonstrate that stock prices are more highly correlated with analysts' growth rates than with either historical growth rates or the internal growth rates considered by Dr. Woolridge.

5 See, for example, Value Line Investment Survey, "Electric Utility (Central) Industry," December 29, 2006.

Q. What growth rates did Dr. Woolridge obtain from First Call, Reuters, and Zacks?

A. As shown in Dr. Woolridge's Exhibit__ JRW-7, p. 5, Dr. Woolridge obtained a mean growth rate of 5.9 percent and a median growth rate of 5.0 percent.

Q. How do these growth estimates compare to current I/B/E/S analysts' growth rates for Dr. Woolridge's proxy companies?

A. The market-weighted average I/B/E/S growth rate for Dr. Woolridge's proxy electric companies is 7.42 percent, and the simple average growth rate is 6.37 percent. (See Vander Weide Rebuttal Schedule JVW-3.)

Q. Have you updated your DCF results for Dr. Woolridge's proxy companies using the most recent available data?

A. Yes. As noted above, Dr. Woolridge used the same proxy group of electric companies that I used in my direct testimony to estimate AmerenUE's cost of equity. The market-weighted average DCF result for these companies is 11.44 percent. If the two highest and two lowest results are eliminated from the proxy group, the market-weighted average result is 10.1 percent (see Vander Weide Rebuttal Schedule JVW-4).

Q. Have you also calculated DCF results for a group of electric utilities that currently meet your proxy selection criteria?

A. Yes. As was also described above, the market-weighted average result for the companies that currently meet my proxy selection criteria is 11.75 percent; and if the two highest and lowest results are eliminated from the group, the DCF result declines to 10.78 percent.

B. Dr. Woolridge's Capital Asset Pricing Model

Q. How does Dr. Woolridge use the CAPM to estimate the cost of equity for his proxy companies?

A. The CAPM requires an estimate of the risk-free rate, the company-specific risk factor or beta, and the expected return on the market portfolio. For his estimate of the risk-free rate, Dr. Woolridge used the yield to maturity on 10-year U. S. Treasury notes to arrive at his recommended rate of return on equity for AmerenUE. For his estimate of the company-specific risk, or beta, Dr. Woolridge used the simple average Value Line beta for his proxy companies. For his estimate of the expected risk premium on the market portfolio, Dr. Woolridge considered the results of a number of risk premium studies, and then applied his judgment to arrive at a risk premium estimate equal to 4.2 percent.

Q. Do you agree with Dr. Woolridge's use of the simple average Value Line beta for his proxy companies to estimate the beta component of the CAPM?

A. No. Although I agree with Dr. Woolridge's use of Value Line betas, I disagree with his use of a simple average Value Line beta for his proxy companies. Financial economists generally use market-weighted average betas to estimate the beta on a portfolio of companies such as Dr. Woolridge's proxy group of electric utilities because market-weighted betas best reflect the risk of an investment in the entire portfolio of companies. The market-weighted average beta of Dr. Woolridge's proxy group of companies is currently 0.97; and the simple average beta for his group of proxy companies has increased to 0.91.

Q. You note that Dr. Woolridge's 4.2 percent market risk premium in his CAPM is based on his judgment, which he asserts is supported by various equity risk

premium studies. Does Dr. Woolridge cite a specific paper that summarizes the equity risk premium studies he considered?

A. Yes. On page 40 of his testimony, Dr. Woolridge cites a paper by Richard Derrig and Elisha Orr ("Derrig Orr") which Dr. Woolridge claims is "the most comprehensive paper to date which summarizes and assesses the many risk premium studies."

Q. Does the Derrig Orr paper endorse a market risk premium of 4.2 percent?

A. No. The Derrig Orr paper reports the results of a large number of papers in the finance literature. Derrig Orr do not endorse or even report the 4.2 percent risk premium that Dr. Woolridge uses in his CAPM. Furthermore, Derrig and Orr provide several important caveats concerning the use of the research results from the literature that their paper summarizes. In particular, Derrig-Orr warn that many of the results reported in the literature they survey were based on data for periods prior to the large market correction of 2000 – 2002 and that risk premiums calculated from data before this period may not apply in the long run:

> Therefore, actuaries should be wary of using the low long-run estimates made prior to the large market correction of 2000 – 2002. [Richard A Derrig and Elisha D. Orr, "Equity Risk Premium: Expectations Great and Small," *North American Actuarial Journal*, Vol. 8, No. 1, page 59.]

In addition, Derrig and Orr argue that most of the equity risk premium estimates that are lower than the long-run historical estimates[6] have been unduly influenced by recent low dividend yields and data prior to 1926:

> Most of the ERP estimates lower than the unconditional historical estimate have an undue reliance on recent lower dividend yields (without a recognition of capital gains) and/or on data prior to 1926. [Derrig and Orr, p. 59.]

Finally, Derrig and Orr suggest that it is dangerous for actuaries to use ex ante forecasts that are different from the long-run realized average equity risk premium based on the Ibbotson data base:

> It is dangerous for actuaries to engage in simplistic analyses of historical ERPs to generate ex ante forecasts that differ from the realized mean. [Derrig and Orr, p. 60.]

Q. You also note that Dr. Woolridge's final 4.2 percent market risk premium is based in part on the "building blocks" methodology developed by Ibbotson and Chen. Did the Ibbotson Chen paper support Dr. Woolridge's recommended 4.2 percent risk premium at the time it was published?

A. No. The Ibbotson Chen paper supported an equity risk premium of 6 percent at the time it was published. However, using data through 2005, the Ibbotson Chen paper supports an equity risk premium equal to 6.28 percent (*2006 Yearbook Valuation Edition* at p. 98).

Q. Is the Ibbotson who co-authored the Ibbotson Chen equity risk premium paper also the Ibbotson who is Founder, Advisor, and Former Chairman of Ibbotson

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6 The best estimates of long-run historical risk premiums are found in the publication *Stocks, Bonds, Bills, and Inflation* published annually by Ibbotson Associates. The most recent long-run equity risk premium reported by Ibbotson Associates is 7.5 percent over 10-year Treasury notes and 7.1 percent on long-term Treasury bonds. See *Stocks, Bonds, Bills, and Inflation 2006 Yearbook*, Valuation edition, page 28.

Associates, a company that is the major provider of risk premium data to the financial community?

A. Yes, he is.

Q. Is the Chen who co-authored the Ibbotson Chen equity risk premium paper the same Chen who is President of Ibbotson Associates?

A. Yes, he is.

Q. What risk premium does Ibbotson Associates recommend for use in the CAPM?

A. Ibbotson Associates recommends a risk premium equal to 7.1 percent over the yield to maturity on 20-year Treasury bonds. Ibbotson Associates argues that the long-run historic arithmetic mean risk premium is most appropriate for use in the CAPM because the arithmetic mean is the best estimate of the expected risk premium on a forward-looking basis, and there is no evidence that risk premiums have declined over time as Dr. Woolridge suggests.

Q. What cost of equity would Dr. Woolridge have obtained from an application of the CAPM if he had implemented the CAPM correctly?

A. If he had implemented the CAPM correctly, Dr. Woolridge would have obtained a cost of equity for AmerenUE equal to 11.8 percent ([4.9 + (0.97 x 7.1)] = 11.8).

C. Dr. Woolridge's Tests of Reasonableness

Q. Does Dr. Woolridge attempt to test the reasonableness of his 9 percent recommended cost of equity for AmerenUE?

A. Yes. On page 53 of his testimony, Dr. Woolridge states, "To test the reasonableness of my 9.0 percent equity cost rate recommendation, I examine the

relationship between the return on common equity and the market-to-book ratios for the companies in the group of electric utility companies."

Q. What is the basic assumption underlying Dr. Woolridge's test of the reasonableness of his 9.0 percent recommended cost of equity?

A. Dr. Woolridge's test is based on his fundamental assumption that a company's return on equity will be greater than its cost of equity whenever its market-to-book ratio is greater than 1.0, and less than its cost of equity whenever its market-to-book ratio is less than 1.0. Dr. Woolridge's assumption is stated on pp. 13 – 16 of his testimony.

Q. What did Dr. Woolridge's examination of the relationship between the return on common equity and the market-to-book ratios for the electric companies reveal?

A. Dr. Woolridge's examination revealed that his electric company group has an average return on common equity equal to 10.8 percent and a market-to-book ratio equal to 1.79.

Q. What conclusions does Dr. Woolridge draw from his analysis of the rates of return on equity and the market-to-book ratios of the electric companies?

A. Since his electric companies have an average market-to-book ratio exceeding 1.0, Dr. Woolridge concludes that: (1) their average 10.8 percent earned return on common equity significantly exceeds these companies' cost of equity; and (2) his recommended 9.0 percent cost of equity is "reasonable." [Woolridge at 53.]

Q. Do you agree with Dr. Woolridge's conclusion that market-to-book ratios in excess of 1.0 indicate that his electric companies are earning rates of return on equity that are significantly above their equity cost rates?

A. No. Dr. Woolridge's conclusion implies that companies that are earning less than their costs of equity should have market-to-book ratios less than 1.0. However, it is common for companies whose accounting rates of return on book equity are less than their costs of common equity to have market-to-book ratios greater than 1.0. For example, there are many companies with negative returns on equity, or returns that are in the range 0 to 9.0 percent, Dr. Woolridge's recommended cost of equity, but with market-to-book ratios in excess of 1.0. These companies clearly could not be earning more than their costs of equity because the cost of equity cannot be negative, and none of these companies is earning more than Dr. Woolridge's low recommended cost of equity.

Q. Have you prepared an exhibit showing firms that have market to book ratios greater than 1.0 and negative rates of return on equity?

A. Yes. The Value Line Investment Survey universe of firms has 102 companies whose most recently reported accounting rates of return on equity are negative and whose market prices exceed book values, as shown on Vander Weide Rebuttal Schedule JVW-5. The average market-to-book ratio for these companies is 3.91, and their average rate of return on book equity is minus 19.23 percent. Clearly, a company whose rate of return on common equity is negative cannot be earning more than its cost of equity capital.

Q. Are there any electric utilities that have a negative rate of return on book equity and a market-to-book ratio greater than 1.0?

A. Yes. Aquila, Inc. has a rate of return on book equity equal to negative 12.06 percent and a market-to-book ratio of 1.34.

Q. Have you also prepared an exhibit showing firms that have market-to-book ratios greater than 1.0 and rates of return on book equity that are less than Dr. Woolridge's recommended 9.0 percent cost of equity?

A. Yes. As shown on Vander Weide Rebuttal Schedule JVW-6, the Value Line universe of firms has 324 companies that have market-to-book ratios above 1.0 and rates of return on book equity in the range 0 percent to 9 percent, Dr. Woolridge's recommended cost of equity. The average earned rate of return on equity for these companies is 5.91 percent, and the average market-to-book ratio, 2.24. Clearly these firms have market-to-book ratios greater than 1.0 even though they are earning significantly less than their costs of equity capital.

Q. Are there any electric, natural gas, or water companies that have rates of return on book equity in the range 0 to 9.0 percent, but market-to-book ratios greater than 1.0?

A. Yes. There are 18 electric utilities, five natural gas utilities, and two water companies with rates of return on equity in the range 0 to 9 percent, but market-to-book ratios in excess of 1.0. The average earned rate of return on book equity for these companies is 6.92 percent and the average market-to-book ratio is 1.74.

Q. How many companies are there in the Value Line universe of companies with reported market-to-book ratios?

A. The Value Line universe contains a market-to-book ratio for 1,570 companies.

Q. Of these 1,570 companies, how many companies have market-to-book ratios of less than 1.0?

A. Of the 1,570 companies with market-to-book ratios, only 56 companies have market-to-book ratios of less than 1.0.

Q. Is it likely, in a competitive economy such as ours, that only 56 out of 1,570 companies would be earning less than their costs of equity, as Dr. Woolridge would assert, while the remaining companies are earning in excess of their costs of equity?

A. No. In a competitive economy such as ours, one would expect the average company to earn exactly its cost of equity. Thus, roughly half the companies would be earning more than their costs of equity, and half would be earning less than their costs of equity.

Q. What conclusions do you draw from these long lists of companies that have negative or low rates of return on equity and market prices well in excess of book values?

A. I conclude that no inferences about the reasonableness of Dr. Woolridge's estimated cost of equity can be made from an analysis of market-to-book ratios and current earned rates of return on equity. Dr. Woolridge's basic assumption that a company having a market-to-book ratio greater than 1.0 is earning more than its cost of equity is simply incorrect.

Q. As an alternative test of reasonableness, have you compared Dr. Woolridge's recommended 9.0 percent cost of equity to recent allowed rates of return on equity for public utilities in Missouri and other Midwestern states?

A. Yes. As discussed above, recent allowed rates of return on equity in Missouri and other Midwestern states have been in the range 10.8 percent to 11.25 percent, 180 to 225 basis points higher than Dr. Woolridge's recommended 9.0 percent rate of return on equity. From this data, it is evident that his recommended rate of return on equity is unreasonably low.

Q. On pages 14-15 of his direct testimony, Dr. Woolridge reports the results of three regression analyses that allegedly support his claim that: (1) companies with market-to-book ratios greater than 1.0 are earning more than their costs of equity; (2) companies with market-to-book ratios equal to 1.0 are earning their costs of equity; and (3) companies with market-to-book ratios less than 1.0 are earning less than their costs of equity. Do Dr. Woolridge's regression analyses provide any support for Dr. Woolridge's claim?

A. No. Dr. Woolridge's regression analyses do not support his claim. First, none of the companies in Dr. Woolridge's sample has a market-to-book ratio less than 1.0, even though the estimated rates of return on equity for this sample range from 3.5 percent to 24.0 percent.[7] Second, there are 23 companies (15 electric, 5 natural gas, and 3 water companies) that have an estimated return on equity less than or equal to 9.0 percent,

7 Dr. Woolridge's regression data show one electric company, Central Vermont Public Service, with a market-to-book ratio of 1.00. However, Dr. Woolridge did not specify the time to which his data refer; and Value Line currently shows Central Vermont Public Service with a market-to-book ratio of approximately 1.3. There currently are no Value Line electric, natural gas, or water utilities that have a market-to-book ratio of 1.0 or lower. (In addition, Central Vermont Public Service is a company that has experienced significant financial difficulty and has a non-investment grade.)

Dr. Woolridge's recommended cost of equity, even though these companies have market-to-book ratios exceeding 1.0.[8] The average market-to-book ratio for these companies is 1.49, while the average expected return on equity is only 7.5 percent. These data clearly contradict Dr. Woolridge's claim that companies earning less than their cost of equity will have market-to-book ratios of less than 1.0.

Third, Dr. Woolridge's regression equation indicates that electric companies with a return on equity of only 5.2 percent will have a market-to-book ratio equal to 1.0, and natural gas companies with a rate of return on equity equal to 3.3 percent will have a market-to-book ratio equal to 1.0. Clearly, neither a return of 5.2 percent nor of 3.3 percent can be equal to a company's cost of equity, since these values are less than the rate of return on risk-free Treasury bills.

IV. REBUTTAL OF MR. GORMAN

Q. What is Mr. Gorman's recommended cost of equity for AmerenUE?

A. Mr. Gorman recommends a cost of equity for AmerenUE equal to 9.8 percent.

Q. How did Mr. Gorman estimate AmerenUE's cost of equity?

A. Mr. Gorman applied several cost of equity methodologies to a proxy group of electric companies. His cost of equity methodologies include: (1) a constant growth DCF; (2) a risk premium method; and (3) a Capital Asset Pricing Model ("CAPM").

8 As noted above, Dr. Woolridge did not specify the time to which his data refer. Currently, there are 28 companies that have an estimated return on equity equal to or less than 9.0 percent, but market-to-book ratios greater than 1.0. The average market-to-book ratio for these companies is 1.58 and the average expected return on equity is 6.7 percent.

A. Mr. Gorman's Proxy Companies

Q. What proxy companies does Mr. Gorman use to estimate AmerenUE's cost of equity?

A. Mr. Gorman uses the group of 13 electric utilities shown on his Schedule MPG-1 to estimate AmerenUE's cost of equity.

Q. What criteria did Mr. Gorman use to select his proxy group of 13 electric utilities?

A. Mr. Gorman chose Value Line electric utilities that met the following seven selection criteria (see Gorman Direct at 6):

a. Investment grade bond ratings from S&P and Moody's
b. Common equity ratios within the range of 40 percent to 60 percent
c. No suspension of dividends over the last two years
d. Consensus growth rates available
e. Business profile scores in the range of 4 to 6 from S&P
f. No significant merger and acquisition activity
g. No non-regulated business risk

Q. Do you agree with Mr. Gorman's proxy group selection criteria?

A. No. As I have discussed previously, the purpose of proxy group selection is to choose the largest possible group of comparable risk companies with sufficient data to estimate the cost of equity. One possible measure of comparable risk is a company's bond rating, which Mr. Gorman included in his criteria. However, Mr. Gorman's criteria that a company must have an equity ratio in the range 40 percent to 60 percent, business profile scores in the range 4 to 6, and no non-regulated business risk are superfluous because these are already considered by the credit rating agencies when they assign a company's credit rating. Mr. Gorman's three superfluous criteria greatly reduce the number of companies in his proxy group and thus reduce the reliability of his cost of equity estimate.

Q. Does Mr. Gorman explain why he selected his specific range of common equity ratios or business profile scores?

A. No. Mr. Gorman does not explain why he selected common equity ratios in the range 40 percent to 60 percent or business profile scores in the range 4 to 6. His choices appear to be arbitrary and serve only to reduce the number of companies available for his proxy group.

Q. Does Mr. Gorman explain how he measures his criteria, "no non-regulated business risk"?

A. No. Indeed, his application of this criteria also appears to be arbitrary since many of his companies have some revenues from non-regulated business activities.

Q. Has Mr. Gorman always used these same selection criteria to choose proxy companies?

A. No. In a case for Progress Energy Florida in 2005, Docket No. 050078, Mr. Gorman filed testimony on July 13, 2005, in which he used my recommended proxy groups to estimate Progress Energy Florida's cost of equity:

> Q. How did you select your proxy risk group of publicly traded utilities in estimating a fair return for PEF?
>
> A. I first reviewed the proxy risk group of electric and gas utility companies relied on by PEF witness Dr. James Vander Weide. Based on a careful review of the companies included in his comparable groups, I have determined that those two groups are reasonably risk comparable to PEF. Hence, in an effort to minimize the issues between the methods I will use to estimate a fair return for PEF, and those contained in Dr. Vander Weide's analysis, I will use the same two proxy groups used by Dr. Vander Weide. I have reached this decision after reviewing the risk parameters of these groups and determined *[sic]* that they are reasonable risk proxies for use in estimating the cost of equity to PEF. [Gorman Direct Testimony, FPSC Docket No. 050078-EI, July 13, 2005, Page 16.]

My proxy groups in the Progress Energy Florida proceeding were selected using the same criteria that I have recommended in this proceeding.

Q. You note that Mr. Gorman adopted your proxy selection criteria in the Progress Energy case in Florida, and that you have employed the same selection criteria in this case as you employed in the Florida case. How does your recommended proxy group in this case compare in risk to Mr. Gorman's smaller group of 13 electric utilities?

A. As noted above, my proxy group of 34 electric utilities has an average S&P bond rating of BBB+ and a Value Line Safety Rank of 2. Mr. Gorman's proxy group of 13 companies also has an average S&P bond rating of BBB+ and a Value Line Safety Rank of 2.

Q. What conclusion do you draw from your observation that your proxy group has more than twice as many companies as Mr. Gorman's, and has the same S&P bond rating and Value Line Safety Rank?

A. For all the reasons I have discussed above, I conclude that my proxy group provides a significantly more reliable cost of equity estimate than Mr. Gorman's.

B. Mr. Gorman's Risk Premium Model

Q. How did Mr. Gorman estimate the required risk premium for investing in his electric company proxy group?

A. Mr. Gorman estimated the required risk premium for investing in his proxy electric utilities from data on the average authorized electric utility rates of return on equity for each year from 1986 to September 2006. Mr. Gorman found that the average authorized rate of return on equity for electric utilities over this period was 5.02 percent higher than the

yield to maturity on long-term Treasury bonds and 3.64 percent higher than the yield to maturity on A-rated utility bonds.

Q. Do you agree with Mr. Gorman's method of estimating the required risk premium on electric utility stocks?

A. No. Mr. Gorman fails to recognize that the Commission has a responsibility to make an independent assessment of the required return on equity for AmerenUE in this proceeding. In addition, Mr. Gorman fails to recognize that the indicated risk premium in his data base tends to increase as interest rates decline. Mr. Gorman should have adjusted his average risk premiums to account for the relationship between the allowed risk premium on equity and the level of interest rates on long-term Treasury bonds and A-rated utility bonds.

Q. Have you studied the relationship between the allowed rates of return on equity by regulatory commissions and the interest rates on long-term Treasury bonds and A-rated utility bonds?

A. Yes. Using the data found in Mr. Gorman's Exhibits MPG-6 and MPG-7, I performed a regression analysis of the relationship between the risk premium implied by the allowed rates of return on equity issued by regulatory commissions and the interest rates on long-term Treasury bonds and A-rated utility bonds. I found that the risk premium implied by allowed rates of return compared to the yield on long-term Treasury bonds is given by the relationship:

$$RP_{AUTHORIZED} = 7.72 - 0.404 \times T_B$$

where:

$RP_{AUTHORIZED}$	=	the risk premium implied by utility commission authorized rates of return on equity,
7.72 and 0.404	=	estimated regression coefficients; and
T_B	=	the yield on long-term Treasury bonds.

Similarly, I found that the risk premium implied by allowed rates of return compared to the yield on A-rated utility bonds is given by the relationship:

$$RP_{AUTHORIZED} = 6.79 - .391 \times A_B$$

where:

$RP_{AUTHORIZED}$	=	the risk premium implied by utility commission authorized rates of return on equity,
6.79 and 0.391	=	estimated regression coefficients; and
A_B	=	the yield on Moody's A-rated utility bonds.

Q. What risk premiums do you obtain from your statistical analysis of the relationship between allowed rates of return and interest rates using Mr. Gorman's data?

A. Using Mr. Gorman's forecasted interest rates, I obtain a risk premium of 5.66 percent over the yield to maturity on 20-year U.S. Treasury bonds and 4.33 percent over the yield to maturity on utility bonds. These risk premiums are approximately 65 to 70 basis points higher than the 5.02 percent and 3.64 percent risk premiums obtained by Mr. Gorman.

Q. Why are the estimated risk premiums from your regression analyses so much higher than the average risk premiums over the 1986 – 2006 period that Mr. Gorman used?

A. The risk premiums from my regression analyses are higher than the average risk premiums over the period of Mr. Gorman's study because, as my regression analyses demonstrate, risk premiums generally increase when interest rates decline; and interest rates have declined over the period of Mr. Gorman's study.

Q. How did Mr. Gorman estimate the interest rate component of his risk premium method?

A. Mr. Gorman estimated the interest rate component of his risk premium method in two ways. For his risk premium over the Treasury bond yield, Mr. Gorman used the Blue Chip 5.1 percent projected yield on 30-year Treasury bonds. For the risk premium over utility bonds, Mr. Gorman used the average yield on Baa-rated utility bonds for the three-month period ending November 11, 2006.

Q. Does Mr. Gorman explain why he used a forecasted interest rate in the case of the Treasury bond risk premium, but an historical three-month average interest rate in the case of the utility bond risk premium?

A. No, he does not.

Q. What interest rates should Mr. Gorman have used in his risk premium analysis?

A. Mr. Gorman should have used forecasted interest rates on both Treasury bonds and A-rated utility bonds in his risk premium analyses because AmerenUE's rates will not be in effect until mid-2007.

Q. What cost of equity estimates would Mr. Gorman have obtained from his risk premium analysis if he had used forecasted interest rates to measure the interest rate component of his risk premium equation?

A. Using the forecasted interest rate of 5.1 percent on long-term Treasury bonds and the 6.3 percent yield on Baa-rated utility bonds, Mr. Gorman would have obtained estimated risk premiums of 5.66 percent over long-term Treasury bonds and 4.33 percent over utility bonds. Adding these risk premium estimates to the interest rates, Mr. Gorman

would have obtained cost of equity estimates of 10.76 percent and 10.63 percent. These results exceed Mr. Gorman's risk premium estimates of the cost of equity by approximately 50 basis points and exceed his recommended cost of equity by 90 basis points.

C. Mr. Gorman's Capital Asset Pricing Model ("CAPM")

Q. How does Mr. Gorman use the CAPM to estimate the cost of equity for his proxy companies?

A. The CAPM requires an estimate of the risk-free rate, the company-specific risk factor or beta, and the expected return on the market portfolio. For his estimate of the risk-free rate, Mr. Gorman used the forecasted yield to maturity on long-term Treasury bonds. For his estimate of the company-specific risk, or beta, Mr. Gorman used the median Value Line beta for his proxy companies. For his estimate of the expected return on the market portfolio, Mr. Gorman used data on the return on the S&P 500 compared to the return on 20-year Treasury bonds over the period 1926 to 2006 reported in Ibbotson Associates' 2006 Yearbook.

Q. What risk premium value did Mr. Gorman use in his application of the CAPM?

A. As explained on page 19 of his testimony, Mr. Gorman used a risk premium value equal to 6.5 percent in his CAPM approach.

Q. Do you agree with Mr. Gorman's use of a 6.5 percent estimate of the risk premium on the market portfolio in his CAPM approach?

A. No. Mr. Gorman relies on data from Ibbotson Associates to estimate the expected risk premium on the market portfolio. Ibbotson Associates strongly recommend the use of an arithmetic mean risk premium equal to 7.1 percent, not 6.5 percent. The Ibbotson

Associates 7.1 percent recommended risk premium is the difference between the arithmetic average return on the market portfolio over the period 1926 through 2005 and the arithmetic average income return on long-term Treasury bonds.

Q. Why does Ibbotson Associates use the average income return on long-term Treasury bonds rather than the average total return on long-term Treasury bonds to measure the market risk premium?

A. Ibbotson Associates explain the use of the income return on long-term Treasury bonds on page 77 of the valuation edition of their 2006 yearbook:

> Price changes in bonds due to unanticipated changes in yields introduce price risk into the total return. Therefore, the total return on the bond series does not represent the riskless rate of return. The income return better represents the unbiased estimate of the purely riskless rate of return, since an investor can hold a bond to maturity and be entitled to the income return with no capital loss.

Q. How did Mr. Gorman estimate the risk-free rate component of his CAPM approach?

A. Mr. Gorman estimated the risk-free rate component of his CAPM approach using the forecasted 5.1 percent yield to maturity on long-term Treasury bonds.

Q. How did Mr. Gorman estimate the beta component of his CAPM approach?

A. Mr. Gorman used the median Value Line beta of 0.80 for his proxy companies.

Q. What are the current median and mean Value Line betas for Mr. Gorman's proxy electric group?

A. As shown below, the current median beta for Mr. Gorman's proxy group is 0.85, and the current mean Value Line beta for this group is also 0.85.

TABLE 3
CURRENT VALUE LINE BETAS FOR
MR. GORMAN'S PROXY COMPANY GROUP

Company	*Value Line Beta*
Alliant Energy	0.95
Ameren Corp.	0.75
DTE Energy	0.75
FirstEnergy Corp.	0.80
IDACORP, Inc.	1.05
NiSource Inc.	0.95
OGE Energy	0.75
Pinnacle West Capital	1.00
Puget Energy Inc.	0.85
SCANA Corp.	0.85
Southern Co.	0.70
Wisconsin Energy	0.80
Xcel Energy Inc.	0.90
Average	0.85
Median	0.85

Q. How do the mean Value Line betas for Mr. Gorman's proxy group compare to the mean Value Line betas for your larger group of electric utilities?

A. At the time of my direct testimony, the mean Value Line beta for my comparable group of electric utilities was 0.90. The average Value Line beta for the companies that meet my selection criteria now is 0.97.

Q. What cost of equity range would Mr. Gorman have obtained from his CAPM approach if he had correctly used the Ibbotson Associates' 7.1 percent market risk premium and the average 0.97 Value Line beta for a broader group of comparable electric utilities?

A. Mr. Gorman would have obtained a CAPM cost of equity estimate of 11.8 percent, 150 basis points higher than the 10.3 percent CAPM cost of equity estimate Mr. Gorman reports in his testimony. This estimate is based on a current risk-free rate of

4.9 percent, the Ibbotson risk premium of 7.1 percent, and the current average 0.97 Value Line beta for a broader group of comparable electric utilities.

D. Response to Mr. Gorman's Comments on Dr. Vander Weide's Testimony

Q. What areas of your direct testimony does Mr. Gorman critique in his direct testimony?

A. Mr. Gorman critiques my: (1) proxy companies; (2) DCF studies; (3) ex post and ex ante risk premium studies; (4) CAPM studies; and (5) financial risk adjustment.

Q. What proxy companies did you use to estimate AmerenUE's cost of equity?

A. I used both the large group of 34 electric utilities shown in my direct testimony in Schedule JVW-1 and the group of 11 natural gas utilities shown in Schedule JVW-2.

Q. Has Mr. Gorman accepted your groups of electric and natural gas utilities in prior cases?

A. Yes. As noted above, Mr. Gorman accepted my proxy groups of electric and natural gas utilities in the 2005 Progress Energy Florida proceeding. I used the same proxy group selection criteria in that proceeding as I used in this proceeding.

Q. What are Mr. Gorman's criticisms of your proxy companies in this case?

A. Mr. Gorman claims that: (1) "Dr. Vander Weide provided no analysis that showed that either his electric or LDC gas proxy groups reasonably approximate the investment risk of AmerenUE [Gorman Direct at 47];" and (2) "Dr. Vander Weide's electric and gas groups contain companies that are not reasonable risk proxies for AmerenUE [Gorman Direct at 48]."

Q. In your direct testimony, did you in fact provide an analysis of the risk of your proxy electric and natural gas company groups compared to AmerenUE?

A. Yes. On pp. 25 and 27 of my direct testimony I compared the average S&P bond rating and average Value Line Safety Rank of my proxy electric and natural gas groups to the S&P bond rating of AmerenUE and Value Line Safety Rank of Ameren (AmerenUE does not have a Safety Rank).

Q. What did your comparable risk analysis reveal?

A. My comparable risk analysis revealed that the average S&P bond ratings for my proxy electric and natural gas groups are BBB+ and A-, respectively; and AmerenUE's S&P bond rating was BBB+ (AmerenUE's S&P bond rating has now been lowered to BBB). My analysis also revealed that the average Value Line Safety Rank for both proxy groups was 2, and the Value Line Safety Rank for Ameren is 1.

Q. Does every company in your proxy groups of electric and natural gas companies have precisely the same risk as AmerenUE?

A. No. As shown on Schedules JVW-1 and JVW-2 of my direct testimony, some of my proxy companies are considered by S&P and Value Line to be more risky, and some are considered to be less risky. However, as a group, my proxy electric and natural gas companies have approximately the same risk as AmerenUE.

Q. Is it reasonable to require that every company in a proxy group has exactly the same risk as the company whose cost of equity is being estimated?

A. No. If the analyst were to include only those companies that have exactly the same risk as the company whose cost of equity is being estimated, the proxy group would undoubtedly be too small to provide reliable cost of equity estimates. In selecting

appropriate proxy groups, it is desirable to have as large a group as possible in order to reduce the inherent uncertainties in estimating the cost of equity for individual companies. Therefore, it is only necessary that the average risk of the proxy group be comparable to the risk of the company whose cost of equity is being estimated.

Q. Mr. Gorman implies in his criticism of your proxy groups that his proxy companies are comparable in risk to AmerenUE, while your proxy groups are not. How do the average S&P bond ratings and Value Line Safety Ranks of your proxy groups compare to the average S&P bond ratings and Value Line Safety Ranks of Mr. Gorman's proxy group?

A. The table below displays the average Value Line Safety Ranks and S&P bond ratings for my proxy groups of 45 companies and the average Value Line Safety Rank and S&P bond rating for Mr. Gorman's recommended proxy group. As shown there, my recommended proxy groups are not more risky than Mr. Gorman's based on these risk measures.

TABLE 4
COMPARISON OF VALUE LINE SAFETY RANK
AND S&P BOND RATINGS FOR
MR. GORMAN'S AND DR. VANDER WEIDE'S
RECOMMENDED PROXY COMPANY GROUPS

	Value Line Safety Rank	*S&P Bond Rating*	*S&P Bond Rating (numerical)*
Gorman 13-Company Electric Group	2	BBB+ to BBB	6.5
Vander Weide 34-Company Electric Group	2	BBB+	6.3
Vander Weide 11-Company Gas Group	2	A	4.4

Q. You mentioned earlier that Mr. Gorman accepted your risk proxy companies in a recent Progress Energy Florida case. Did you also use S&P bond

ratings and Value Line Safety Ranks to measure the risk of your proxy companies in that case?

A. Yes.

Q. Did Mr. Gorman accept your use of S&P bond ratings and Value Line Safety Ranks in that case?

A. Yes, he did.

Q. Mr. Gorman claims that some of your proxy companies have higher S&P business risk profiles than AmerenUE (Gorman Direct at 48). Does S&P consider a company's business risk profile when it determines the company's bond rating?

A. Yes. S&P considers all risk factors, including business risk profile, when it determines a company's bond rating. Thus, S&P considers all utilities with the same bond rating to have the same risk, even if the business risk profiles of companies with the same bond rating are different.

Q. What are Mr. Gorman's criticisms of your DCF analysis?

A. Mr. Gorman argues that the analysts' growth forecasts used in my DCF analysis are too high to be sustainable. In addition, he claims that my DCF results are inflated because I used market-weighted rather than simple average results. Finally, he contends that I should have excluded the impact of quarterly dividend payments in my DCF analyses.

Q. Why did you use analysts' growth forecasts to estimate the growth component of your DCF analysis?

A. I used analysts' growth forecasts to estimate the growth component of my DCF analysis because the DCF model requires the growth forecasts of investors, and my

studies indicate that analysts' growth forecasts are the best proxy for investors' long-term growth expectations in the DCF model.

Q. Mr. Gorman claims that the average analysts' growth rates in your DCF analysis "exceed a reasonable and rational assessment of what the utilities' long-term sustainable growth rate could be." (Gorman Direct at 49.) Do you agree with his claim?

A. No. First, I disagree with Mr. Gorman's attempt to impose his view of "rationality" on investors. The cost of equity is determined by investors in the marketplace, not by Mr. Gorman. If investors use analysts' growth forecasts in making stock buy and sell decisions, and my studies indicate that they do, the analysts' growth forecasts should be used to estimate the growth component of the DCF model, whether or not Mr. Gorman believes these growth forecasts are "rational."

Second, I disagree with Mr. Gorman's assumption that a "long-term sustainable growth rate cannot exceed the nominal projected growth in GDP." A company's nominal growth can exceed the nominal growth in GDP for many years if either: (1) the unit demand for the company's products is expected to grow faster than GDP for many years; or (2) the company's prices are expected to grow faster than the general level of inflation for many years.

Q. Why did you use market-weighted rather than simple average results in your DCF analyses?

A. I used market-weighted results because market weights indicate the relative share of each company in the typical investor's portfolio of electric and natural gas utilities;

and the expected return on a typical portfolio of electric and gas utilities depends on the market values of the utilities in the portfolio.

Q. Mr. Gorman also argues that investors can earn reinvestment returns twice when the quarterly DCF model is used to estimate the cost of equity. (Gorman Direct at 47.) Is he correct?

A. No. The quarterly DCF model only assumes that dividends are reinvested once, at the time they are received. As I explained above and in my direct testimony, the quarterly DCF model is the correct model to estimate the cost of equity for companies that pay dividends quarterly because it correctly represents the quarterly timing of dividend payments to investors. Since my role in this proceeding is to estimate investors' required rate of return on an equity investment in utilities that are similar in risk to AmerenUE, I have used the quarterly DCF model in my DCF analyses.

Q. What are Mr. Gorman's criticisms of your ex ante and ex post risk premium analyses?

A. Mr. Gorman claims that: (1) my ex ante risk premium analysis is essentially the same as my DCF analysis because I used the DCF model to estimate the ex ante risk premium; (2) I intentionally chose a time period that was designed to inflate my results; (3) I should have used actual rather than forecasted interest rates in both the ex ante and ex post risk premium analyses; and (4) my ex post risk premium results for the S&P 500 are not relevant.

Q. Do you agree with Mr. Gorman's claim that your ex ante risk premium analysis is the same as your DCF analysis?

A. No. Mr. Gorman fails to realize that the purpose of the ex ante risk premium study is to smooth out the fluctuations in DCF results by examining both DCF results over a longer period of time and the relationship between DCF results and interest rates. Thus, the ex ante risk premium approach is an additional test of the cost of equity because it provides important information that is not available in simple, point-in-time DCF results for electric utilities.

Q. Did you intentionally choose a time period in your ex ante risk premium analysis that was designed to inflate your results?

A. No. First, as I explained in my direct testimony, my two ex ante risk premium studies cover slightly different time periods, with the natural gas company risk premium study extending over a longer period of time, for the simple reason that I began doing an ex ante study using natural gas companies before I began performing a similar study for the electric companies. As I also discussed in my direct testimony, the ex ante studies require that the DCF model be estimated for every company in every month of the study period and are therefore very data intensive, and I perceived no need to incur the cost of extending the electric ex ante study period further back in time. Second, contrary to Mr. Gorman's assertion, the absence of risk premium data for 1998 in my electric company sample does not inflate my results. In fact, my natural gas group contains data for 1998; and the estimated risk premium for my natural gas group exceeds my estimated risk premium for the electric group.

Q. Why did you use forecasted interest rates rather than current interest rates to estimate the interest rate component of your risk premium analyses?

A. I used forecasted interest rates for the test year 2007 in my risk premium analyses because 2007 is the first year in which AmerenUE's rates will be in effect.

Q. Did Mr. Gorman also use forecasted interest rates when he estimated AmerenUE's cost of equity using his risk premium approach?

A. Yes. In his risk premium analysis comparing the expected return on an equity investment in AmerenUE to the interest rate on 20-year Treasury bonds, Mr. Gorman used forecasted interest rates rather than current interest rates.

Q. Do you agree with Mr. Gorman's contention that your ex post risk premium results for the S&P 500 are not relevant in this proceeding?

A. No. Mr. Gorman fails to note that I provided ex post risk premium results for both the S&P 500 [Exhibit No.___(JVW-5)] and the S&P Utilities [Exhibit No. ___ (JVW-6)] over the period 1937 through 2005. The ex post risk premium for the S&P 500 was 5.1 percent and the ex post risk premium for the S&P Utilities was 4.5 percent over the yield on A-rated utility bonds. Since the S&P utility stocks faced little or no competition over much of the period since 1937, I believe electric utilities today face risks that are somewhere in between the average risk of the S&P Utilities and the S&P 500 over the years of my study. Thus, taken in conjunction with my ex post risk premium studies on the S&P Utilities, the risk premium on the S&P 500 is relevant in this proceeding.

Q. What are Mr. Gorman's criticisms of your CAPM analysis?

A. Mr. Gorman claims that: (1) I should have used the total return on bond investments rather than the income return on bond investments to measure the expected risk premium on the market portfolio; and (2) I over-estimated the beta component of the CAPM.

Q. What is the difference between the total return on a bond investment and the income return on a bond investment?

A. The total return on a bond investment includes both the interest earned on the bond investment and the capital gain or loss that the investor experiences on the bond when interest rates change. The income return on a bond investment includes only the known interest rate at the time the investment is made.

Q. Why did you use the arithmetic mean income return on long-term Treasury bonds rather than the arithmetic mean total return on long-term Treasury bonds in your CAPM analyses?

A. I used the arithmetic mean income return on long-term Treasury bonds in my CAPM analyses because the CAPM requires that the return on equity investments be compared to the rate of return on a risk-free investment. Since capital gains and losses are highly uncertain, the income return on Treasury bonds is the best estimate of the risk-free rate in the long-horizon CAPM.

Q. Why does Mr. Gorman believe that your beta estimates are over-stated?

A. Mr. Gorman believes that my beta estimates are over-stated because: (1) my proxy group includes companies with beta estimates exceeding 1.0; and (2) many of my proxy companies, in Mr. Gorman's opinion, are more risky than AmerenUE.

Q. Does the fact that several of your proxy companies have beta estimates that exceed 1.0 indicate that your proxy group is more risky than AmerenUE?

A. No. Beta estimates for individual companies can only be estimated with a high degree of uncertainty. As a result, the beta estimate for an individual company is relatively meaningless. However, the errors in estimating the beta for an individual company can be reduced by estimating the average beta for a portfolio of companies, as I did in my CAPM analysis. Thus, the average beta for the proxy group is a better estimate of an individual company's beta than a company's own reported beta.

Q. Do you agree with Mr. Gorman's claim that many of your proxy companies are more risky than AmerenUE?

A. No. As I have explained earlier in this rebuttal, I explicitly compared the average risk of my proxy company groups to AmerenUE and found that they were comparable.

Q. How do investors measure the financial risk on an equity investment?

A. As I explained in my direct testimony, investors measure financial risk by a company's debt to equity ratio, where both debt and equity are measured in terms of their market values.

Q. Why did you adjust the cost of equity results for your proxy companies to reflect the average difference between the financial risk of your proxy companies and the financial risk reflected in AmerenUE's recommended capital structure?

A. As explained in my testimony, I adjusted my cost of equity results for my proxy companies because these results reflect a lower degree of financial risk than AmerenUE's recommended capital structure. In making this assessment, I recognized that

shareholders invest in the equity of my proxy companies in the market place and hence measure the financial risk of the proxy companies based on these companies' market value capital structures, while AmerenUE is recommending a book value capital structure. Since investors demand a higher return for bearing greater risk, an adjustment is required to apply the cost of equity result for the proxy companies to AmerenUE's recommended capital structure.

Q. Does Mr. Gorman agree with your financial risk adjustment?

A. No. Mr. Gorman argues that I only examined financial risk, not business risk and failed to compare the book value capital structures of my proxy groups to AmerenUE's book value capital structure.

Q. Is it necessary to consider AmerenUE's relative business risk as part of your cost of equity adjustment?

A. No. Since, as I demonstrated in my direct testimony, AmerenUE's business risk is similar to the average business risk of my proxy companies, an adjustment for differences in business risk was not required to estimate AmerenUE's cost of equity.

Q. Do you agree with Mr. Gorman's assertion on page 38 of his testimony that you should have compared your proxy companies' book value capital structures to AmerenUE's book value capital structure?

A. No. As I explained in my direct testimony and in my rebuttal of Mr. Hill, the financial risk of an equity investment in my proxy companies is based on investors' assessments of the companies' market value capital structures, not their book value capital structures. However, AmerenUE is recommending a book value capital structure in this proceeding that reflects a significantly higher degree of financial risk than is contained in my

cost of equity estimates for the proxy companies. Thus, it is appropriate for me to compare the market value capital structures of my proxy companies to the recommended book value capital structure of AmerenUE.

Q. After making numerous adjustments to your cost of equity analyses, Mr. Gorman claims on page 38 of his testimony that your cost of equity analyses support his recommended cost of equity for AmerenUE. Is this a fair characterization of your analyses?

A. No. As stated in my direct testimony, my analyses support a 12.2 percent cost of equity, not Mr. Gorman's low 9.8 percent cost of equity recommendation.

V. REBUTTAL OF MR. KING

Q. What is Mr. King's recommended cost of equity for AmerenUE in this proceeding?

A. Mr. King recommends a 9.65 percent cost of equity for AmerenUE.

Q. How did Mr. King estimate AmerenUE's cost of equity?

A. Mr. King applied the DCF and CAPM methodologies to a proxy group of 24 electric companies.

A. Proxy Companies

Q. How did Mr. King arrive at his proxy group of 24 electric utilities?

A. Mr. King began with the list of 34 Value Line electric utilities that I used in my direct testimony. Mr. King then added FPL because it is no longer involved in merger negotiations, and also added Edison International. From this group Mr. King eliminated four companies because they are more heavily involved in gas distribution than electric service (NiSource, OGE, Sempra, and Vectren); one company because it is heavily involved in non-

utility activities, (MDU); one company because it has a low percentage of equity in its book value capital structure, (TXU); and six companies (Dominion, Duke, Great Plains, Otter Tail, Pepco Holdings, and WPS Resources) because they have less than 60 percent of their revenues from regulated services.

Q. Do you agree with Mr. King's decision to eliminate NiSource, OGE, Sempra, and Vectren because they are more heavily involved in natural gas than electricity?

A. No. Mr. King fails to recognize that one of the purposes of proxy group selection is to select companies of similar risk. Since all companies that are similar in risk have the same cost of equity, it is irrelevant whether they are in exactly the same line of business.

Q. Did you present any evidence in your direct testimony that natural gas companies are similar in risk to electric companies?

A. Yes. In Schedules JVW-1 and JVW-2 of my direct testimony, I demonstrate that natural gas companies, in fact, are conservative risk proxies for electric utilities. I also discuss reasons why natural gas companies are similar in risk to electric utilities on page 27 of my direct testimony.

Q. Do you agree with Mr. King's decision to eliminate MDU from your proxy group because it is involved in unregulated activities as well as generation and distribution of natural gas?

A. No. Mr. King fails to recognize that the primary purpose of proxy group selection is to choose a group of companies of comparable risk. As shown in my direct testimony, MDU is a safe company, with an S&P bond rating of A- and a Value Line Safety

Rank of 1. In addition, since Value Line includes MDU in its electric utility classification, it is reasonable to believe that investors consider MDU to be in the electric utility business.

Q. Do you agree with Mr. King's decision to eliminate TXU from your proxy group because it allegedly has greater financial risk than the other companies in the group?

A. No. Mr. King incorrectly measures financial risk using TXU's book value capital structure rather than its market value capital structure. Although TXU's percentage of book equity is currently low as a result of TXU's decision to write-off certain unregulated operations, its operating cash flows continue to be strong; and its market value capital structure actually contains a higher percentage of equity, approximately 70 percent, than most of the other companies in my proxy group. (In addition, I also note that three of the companies that Mr. King eliminated from my proxy group, MDU, Sempra, and TXU, have the highest percentages of equity in the entire sample, 79 percent, 69.7 percent, and 69.7 percent, respectively, as measured using market values).

Q. Why does financial risk depend on a company's market value capital structure rather than on its book value capital structure?

A. Financial risk depends on a company's market value capital structure because financial risk reflects the variability in the market price of the company's stock, and the variability in stock prices depends on the company's market value capital structure ratio, not its book value ratio.

Q. Do you agree with Mr. King's decision to eliminate Dominion, Duke, Great Plains, Otter Tail, Pepco Holdings, and WPS Resources because they have less than 60 percent revenue from regulated utility services?

A. No. As shown below, the average Standard & Poor's bond rating for these companies is BBB+, and the average Value Line Safety Rank for these companies is 2. (See Table 5.) These data indicate that these companies have the same risk as Mr. King's proxy group.

TABLE 5
VALUE LINE SAFETY RANK AND S&P BOND RATINGS FOR COMPANIES MR. KING ELIMINATED FROM HIS PROXY GROUP COMPARED TO AVERAGE VALUE LINE SAFETY RANK AND S&P BOND RATING FOR MR. KING'S PROXY GROUP

Company	*Safety Rank*	*S&P Bond Rating*	*S&P Bond Rating (numerical)*
Dominion	2	BBB	7
Duke	2	BBB	7
Great Plains	2	BBB	7
Otter Tail	2	BBB+	6
Pepco Holdings	3	BBB	7
WPS Resources	2	A	4
Average-Eliminated Companies	2	BBB+	6
Average-Mr. King's Final Proxy Group	2	BBB+	6

Q. Do you have any evidence that the large proxy group of 34 companies you used in your direct testimony is similar in risk to Mr. King's smaller proxy group of companies?

A. Yes. As shown in Schedule JVW-1 of my direct testimony, my proxy group of 34 electric companies has an average Value Line Safety Rank of 2 and an average S&P bond rating of BBB+. Mr. King's smaller group of electric companies also has an average

Value Line Safety Rank of 2 and an average S&P bond rating of BBB+. (See Table 5 above.)

Q. Given that your proxy group and Mr. King's smaller proxy group are similar in risk, is there any reason why the Commission should rely on the results of studies based on your larger proxy group rather than on the results of studies based on Mr. King's smaller proxy group?

A. Yes. As I discussed above and in my direct testimony, the cost of equity for a single company or even a small group of companies can only be estimated with uncertainty. However, the uncertainty in the cost of equity results for a small group of companies can be reduced by estimating the cost of equity for the largest possible group of risk proxy companies. Thus, the results of my application of the DCF model to a group of 34 companies in my direct testimony and to a group of 32 companies in my rebuttal testimony are more reliable than Mr. King's application of the DCF model to a group of 24 companies.

Q. What companies currently meet your criteria for inclusion in a risk proxy group?

A. The companies that currently meet my criteria for inclusion in a risk proxy group are shown in Vander Weide Rebuttal Schedule JVW-2.

Q. What DCF result do you obtain for this proxy group using the latest available data?

A. As noted above, I obtain a DCF result of 11.75 percent for this proxy group. As also noted above, if the two highest and two lowest results are eliminated from the group, the average DCF result is 10.78 percent.

Q. Do you have any evidence that the companies that currently meet your risk proxy criteria are good proxies for the risk of investing in AmerenUE?

A. Yes. As also shown in Rebuttal Schedule JVW-2, for these companies the average S&P bond rating is BBB+ and the Value Line Safety Rank is 2. AmerenUE has an S&P bond rating of BBB and a Value Line Safety Rank of 1.

B. DCF Models

Q. What DCF model did Mr. King use to estimate AmerenUE's cost of equity?

A. Mr. King used an annual DCF model of the form $k = D_1/P_0 + g$, where k is the cost of equity, D_1 is the expected next period dividend per share, P_0 is the current stock price, and g is the investors' expected growth.

Q. Do you agree with Mr. King's use of an annual DCF model to estimate AmerenUE's cost of equity?

A. No. Since all of Mr. King's companies pay dividends quarterly, he should have used a quarterly DCF model to estimate AmerenUE's cost of equity.

Q. Recognizing your disagreement with the annual DCF model, did Mr. King apply his annual DCF model correctly?

A. No. As noted previously in my rebuttal testimony, Mr. King's annual DCF model is based on the assumption that dividends are paid annually, and the first dividend is paid at the end of the first year. Under these assumptions, the cost of equity is given by the equation:

Equation 1

$$k = D_0(1+g) \div P_0 + g$$

Rather than multiplying the first dividend, D_0, by the factor (1 + g), Mr. King inappropriately used Value Line's estimate of each company's 2007 dividend as the estimate of the first dividend in his annual DCF model. For Mr. King's proxy companies, this procedure caused Mr. King to underestimate the DCF cost of equity by approximately 10 basis points.

Q. How does Mr. King estimate the growth component of his DCF model?

A. Mr. King uses the average of analysts' growth rates from Value Line and I/B/E/S to estimate the growth component in his DCF model. The Value Line average growth forecast was 5.7 percent, and the I/B/E/S average growth forecast was 6.3 percent.

Q. Do you agree with Mr. King's view that it is better to use both Value Line and I/B/E/S growth estimates to estimate the growth component of the DCF model?

A. No. The I/B/E/S growth forecasts are generally considered to be superior to the Value Line forecasts because the I/B/E/S forecasts are based on normalized current earnings, whereas the Value Line forecasts use a three-year period as the base, currently 2003 – 2005, and this period has already passed. In this case, Mr. King's use of both Value Line and I/B/E/S growth forecasts reduced his average growth estimate for his proxy companies by 30 basis points, lowering his DCF result by 30 basis points.

Q. On page 15 of his testimony, Mr. King states that the FCC has determined that "the classic formulation of the DCF model is the most reliable basis for estimating returns to equity." Do you agree with Mr. King's assertion?

A. No. Mr. King's assertion is based on an FCC decision in CC Docket 84-800, Phase II, that was decided in 1986. In a more recent case heard before the FCC's Wireline Competition Bureau, the bureau relied on the CAPM to estimate the cost of equity. The

FCC's Wireline Competition Bureau also used a market value capital structure to arrive at an overall rate of return equal to 13.068 percent.

Q. Mr. King also notes that the Surface Transportation Board uses the DCF method each year to determine revenue requirements for the country's Class I railroads. What is the Surface Transportation Board's most recent estimate of the cost of equity for the railroads using the DCF model?

A. The Surface Transportation Board's most recent estimate of the cost of equity for the railroads using the DCF model, found in September 2006, is 15.18 percent.

Q. What capital structure does the Surface Transportation Board use to estimate the railroad companies' revenue requirements?

A. The Surface Transportation Board uses a market-value weighted capital structure to estimate the railroad companies' revenue requirements. Based on a market-value capital structure containing 30.41 percent debt and 69.59 percent equity, the Board most recently calculated an after-tax weighted average cost of capital of 12.2 percent for the railroads. [STB Ex Parte No. 558 (Sub-No. 9), September 15, 2006.]

Q. Mr. King discusses his application of a DCF model in which he assigns two-thirds weight to the analysts' growth estimate and one-third weight to a GDP growth forecast. Mr. King refers to this method as the FERC method for gas pipeline companies. Has Mr. King correctly described and implemented the FERC method for estimating the cost of equity for gas pipeline companies?

A. No. Mr. King's implementation differs from the FERC method in at least three significant ways. First, Mr. King simply uses Value Line's estimated 2007 dividend as the dividend component for his DCF model, whereas the FERC multiplies the current

annualized dividend yield by the factor $(1 + .5\,g)$. Second, Mr. King assigns two-thirds weighting to an average of the Value Line and I/B/E/S growth forecasts, whereas the FERC assigns two-thirds weighting to the I/B/E/S growth forecast; the FERC does not use the Value Line growth forecast. Third, Mr. King assigns one-third weight to a GDP growth forecast which he determines using data from the Congressional Budget Office's estimate for the period 2010 to 2015; but the FERC's GDP growth forecast is an average of GDP growth forecasts from the Energy Information Administration, Global Insight (formerly DRI-WEFA), and the Social Security Administration for a periods of approximately 25 and 50 years.

C. CAPM

Q. How did Mr. King apply the CAPM to estimate AmerenUE's cost of equity?

A. As noted above, the CAPM requires estimates of the risk-free rate, the company-specific risk factor or beta, and the risk premium on the market portfolio. Mr. King used the average yield to maturity on 30-year U.S. Treasury bonds as his estimate of the risk-free rate (4.58 percent as of December 1, 2006); the average of Thomson Financial and Value Line betas for each of his proxy companies as his estimate of company-specific risk (0.75); and for the market risk premium, Mr. King applies what he terms a "DCF approach" to the Value Line universe of companies to obtain an expected return on the market of 10.48 percent; he then subtracts his estimate of the yield on long-term Treasury bonds (4.58 percent) to obtain his market risk premium of 5.9 percent.

Q. Do you agree with Mr. King's estimate of the risk-free rate component of the CAPM?

A. No. First, the average yield to maturity on 20-year U.S. Treasury bonds in November 2006 was 4.78 percent, and the yield on these bonds in early December was approximately 4.8 percent. I believe it is better to use the yield to maturity on 20-year Treasury bonds to estimate the risk-free rate because 20-year Treasury bonds are used in the Ibbotson Associates studies to estimate the risk premium on the market portfolio. Furthermore, the forecasted yield to maturity on long-term U.S. Treasury bonds is 4.9 percent (Blue Chip December 1, 2006). Thus, Mr. King should have used a yield to maturity on long-term Treasury bonds closer to 4.9 percent rather than the 4.58 percent he employed.

Q. Do you agree with Mr. King's estimate of the beta component of the CAPM?

A. No. I disagree with Mr. King's use of the Thomson Financial betas because Thomson Financial betas are not adjusted for the well-recognized tendency of betas to move in the direction of the overall market beta of 1.0.

Q. What is the average Value Line beta for Mr. King's proxy companies?

A. The average Value Line beta for Mr. King's proxy companies is 0.89.

Q. You noted earlier that Mr. King estimates the expected return on the market portfolio by applying the "DCF approach" to the Value Line universe. Did Mr. King, in fact, obtain his expected return on the market using a DCF approach?

A. No. Mr. King obtained his market expected return by adding the median dividend yield for the Value Line universe to Value Line's projected geometric mean three- to five-year capital appreciation for the Value Line universe.

Q. How does Value Line calculate its projected three- to five-year capital appreciation for the Value Line universe of companies?

A. Value Line calculates its projected three- to five-year capital appreciation expectation by: (1) applying a normalized P/E ratio to projected three- to five-year earnings per share to determine a forecasted price; and (2) subtracting the current price from the forecasted price to determine a capital gain.

Q. Is Mr. King's procedure of adding the median dividend yield for the Value Line universe to the geometric mean estimate of market appreciation for the universe a legitimate "DCF approach"?

A. No. The DCF approach calculates an expected future long-run return by adding the expected next period dividend yield to the expected long-run growth in earnings or dividends per share for each company; the analyst then averages the results for the companies in the universe. Furthermore, the DCF approach can only be applied to companies that pay dividends because the DCF model implies that the price would be zero for companies that do not pay dividends.

Q. How does Mr. King's so-called "DCF approach" differ from the correct DCF approach that you have just described?

A. Mr. King's "DCF approach" differs from the correct DCF approach in three ways. First, Mr. King fails to account for the first period growth in dividends per share. Second, Mr. King incorrectly applies his approach to companies that do not pay dividends. Third, Mr. King incorrectly estimates long-term expected growth by multiplying Value Line's estimate of three- to five-year projected earnings per share by Value Line's estimate of a "normalized" P/E ratio and subtracting the current price. This procedure produces an unreliable estimate of investors' growth expectations because there is no evidence that investors use Value Line's "normalized" P/E ratio to estimate future long-term growth.

Q. Have you applied the DCF approach to the Value Line companies using Value Line's projected earnings per share growth rate for each company?

A. Yes. I applied a DCF model to each company in the Value Line universe which had a reported stock price, paid dividends, and available Value Line earnings per share growth rates. This calculation produced a result of 13.1 percent, not the 10.48 percent estimate that Mr. King's procedure produces.

Q. What market risk premium is implied by Mr. King's 10.48 percent estimate of the expected return on the Value Line composite?

A. Mr. King's 10.48 percent estimate of the geometric mean expected return on the Value Line composite, along with his 4.58 percent estimate of the risk-free rate, implies an overall market risk premium of 5.9 percent (10.48 percent minus 4.58 percent equals 5.9 percent.)

Q. How does Mr. King's 5.9 percent estimate of the risk premium on the market portfolio compare to Ibbotson Associates' estimate of the risk premium on the market portfolio?

A. Mr. King's 5.9 percent estimate of the risk premium on the market portfolio is 120 basis points less than the Ibbotson Associates 7.1 percent estimate of the market risk premium.

Q. What CAPM result would Mr. King have obtained if he had applied the CAPM correctly to his proxy group of companies?

A. Mr. King would have obtained a CAPM cost of equity of 11.22 percent [4.9 percent Treasury bond yield + (0.89 proxy company beta x 7.1 market risk premium) = 11.22 percent cost of equity].

D. Capital Structure

Q. What is AmerenUE's recommended capital structure in this proceeding?

A. AmerenUE's recommended capital structure contains 45.42 percent long-term debt, 2.04 percent preferred equity, and 52.441 percent common equity.

Q. Does Mr. King agree with AmerenUE's recommended capital structure?

A. No. Mr. King claims that AmerenUE's recommended capital structure is based on the incorrect assumption that the equity component of its capital structure is held by the shareholders of Ameren Corporation, AmerenUE's parent. [King Direct at 4—5.]

Q. Does AmerenUE's recommended capital structure reflect the implicit assumption that the equity component is held by the shareholders of AmerenUE's parent?

A. No. AmerenUE's recommended capital structure reflects the fact that the equity component satisfies the accounting definition of equity.

Q. What is the accounting definition of equity?

A. Equity is defined as the "residual interest in the assets of an entity that remains after deducting liabilities. In a business enterprise, the equity is the ownership interest."[9]

Q. Do you agree with Mr. King's claim that there "is extensive precedent for double leverage adjustments in telephone company regulation"? [King Direct at 5.]

A. No. Although double leverage was applied in some independent telephone cases in the early 1980s (the time period of the telephone company cases cited by Mr. King), it was also rejected in numerous other telecommunications companies cases both in the early 1980s and since that time. In its most recent decision in a telecommunications company case, the FCC's Wireline Competition Bureau found the correct capital structure to be a market value capital structure containing 80 percent equity.

Q. Are you aware of any recent cases in the electric utility industry that have ruled on the issue of double leverage?

A. Yes. The Washington Utilities and Transportation Commission ruled against Mr. Hill's recommended double leverage adjustment in 2006 in a PacifiCorp case, Docket Nos. UE-050684 and UE-050412.

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[9] Donald E. Kieso, Jerry J. Weygandt, and Terry D. Warfield, *Intermediate Accounting*, John Wiley & Sons, Inc., 2001, P. 40.

VI. REBUTTAL OF MS. LACONTE

Q. What rate of return issues does Ms. LaConte discuss in her direct testimony?

A. Ms. LaConte discusses: (1) my financial risk adjustment; and (2) my analysis of AmerenUE's business risk relative to the business risk of my proxy group. She concludes that my financial risk adjustment should be rejected and that my recommended cost of equity should be reduced to reflect her opinion that AmerenUE has lower business risk than my proxy group of companies.

Q. What is the purpose of your recommended financial risk adjustment?

A. My recommended financial risk adjustment is designed to adjust the estimated cost of equity for my proxy group of companies to account for the difference in the financial risk reflected in my cost of equity estimate and the financial risk implied by AmerenUE's recommended capital structure in this proceeding. Thus, my recommended financial risk adjustment is required to produce a cost of equity that appropriately reflects the financial risk in AmerenUE's recommended capital structure.

Q. How do you measure the financial risk reflected in your cost of equity estimate for your proxy companies?

A. I measure the financial risk reflected in my cost of equity estimate for my proxy companies by the composite market value capital structure of my proxy companies.

Q. Why did you use the composite market value capital structure of your proxy companies to measure the financial risk reflected in your estimate of the proxy companies' cost of equity?

A. I use the composite market value capital structure to measure the financial risk reflected in my proxy companies' cost of equity because investors measure risk by the variance of their return in the marketplace, and the variance of return in the marketplace depends on the market value capital structure. The higher the percentage of equity in the market value capital structure, the lower is the financial risk of the investment, because the investment will exhibit lower variability in the return to the investor. This lower variability in return to the investor will be reflected in a lower cost of equity capital for the proxy companies.

Q. What are Ms. LaConte's main concerns with your recommended financial risk adjustment?

A. Ms. LaConte has several concerns with my financial risk adjustment. First, she argues that my financial risk adjustment "can lead to an illogical conclusion that higher returns on equity require even higher returns on equity and vice versa." [LaConte at 5.] Second, she argues that my financial risk adjustment would oblige the Commission to support a particular market value for the company's stock, and, in her opinion, the Commission is under no obligation "to support any particular market value." [LaConte Direct at 5.]

Q. Why does Ms. LaConte believe that your financial risk adjustment would lead to the illogical conclusion that higher returns on equity would lead to "even higher returns on equity"?

A. Ms. LaConte argues that the market price of a company's stock will increase whenever the Commission allows a higher return on equity; and, under my financial risk adjustment, an increase in the company's stock price will produce an even higher required return on equity.

Q. Does Ms. LaConte's argument make sense?

A. No. Ms. LaConte misunderstands my financial risk adjustment. Her argument suggests that my financial risk adjustment depends on the market price of AmerenUE's stock, when AmerenUE does not have publicly-traded stock. Contrary to Ms. LaConte's argument, my financial risk adjustment depends on the average market value capital structure of my proxy companies. The percentage of equity in the market value capital structure of my proxy companies would not increase if the Commission were to allow AmerenUE a higher allowed rate of return because the market value capital structure for the proxy companies does not depend on AmerenUE's allowed rate of return on equity. Thus, my financial risk adjustment does not lead to any connection between current allowed returns on equity and future allowed returns on equity.

Q. Ms. LaConte argues that AmerenUE's rates will increase as a result of your financial risk adjustment. Is her argument correct?

A. No. Ms. LaConte fails to recognize that utility rates depend on the estimated cost of equity for the proxy companies, and the estimated cost of equity for the proxy companies is lower as a result of the greater percentage of equity in their market value capital

structure. Taken by itself, this lowering of the cost of equity for the proxy companies arising from their greater percentage of equity would reduce AmerenUE's rates. My financial risk adjustment is required to bring the cost of equity back to the level it would have been if the proxy companies did not have less financial risk.

Q. Do you agree with Ms. LaConte's argument that your financial risk adjustment would oblige the Commission "to support" a "particular market value" for the Company's stock?"

A. No. My financial risk adjustment does not oblige the Commission to support a particular market value for the Company's stock because AmerenUE does not have publicly-traded stock. My financial risk adjustment only obliges the Commission to recognize that my cost of equity estimate is based on investors' assessment of the financial risks of investing in my proxy companies, as measured by the market value capital structure for the group; and the financial risk of investing in my proxy companies is less than the financial risk of AmerenUE's recommended capital structure.

Q. Ms. LaConte also concludes that your recommended cost of equity should be reduced to reflect her opinion that AmerenUE has lower business risk than your proxy companies. Why does Ms. LaConte believe that AmerenUE has lower business risk than your proxy group of companies?

A. Ms. LaConte's opinion is based on her assessment of the business risk factors I discussed on page 13 of my direct testimony.

Q. Did you increase your recommended cost of equity to account for any of the risk factors mentioned on page 13 of your direct testimony?

A. No. My discussion on page 13 was meant to provide general background information on the business risks of electric utilities such as AmerenUE. I did not attempt to quantify the impact of these risks on AmerenUE's cost of equity, and I certainly did not recommend that AmerenUE's cost of equity be increased to reflect any of these business risk factors.

Q. Do you agree with Ms. LaConte's conclusion that AmerenUE has lower business risk than your proxy companies?

A. No. Ms. LaConte's conclusion is contrary to Standard & Poor's conclusion that AmerenUE's business risk as reflected in their bond ratings is similar to the average business risk of my proxy companies. As noted in my direct testimony, my proxy electric companies have an S&P bond rating of BBB+, my proxy natural gas companies have an S&P bond rating of A-, and AmerenUE has an S&P bond rating of BBB.

Q. Does this conclude your testimony?

A. Yes, it does.

LIST OF ATTACHMENTS

Rebuttal Schedule JVW-1	Average Allowed Returns on Equity for Midwestern Utilities in 2006
Rebuttal Schedule JVW-2	Summary of Discounted Cash Flow Analysis for Updated Comparable Electric Company Group
Rebuttal Schedule JVW-3	Average I/B/E/S Growth Forecasts for Woolridge Proxy Electric Companies
Rebuttal Schedule JVW-4	Updated Summary of Discounted Cash Flow Analysis for Woolridge Proxy Electric Company Group
Rebuttal Schedule JVW-5	Value Line Companies with Market-to-Book Ratios >1.0 and Negative Earned Returns on Equity
Rebuttal Schedule JVW-6	Value Line Companies with Market-to-Book Ratios >1.0 and Earned Returns on Equity in the Range 0 Percent to 9 Percent

REBUTTAL SCHEDULE JVW-1
AVERAGE ALLOWED RETURNS ON EQUITY
FOR MIDWESTERN UTILITIES IN 2006

Date	*Company*	*State*	*ROE*
5-Jan-06	Northern States Power	Wisconsin	11.00
5-Jan-06	Northern States Power	Wisconsin	11.00
25-Jan-06	Wisconsin Electric Power	Wisconsin	11.20
25-Jan-06	Wisconsin Gas	Wisconsin	11.20
1-Mar-06	Aquila	Iowa	10.40
3-Mar-06	Interstate Power and Light	Minnesota	10.39
18-Apr-06	MidAmerican Energy	Iowa	11.90
25-May-06	LA Gas Service/Trans LA Gas	Louisiana	10.40
27-Jun-06	Upper Peninsula Power	Michigan	10.75
28-Jul-06	Commonwealth Edison	Illinois	10.05
1-Sep-06	Northern States Power	Minnesota	10.54
	Average		10.80

Data from Regulatory Research Associates, October 5, 2006

REBUTTAL SCHEDULE JVW-2
SUMMARY OF DISCOUNTED CASH FLOW ANALYSIS
FOR UPDATED COMPARABLE ELECTRIC ENERGY COMPANY GROUP
JANUARY 2007

Line No.	Company	d_4	P_0	Growth	Cost of Equity
1	Amer. Elec. Power	0.390	40.945	3.98%	7.90%
2	Ameren Corp.	0.635	53.970	3.75%	8.79%
3	Consol. Edison	0.575	47.963	3.01%	8.10%
4	Constellation Energy	0.378	65.180	12.50%	15.09%
5	Dominion Resources	0.690	81.117	12.60%	16.66%
6	Duke Energy	0.320	18.466	6.33%	10.72%
7	Edison Int'l	0.270	44.898	8.00%	10.70%
8	Entergy Corp.	0.540	87.570	9.40%	12.22%
9	Exelon Corp.	0.400	61.212	10.69%	13.73%
10	FirstEnergy Corp.	0.450	59.267	6.75%	10.11%
11	FPL Group	0.375	51.510	8.34%	11.63%
12	G't Plains Energy	0.415	31.932	2.15%	7.61%
13	Hawaiian Elec.	0.310	27.410	3.38%	8.20%
14	IDACORP Inc.	0.300	39.045	4.67%	7.98%
15	MDU Resources	0.135	25.433	8.44%	10.76%
16	NiSource Inc.	0.230	24.117	3.33%	7.38%
17	Northeast Utilities	0.188	26.314	11.40%	14.63%
18	NSTAR	0.303	34.792	6.33%	10.17%
19	Otter Tail Corp.	0.288	30.410	5.40%	9.54%
20	Pepco Holdings	0.260	25.595	6.33%	10.82%
21	Pinnacle West Capital	0.525	48.405	5.00%	9.54%
22	PNM Resources	0.220	29.583	11.93%	15.36%
23	PPL Corp.	0.275	35.070	10.67%	14.32%
24	Progress Energy	0.605	47.012	3.47%	8.97%
25	Public Serv. Enterprise	0.570	63.853	4.67%	8.52%
26	Puget Energy Inc.	0.250	24.310	4.83%	9.29%
27	SCANA Corp.	0.420	41.015	4.42%	8.84%
28	Sempra Energy	0.300	53.871	5.52%	7.92%
29	Southern Co.	0.388	36.132	5.00%	9.62%
30	TXU Corp.	0.435	59.485	17.20%	20.74%
31	Wisconsin Energy	0.230	46.293	7.79%	10.01%
32	Xcel Energy Inc.	0.223	22.308	6.00%	10.32%
33	Average				11.75%

REBUTTAL SCHEDULE JVW-2 (CONTINUED)
SUMMARY OF DISCOUNTED CASH FLOW ANALYSIS
FOR UPDATED COMPARABLE ELECTRIC ENERGY COMPANY GROUP
EXCLUDING 2 HIGHEST AND 2 LOWEST RESULTS
FOLLOWING COMMISSION'S BENCH REQUEST IN ER-2006-0315

Line No.	Company	d_4	P_0	Growth	Cost of Equity
1	Amer. Elec. Power	0.390	40.945	3.98%	7.9%
2	Ameren Corp.	0.635	53.970	3.75%	8.8%
3	Consol. Edison	0.575	47.963	3.01%	8.1%
4	Constellation Energy	0.378	65.180	12.50%	15.1%
5	Duke Energy	0.320	18.466	6.33%	14.0%
6	Edison Int'l	0.270	44.898	8.00%	10.7%
7	Entergy Corp.	0.540	87.570	9.40%	12.2%
8	Exelon Corp.	0.400	61.212	10.69%	13.7%
9	FirstEnergy Corp.	0.450	59.267	6.75%	10.1%
10	FPL Group	0.375	51.510	8.34%	11.6%
11	Hawaiian Elec.	0.310	27.410	3.38%	8.2%
12	IDACORP Inc.	0.300	39.045	4.67%	8.0%
13	MDU Resources	0.135	25.433	8.44%	10.8%
14	Northeast Utilities	0.188	26.314	11.40%	14.6%
15	NSTAR	0.303	34.792	6.33%	10.2%
16	Otter Tail Corp.	0.288	30.410	5.40%	9.5%
17	Pepco Holdings	0.260	25.595	6.33%	10.8%
18	Pinnacle West Capital	0.525	48.405	5.00%	9.5%
19	PNM Resources	0.220	29.583	11.93%	15.4%
20	PPL Corp.	0.275	35.070	10.67%	14.3%
21	Progress Energy	0.605	47.012	3.47%	9.0%
22	Public Serv. Enterprise	0.570	63.853	4.67%	8.5%
23	Puget Energy Inc.	0.250	24.310	4.83%	9.3%
24	SCANA Corp.	0.420	41.015	4.42%	8.8%
25	Sempra Energy	0.300	53.871	5.52%	7.9%
26	Southern Co.	0.388	36.132	5.00%	9.6%
27	Wisconsin Energy	0.230	46.293	7.79%	10.0%
28	Xcel Energy Inc.	0.223	22.308	6.00%	10.3%
29	Average				10.8%

Notes:

d_0	=	Most recent quarterly dividend.
d_1,d_2,d_3,d_4	=	Next four quarterly dividends, calculated by multiplying the last four quarterly dividends per Value Line by the factor (1 + g).
P_0	=	Average of the monthly high and low stock prices during the three months ending December 2006 from Thomson Financial.
g	=	I/B/E/S forecast of future earnings growth December 2006 from Thomson financial.
k	=	Cost of equity using the quarterly version of the DCF model.

$$k = \frac{d_1(1+k)^{.75} + d_2(1+k)^{.50} + d_3(1+k)^{.25} + d_4}{P_0} + g$$

REBUTTAL SCHEDULE JVW-2 (CONTINUED)
RISK RATINGS
OF UPDATED COMPARABLE ELECTRIC ENERGY COMPANIES

Line No.	Company	Safety Rank	S&P BOND RATING	S&P BOND RATING (Numerical)	Beta
1	Amer. Elec. Power	3	BBB	7	1.35
2	Ameren Corp.	1	BBB	7	0.75
3	Consol. Edison	1	A	4	0.75
4	Constellation Energy	2	A	4	0.95
5	Dominion Resources	2	BBB	7	1.00
6	Duke Energy	2	BBB	7	1.30
7	Edison Int'l	3	BBB-	8	1.05
8	Entergy Corp.	2	BBB	7	0.85
9	Exelon Corp.	1	BBB	7	0.90
10	FirstEnergy Corp.	2	BBB	7	0.80
11	FPL Group	1	BBB+	6	0.85
12	G't Plains Energy	2	BBB	7	0.95
13	Hawaiian Elec.	2	BBB	7	0.75
14	IDACORP Inc.	3	BBB+	6	1.05
15	MDU Resources	1	BBB+	6	1.00
16	NiSource Inc.	3	BBB	7	0.95
17	Northeast Utilities	3	BBB	7	0.90
18	NSTAR	1	A+	3	0.80
19	Otter Tail Corp.	2	BBB+	6	0.65
20	Pepco Holdings	3	BBB	7	0.90
21	Pinnacle West Capital	1	BBB-	8	1.00
22	PNM Resources	2	BBB	7	1.00
23	PPL Corp.	2	BBB	7	0.95
24	Progress Energy	2	BBB	7	0.90
25	Public Serv. Enterprise	3	BBB+	6	1.00
26	Puget Energy Inc.	3	BBB-	8	0.85
27	SCANA Corp.	2	A-	5	0.85
26	Sempra Energy	2	BBB+	6	1.10
27	Southern Co.	1	A	4	0.70
28	TXU Corp.	3	BBB-	8	1.15
29	Wisconsin Energy	2	BBB+	6	0.80
30	Xcel Energy Inc.	2	BBB	7	0.90
31	Average	1.9	BBB+	6.5	0.97

Source of data: Standard & Poor's, December 28, 2006; Value Line Investment Analyzer January 7, 2007.

REBUTTAL SCHEDULE JVW-3
I/B/E/S GROWTH FORECASTS
FOR WOOLRIDGE ELECTRIC COMPANY GROUP
JANUARY 2007

Line No.	Company	Growth
1	Alliant Energy	5.00%
2	Amer. Elec. Power	3.98%
3	Ameren Corp.	3.75%
4	Consol. Edison	3.01%
5	Dominion Resources	12.60%
6	DTE	4.50%
7	Duke Energy	6.33%
8	Empire	6.00%
9	Energy East	4.50%
10	Entergy Corp.	9.40%
11	FirstEnergy Corp.	6.75%
12	G't Plains Energy	2.15%
13	Hawaiian Elec.	3.38%
14	IDACORP Inc.	4.67%
15	MDU Resources	8.44%
16	NiSource Inc.	3.33%
17	Northeast Utilities	11.40%
18	NSTAR	6.33%
19	OGE Energy	9.33%
20	Otter Tail Corp.	5.40%
21	Pepco Holdings	6.33%
22	Pinnacle West Capital	5.00%
23	PNM Resources	11.93%
24	PPL Corp.	10.67%
25	Progress Energy	3.47%
26	Puget Energy Inc.	4.83%
27	SCANA Corp.	4.42%
28	Sempra Energy	5.52%
29	Southern Co.	5.00%
30	TXU Corp.	17.20%
31	Vectren	3.50%
32	Wisconsin Energy	7.79%
33	WPS Resources	4.50%
34	Xcel Energy Inc.	6.00%
35	Market-wtd. Average	7.42%
36	Simple Average	6.37%

I/B/E/S data from Thomson Financial as of January 7, 2007

REBUTTAL SCHEDULE JVW-4
UPDATED SUMMARY OF DISCOUNTED CASH FLOW ANALYSIS
FOR WOOLRIDGE ELECTRIC COMPANY GROUP
JANUARY 2007

Line No.	Company	d4	P_0	Growth	Cost of Equity	No. of I/B/E/S Estimates
1	Alliant Energy	0.288	38.367	5.00%	8.24%	1
2	Amer. Elec. Power	0.390	40.945	3.98%	7.90%	5
3	Ameren Corp.	0.635	53.970	3.75%	8.79%	4
4	Consol. Edison	0.575	47.963	3.01%	8.10%	6
5	Dominion Resources	0.690	81.117	12.60%	16.66%	5
6	DTE	0.515	46.060	4.50%	9.33%	2
7	Duke Energy	0.320	18.466	6.33%	10.72%	3
8	Empire	0.320	23.805	6.00%	11.95%	1
9	Energy East	0.300	24.477	4.50%	9.67%	2
10	Entergy Corp.	0.540	87.570	9.40%	12.22%	5
11	FirstEnergy Corp.	0.450	59.267	6.75%	10.11%	4
12	G't Plains Energy	0.415	31.932	2.15%	7.61%	4
13	Hawaiian Elec.	0.310	27.410	3.38%	8.20%	4
14	IDACORP Inc.	0.300	39.045	4.67%	7.98%	3
15	MDU Resources	0.135	25.433	8.44%	10.76%	5
16	NiSource Inc.	0.230	24.117	3.33%	7.38%	6
17	Northeast Utilities	0.188	26.314	11.40%	14.63%	5
18	NSTAR	0.303	34.792	6.33%	10.17%	3
19	OGE Energy	0.333	38.785	9.33%	13.27%	1
20	Otter Tail Corp.	0.288	30.410	5.40%	9.53%	4
21	Pepco Holdings	0.260	25.595	6.33%	10.82%	3
22	Pinnacle West Capital	0.525	48.405	5.00%	9.54%	3
23	PNM Resources	0.220	29.583	11.93%	15.36%	3
24	PPL Corp.	0.275	35.070	10.67%	14.32%	6
25	Progress Energy	0.605	47.012	3.47%	8.97%	6
26	Puget Energy Inc.	0.250	24.310	4.83%	9.29%	3
27	SCANA Corp.	0.420	41.015	4.42%	8.84%	5
28	Sempra Energy	0.300	53.871	5.52%	7.92%	4
29	Southern Co.	0.388	36.132	5.00%	9.62%	8
30	TXU Corp.	0.435	59.485	17.20%	20.74%	5
31	Vectren	0.315	28.322	3.50%	8.13%	2
32	Wisconsin Energy	0.230	46.293	7.79%	10.01%	6
33	WPS Resources	0.575	52.480	4.50%	9.19%	2
34	Xcel Energy Inc.	0.223	22.308	6.00%	10.32%	4
35	Average				11.44%	

REBUTTAL SCHEDULE JVW-4 (CONTINUED)
SUMMARY OF DISCOUNTED CASH FLOW ANALYSIS
FOR UPDATED WOOLRIDGE ELECTRIC ENERGY COMPANY GROUP
EXCLUDING 2 HIGHEST AND 2 LOWEST RESULTS
FOLLOWING COMMISSION'S BENCH REQUEST IN ER-2006-0315

Line No.	Company	d_4	P_0	Growth	Cost of Equity	No. of I/B/E/S Estimates
1	Alliant Energy	0.288	38.367	5.00%	8.2%	1
1	Amer. Elec. Power	0.390	40.945	3.98%	7.9%	5
2	Ameren Corp.	0.635	53.970	3.75%	8.8%	4
3	Consol. Edison	0.575	47.963	3.01%	8.1%	6
4	DTE	0.515	46.060	4.50%	9.3%	2
5	Duke Energy	0.320	18.466	6.33%	10.7%	3
6	Empire	0.320	23.805	6.00%	11.9%	1
7	Energy East	0.300	24.477	4.50%	9.7%	2
8	Entergy Corp.	0.540	87.570	9.40%	12.2%	5
9	FirstEnergy Corp.	0.450	59.267	6.75%	10.1%	4
10	Hawaiian Elec.	0.310	27.410	3.38%	8.2%	4
11	IDACORP Inc.	0.300	39.045	4.67%	8.0%	3
12	MDU Resources	0.135	25.433	8.44%	10.8%	5
13	Northeast Utilities	0.188	26.314	11.40%	14.6%	5
14	NSTAR	0.303	34.792	6.33%	10.2%	3
15	OGE Energy	0.333	38.785	9.33%	13.3%	1
16	Otter Tail Corp.	0.288	30.410	5.40%	9.5%	4
17	Pepco Holdings	0.260	25.595	6.33%	10.8%	3
18	Pinnacle West Capital	0.525	48.405	5.00%	9.5%	3
19	PNM Resources	0.220	29.583	11.93%	15.4%	3
20	PPL Corp.	0.275	35.070	10.67%	14.3%	6
21	Progress Energy	0.605	47.012	3.47%	9.0%	6
22	Puget Energy Inc.	0.250	24.310	4.83%	9.3%	3
23	SCANA Corp.	0.420	41.015	4.42%	8.8%	5
24	Sempra Energy	0.300	53.871	5.52%	7.9%	4
25	Southern Co.	0.388	36.132	5.00%	9.6%	8
26	Vectren	0.315	28.322	3.50%	8.1%	2
27	Wisconsin Energy	0.230	46.293	7.79%	10.0%	6
28	WPS Resources	0.575	52.480	4.50%	9.2%	2
29	Xcel Energy Inc.	0.223	22.308	6.00%	10.3%	4
30	Average				10.1%	

REBUTTAL SCHEDULE JVW-4 (CONTINUED)
SUMMARY OF DISCOUNTED CASH FLOW ANALYSIS
FOR UPDATED WOOLRIDGE ELECTRIC ENERGY COMPANY GROUP
EXCLUDING 2 HIGHEST AND 2 LOWEST RESULTS
FOLLOWING COMMISSION'S SUGGESTION IN ER-2006-0315

Notes:

d_0	=	Most recent quarterly dividend.
d_1,d_2,d_3,d_4	=	Next four quarterly dividends, calculated by multiplying the last four quarterly dividends per Value Line by the factor (1 + g).
P_0	=	Average of the monthly high and low stock prices during the three months ending December 2006 per Thomson Financial.
g	=	I/B/E/S forecast of future earnings growth December 2006 from Thomson Financial.
k	=	Cost of equity using the quarterly version of the DCF model.

$$k = \frac{d_1(1+k)^{.75} + d_2(1+k)^{.50} + d_3(1+k)^{.25} + d_4}{P_0} + g$$

REBUTTAL SCHEDULE JVW-4 (CONTINUED)
RISK RATINGS
OF WOOLRIDGE PROXY ELECTRIC COMPANIES

Line No.	Company	Safety Rank	S&P BOND RATING	S&P BOND RATING (Numerical)	Beta
1	Alliant Energy	3	BBB+	6	0.95
2	Amer. Elec. Power	3	BBB	7	1.35
3	Ameren Corp.	1	BBB	7	0.75
4	Consol. Edison	1	A	4	0.75
5	Dominion Resources	2	BBB	7	1.00
6	DTE	3	BBB	7	0.75
7	Duke Energy	2	BBB	7	1.30
8	Empire	3	BBB-	8	0.80
9	Energy East	2	BBB+	6	0.90
10	Entergy Corp.	2	BBB	7	0.85
11	FirstEnergy Corp.	2	BBB	7	0.80
12	G't Plains Energy	2	BBB	7	0.95
13	Hawaiian Elec.	2	BBB	7	0.75
14	IDACORP Inc.	3	BBB+	6	1.05
15	MDU Resources	1	BBB+	6	1.00
16	NiSource Inc.	3	BBB	7	0.95
17	Northeast Utilities	3	BBB	7	0.90
18	NSTAR	1	A+	3	0.80
19	OGE Energy	2	BBB+	6	0.75
20	Otter Tail Corp.	2	BBB+	6	0.65
21	Pepco Holdings	3	BBB	7	0.90
22	Pinnacle West Capital	1	BBB-	8	1.00
23	PNM Resources	2	BBB	7	1.00
24	PPL Corp.	2	BBB	7	0.95
25	Progress Energy	2	BBB	7	0.90
26	Puget Energy Inc.	3	BBB-	8	0.85
27	SCANA Corp.	2	A-	5	0.85
28	Sempra Energy	2	BBB+	6	1.10
29	Southern Co.	1	A	4	0.70
30	TXU Corp.	3	BBB-	8	1.15
31	Vectren	2	A-	5	0.90
32	Wisconsin Energy	2	BBB+	6	0.80
33	WPS Resources	2	A	4	0.85
34	Xcel Energy Inc.	2	BBB	7	0.90
36	Average	2.0	BBB+	6.5	0.97

Source of data: Standard & Poor's, December 28, 2006; The Value Line Investment Analyzer January 7, 2007.

REBUTTAL SCHEDULE JVW-5
VALUE LINE COMPANIES WITH MARKET-TO-BOOK RATIOS >1.0
AND NEGATIVE EARNED RETURNS ON BOOK EQUITY

Company Name	Ticker	Industry	Return on Common Equity	Stock Price	Book Value per share	Market to Book
3Com Corp.	COMS	COMPUTER	(7.74)	4.17	3.12	1.34
Active Power	ACPW	POWER	(42.30)	2.66	1.11	2.40
Adaptec Inc.	ADPT	COMPUTER	(1.04)	4.45	3.20	1.39
Alloy Inc.	ALOY	INTERNET	(27.19)	11.17	9.01	1.24
Alnylam Pharmac.	ALNY	BIOTECH	(69.46)	22.45	2.32	9.68
Amer. Superconductor	AMSC	POWER	(26.82)	10.91	3.50	3.12
Amer. Tower 'A'	AMT	WIRELESS	(1.05)	37.52	10.97	3.42
Amkor Technology	AMKR	SEMI-EQP	(45.11)	10.20	1.27	8.03
ANADIGICS Inc.	ANAD	SEMICOND	(53.72)	10.25	1.66	6.17
Applied Micro	AMCC	SEMICOND	(0.36)	3.63	3.17	1.15
Aquila Inc.	ILA	UTILCENT	(12.06)	4.69	3.51	1.34
Ariba Inc.	ARBA	B2B	(19.66)	7.53	4.59	1.64
Atmel Corp.	ATML	SEMICOND	(7.92)	5.46	1.95	2.80
Ballard Power Sys.	BLDP	POWER	(21.18)	6.85	4.19	1.63
BearingPoint	BE	SOFTWARE	(14.95)	8.31	3.13	2.65
Blockbuster Inc.	BBI	RETAILSP	(10.92)	5.47	2.58	2.12
Borland Software	BORL	SOFTWARE	(0.73)	5.43	4.99	1.09
Bowater Inc.	BOW	PAPER	(2.97)	22.63	21.74	1.04
Brooks Automation	BRKS	MACHINE	(2.11)	14.36	6.87	2.09
Calgon Carbon	CCC	ENVIRONM	(4.47)	5.86	3.80	1.54
Celera Genomics	CRA	BIOTECH	(8.63)	14.64	9.39	1.56
CEVA Inc.	CEVA	SEMICOND	(0.05)	6.61	5.40	1.22
Ciena Corp.	CIEN	TELEQUIP	(59.24)	25.30	8.87	2.85
Conexant Systems	CNXT	SEMICOND	(30.92)	2.23	1.20	1.86
Cont'l Airlines	CAL	AIRTRANS	(90.70)	41.87	2.62	15.98
Crown Castle Int'l	CCI	WIRELESS	(10.88)	33.98	5.50	6.18
CryoLife Inc.	CRY	MEDSUPPL	(24.23)	6.64	1.38	4.81
Cyberonics	CYBX	MEDSUPPL	(16.16)	25.14	3.05	8.24
Cypress Semic.	CY	SEMICOND	(2.16)	17.24	5.95	2.90
Domtar Inc.	DTC	PAPER	(5.48)	7.13	5.86	1.22
Dynegy Inc. 'A'	DYN	GASDIVRS	(47.06)	6.87	4.82	1.43
Echelon Corp.	ELON	WIRELESS	(10.87)	8.03	4.55	1.76
EMCORE Corp.	EMKR	SEMICOND	(29.47)	6.06	1.61	3.76
Energy Conversion	ENER	POWER	(3.52)	36.57	13.75	2.66
Enzo Biochem	ENZ	BIOTECH	(16.39)	15.66	2.96	5.29
Enzon Pharmac.	ENZN	DRUG	(1.28)	8.40	4.60	1.83
Everest Re Group Ltd.	RE	INSPRPTY	(6.25)	99.59	64.08	1.55
Evergreen Solar Inc.	ESLR	POWER	(19.80)	8.79	1.41	6.23
FEI Company	FEIC	INSTRMNT	(0.41)	24.95	8.65	2.88
Fleetwood Enterprises	FLE	HOMESRVS	(3.54)	8.18	2.68	3.05

Company Name	Ticker	Industry	Return on Common Equity	Stock Price	Book Value per share	Market to Book
FoxHollow Technologies	FOXH	MEDSUPPL	(13.86)	25.75	3.51	7.34
Friedman Billings	FBR	BROKERS	(13.10)	7.99	7.55	1.06
FSI Int'l	FSII	SEMI-EQP	(7.75)	5.57	3.10	1.80
FuelCell Energy	FCEL	POWER	(32.73)	6.40	4.74	1.35
Gaylord Entertainm.	GET	HOTELGAM	(3.12)	49.64	21.05	2.36
Gemstar-TV Guide	GMST	ENT TECH	(8.17)	3.22	0.88	3.66
Gen'l Motors	GM	AUTO	(23.40)	29.86	25.81	1.16
Genomic Health	GHDX	MEDSUPPL	(46.44)	22.93	2.76	8.31
G't Atlantic & Pacific	GAP	GROCERY	(12.69)	27.21	16.32	1.67
Hooper Holmes	HH	HLTHSYS	(74.95)	3.22	1.95	1.65
Human Genome	HGSI	BIOTECH	(57.42)	12.48	3.18	3.92
IDT Corp.	IDT	TELESERV	(27.73)	13.03	8.33	1.56
Illumina Inc.	ILMN	MEDSUPPL	(6.99)	38.95	1.76	22.13
Interpublic Group	IPG	ADVERT	(27.89)	12.33	2.43	5.07
JDS Uniphase	JDSU	ELECTRNX	(2.44)	18.35	7.51	2.44
JetBlue Airways	JBLU	AIRTRANS	(1.09)	13.72	5.28	2.60
Lattice Semiconductor	LSCC	SEMICOND	(5.46)	7.15	4.38	1.63
Learning Tree Int'l	LTRE	EDUC	(1.15)	9.16	3.66	2.50
Martha Stewart	MSO	HOUSEPRD	(29.69)	21.52	3.11	6.92
Medarex Inc.	MEDX	DRUG	(85.59)	14.23	1.44	9.88
Medis Technologies	MDTL	POWER	(28.37)	20.06	2.34	8.57
Mercury Computer Sys.	MRCY	COMPUTER	(5.66)	13.00	9.12	1.43
Millennium Pharmac.	MLNM	BIOTECH	(4.14)	11.47	6.76	1.70
Myriad Genetics	MYGN	BIOTECH	(15.28)	30.73	6.29	4.89
Nektar Therapeutics	NKTR	DRUG	(56.64)	17.36	3.86	4.50
NOVA Chemicals	NCX	CHEMICAL	(8.53)	29.64	14.67	2.02
Nuance Communic.	NUAN	SOFTWARE	(1.06)	10.92	3.26	3.35
On Assignment	ASGN	HUMAN	(0.13)	11.28	2.96	3.81
Osteotech Inc.	OSTE	MEDSUPPL	(29.84)	5.92	4.10	1.44
Pacific Ethanol	PEIX	POWER	(34.79)	18.68	0.99	18.87
PartnerRe Ltd.	PRE	INSPRPTY	(8.08)	69.94	54.15	1.29
Pathmark Stores	PTMK	GROCERY	(22.47)	10.94	3.29	3.33
PDL BioPharma	PDLI	DRUG	(6.91)	22.32	4.69	4.76
Pep Boys	PBY	RETAUTO	(4.58)	13.66	10.97	1.25
Photon Dynamics	PHTN	INSTRMNT	(12.50)	11.14	8.39	1.33
Pier 1 Imports	PIR	RETAILSP	(4.65)	6.90	6.78	1.02
Playboy Enterprises 'B'	PLA	PUBLISH	(0.46)	11.79	5.56	2.12
Power-One	PWER	ELECEQ	(9.27)	7.36	2.62	2.81
Quantum Corporation	QTM	COMPUTER	(8.13)	2.46	1.49	1.65
Regeneron Pharmac.	REGN	BIOTECH	(83.72)	21.60	2.02	10.69
Reliant Energy	RRI	POWER	(2.51)	14.15	12.65	1.12
Robbins & Myers	RBN	MACHINE	(0.08)	44.28	20.51	2.16
SBA Communications	SBAC	WIRELESS	(79.79)	28.43	0.95	29.93
SeaChange Int'l	SEAC	ENT TECH	(8.00)	8.50	5.41	1.57
Senomyx Inc.	SNMX	BIOTECH	(24.05)	13.35	2.78	4.80
Silicon Storage	SSTI	COMPUTER	(7.85)	4.67	3.69	1.27

Company Name	Ticker	Industry	Return on Common Equity	Stock Price	Book Value per share	Market to Book
Six Flags Inc.	SIX	RECREATE	(15.23)	5.40	4.36	1.24
Smurfit-Stone Cont.	SSCC	PACKAGE	(6.97)	10.83	7.04	1.54
Standard Motor Prod.	SMP	AUTO-OEM	(0.95)	14.12	10.22	1.38
Stillwater Mining	SWC	GOLDSILV	(2.81)	13.57	5.42	2.50
Sun Microsystems	SUNW	COMPUTER	(8.67)	5.54	1.81	3.06
Sycamore Networks	SCMR	TELEQUIP	(1.17)	3.96	3.40	1.16
Tenet Healthcare	THC	MEDSERV	(70.91)	7.00	2.17	3.23
Teradyne Inc.	TER	SEMI-EQP	(0.79)	15.11	6.31	2.39
Triarc Cos. 'A'	TRY	RESTRNT	(1.06)	21.12	6.57	3.21
TriQuint Semic.	TQNT	SEMICOND	(0.93)	4.93	3.19	1.55
TurboChef Technologies	OVEN	APPLIANC	(33.30)	14.82	2.23	6.65
UTStarcom Inc.	UTSI	TELEQUIP	(14.03)	8.89	7.69	1.16
ValueVision Media	VVTV	RETAILSP	(8.43)	13.37	4.31	3.10
Vertex Pharmac.	VRTX	BIOTECH	(61.48)	44.52	2.21	20.14
Vodafone Group ADR	VOD	TELESERV	(10.17)	27.30	24.69	1.11
XL Capital Ltd.	XL	INSPRPTY	(16.24)	70.80	44.30	1.60
Average			(19.23)			3.91
No. of Companies		102				

REBUTTAL SCHEDULE JVW-6
VALUE LINE COMPANIES WITH MARKET-TO-BOOK RATIOS >1.0
AND EARNED RETURNS ON BOOK EQUITY
IN THE RANGE 0 PERCENT TO 9 PERCENT

Company Name	Ticker	Industry	Return on Common Equity	Stock Price	Book Value per share	Market to Book
1-800-FLOWERS.COM	FLWS	INTERNET	1.65	5.60	2.96	1.89
99(Cents) Only Stores	NDN	RETAIL	5.70	11.35	7.02	1.62
AAR Corp.	AIR	DEFENSE	8.31	27.38	11.53	2.37
Activision Inc.	ATVI	ENT TECH	3.41	17.72	4.41	4.02
Advanced Energy	AEIS	SEMICOND	1.40	18.22	5.78	3.15
Advanced Micro Dev.	AMD	SEMICOND	8.21	21.43	7.70	2.78
Advent Software	ADVS	SOFTWARE	5.84	37.28	7.77	4.80
AEGON	AEG	INSLIFE	6.59	18.19	16.91	1.08
Agilysys Inc.	AGYS	ELECTRNX	8.96	15.98	12.62	1.27
Agnico-Eagle Mines	AEM	GOLDSILV	5.16	44.69	6.70	6.67
AirTran Hldgs. Inc.	AAI	AIRTRANS	0.48	12.67	3.96	3.20
Alaska Air Group	ALK	AIRTRANS	5.65	40.09	24.74	1.62
Albany Molecular	AMRI	DRUG	5.64	11.24	9.66	1.16
Alcan Inc.	AL	MINING	8.62	49.63	25.50	1.95
Allegheny Energy	AYE	UTILEAST	8.80	45.28	10.34	4.38
Allied Waste	AW	ENVIRONM	5.21	12.87	7.63	1.69
Allstate Corp.	ALL	INSPRPTY	8.74	63.98	31.25	2.05
ALLTEL Corp.	AT	TELESERV	8.37	58.30	33.93	1.72
ALPHARMA Inc.	ALO	MEDSUPPL	3.70	23.48	16.87	1.39
Amer. Financial Group	AFG	INSPRPTY	7.99	53.26	31.48	1.69
Amer. Greetings	AM	PACKAGE	7.38	24.18	19.75	1.22
Amer. States Water	AWR	WATER	8.53	38.44	15.72	2.45
AmerisourceBergen	ABC	MEDSUPPL	8.33	46.68	20.53	2.27
Analogic Corp.	ALOG	INSTRMNT	1.26	54.88	28.93	1.90
Andrew Corp.	ANDW	TELEQUIP	2.70	10.01	9.54	1.05
Angelica Corp.	AGL	INDUSRV	1.55	21.63	16.08	1.35
AngloGold Ashanti ADR	AU	GOLDSILV	6.32	46.53	11.94	3.90
AnnTaylor Stores	ANN	RETAILSP	8.83	34.36	14.27	2.41
Arch Coal	ACI	COAL	4.68	35.42	8.25	4.29
Arrow Int'l	ARRO	MEDSUPPL	8.25	35.50	10.73	3.31
ATMI Inc.	ATMI	SEMI-EQP	6.85	32.97	12.08	2.73
Atmos Energy	ATO	GASDISTR	8.47	32.82	19.90	1.65
AutoNation Inc.	AN	RETAUTO	8.47	20.79	17.81	1.17
Avista Corp.	AVA	UTILWEST	5.85	26.71	15.87	1.68
Avnet Inc.	AVT	ELECTRNX	8.02	24.86	17.36	1.43
AVX Corp.	AVX	ELECTRNX	5.64	15.83	8.41	1.88
Aztar Corp.	AZR	HOTELGAM	8.87	53.97	17.50	3.08
Bandag Inc.	BDG	TIRE	8.84	50.34	28.76	1.75

Company Name	Ticker	Industry	Return on Common Equity	Stock Price	Book Value per share	Market to Book
Barrick Gold	ABX	GOLDSILV	7.94	30.86	7.16	4.31
Belden CDT	BDC	ELECEQ	8.14	39.83	16.85	2.36
Belo Corp. 'A'	BLC	ENTRTAIN	8.32	18.63	14.23	1.31
Big Lots Inc.	BIG	RETAIL	1.45	23.00	9.47	2.43
Biogen Idec Inc.	BIIB	DRUG	2.32	51.10	20.31	2.52
Black Box	BBOX	TELEQUIP	6.90	43.24	30.76	1.41
Bob Evans Farms	BOBE	RESTRNT	6.82	34.51	19.55	1.77
Bombardier Inc. 'B'	BBDB.TO	DEFENSE	5.29	3.86	1.37	2.82
Bowne & Co.	BNE	PUBLISH	0.24	15.98	9.72	1.64
Brink's (The) Co.	BCO	DIVERSIF	5.05	56.47	14.26	3.96
Brocade Communic.	BRCD	COMPUTER	8.47	8.87	1.89	4.69
Brush Engineered	BW	MINING	8.42	35.63	10.99	3.24
Burger King Hldgs.	BKC	RESTRNT	4.76	18.95	4.26	4.45
CA Inc.	CA	SOFTWARE	3.33	22.53	8.19	2.75
Callaway Golf	ELY	RECREATE	4.54	15.12	8.45	1.79
Cambrex Corp.	CBM	CHEMDIV	5.31	22.46	9.09	2.47
Cameco Corp.	CCO.TO	MINING	8.89	44.34	6.76	6.56
Capitol Fed. Fin'l	CFFN	THRIFT	7.52	37.88	11.65	3.25
Caraustar Inds.	CSAR	PACKAGE	6.28	7.81	3.77	2.07
Cascade Natural Gas	CGC	GASDISTR	7.79	25.93	10.39	2.50
Casella Waste Sys.	CWST	ENVIRONM	3.59	11.27	5.82	1.94
CBS Corp. 'B'	CBS	ENTRTAIN	5.23	30.87	28.58	1.08
CDI Corp.	CDI	HUMAN	5.14	25.49	13.69	1.86
Cen. Vermont Pub. Serv.	CV	UTILEAST	0.47	21.91	17.70	1.24
Central Parking	CPC	INDUSRV	7.48	18.20	12.30	1.48
Ceridian Corp.	CEN	SOFTWARE	8.90	25.05	8.93	2.81
CH Energy Group	CHG	UTILEAST	8.79	53.70	31.97	1.68
Charles River	CRL	MEDSUPPL	6.35	43.19	25.39	1.70
CheckFree Corp.	CKFR	INTERNET	8.15	41.34	16.33	2.53
Chemtura Corp.	CEM	CHEMSPEC	2.20	9.77	7.40	1.32
Chesapeake Corp.	CSK	PACKAGE	3.08	17.25	14.91	1.16
Circuit City Stores	CC	RETAILSP	7.73	25.01	11.18	2.24
Clark Inc.	CLK	HUMAN	3.32	16.41	15.42	1.06
Clear Channel	CCU	ENTRTAIN	7.19	35.41	16.40	2.16
CNA Fin'l	CNA	FINANCL	1.62	39.45	32.03	1.23
Cognex Co.	CGNX	INSTRMNT	7.04	24.29	10.82	2.24
Coherent Inc.	COHR	INSTRMNT	5.84	32.08	20.41	1.57
Comcast Corp.	CMCSK	CABLETV	2.73	41.73	18.81	2.22
Comverse Technology	CMVT	SOFTWARE	3.19	19.99	9.02	2.22
Cooper Cos.	COO	MEDSUPPL	7.20	53.97	28.36	1.90
Corn Products Int'l	CPO	FOODPROC	7.43	36.95	16.33	2.26
CoStar Group	CSGP	INFOSER	3.46	50.26	12.04	4.17
Cott Corp.	COT	BEVERAGE	5.10	13.27	6.72	1.97
Crawford & Co. 'B'	CRD/B	FINANCL	7.19	7.16	3.65	1.96
CTS Corp.	CTS	ELECTRNX	7.36	15.40	9.19	1.68
Cubic Corp.	CUB	ELECTRNX	3.91	22.95	11.12	2.06

Company Name	Ticker	Industry	Return on Common Equity	Stock Price	Book Value per share	Market to Book
Cymer Inc.	CYMI	SEMI-EQP	8.64	48.35	14.92	3.24
DeVry Inc.	DV	EDUC	7.62	26.98	7.98	3.38
Digene Corp.	DIGE	MEDSUPPL	4.76	51.00	7.50	6.80
Dillard's Inc.	DDS	RETAIL	5.19	36.01	29.52	1.22
DIRECTV Group (The)	DTV	CABLETV	4.11	23.34	6.20	3.76
Dixie Group	DXYN	FURNITUR	8.06	13.99	9.75	1.43
DRS Technologies	DRS	DEFENSE	6.03	50.02	33.86	1.48
DSP Group	DSPG	WIRELESS	8.44	22.09	12.21	1.81
DTS Inc.	DTSI	ENT TECH	5.49	25.16	8.25	3.05
Eclipsys Corp.	ECLP	HLTHSYS	0.33	21.28	2.93	7.26
El Paso Corp.	EP	GASDIVRS	7.35	14.59	4.00	3.65
El Paso Electric	EE	UTILWEST	6.58	24.94	11.59	2.15
Electro Scientific	ESIO	SEMI-EQP	3.99	19.74	13.36	1.48
Electronic Arts	ERTS	ENT TECH	8.89	54.76	11.17	4.90
Electronic Data Sys.	EDS	SOFTWARE	3.24	27.07	14.35	1.89
Emdeon Corp.	HLTH	HLTHSYS	6.79	12.06	3.86	3.12
Empire Dist. Elec.	EDE	UTILCENT	6.04	24.27	15.08	1.61
Energy East Corp.	EAS	UTILEAST	8.94	25.01	19.45	1.29
Enterprise Products	EPD	GASDIVRS	7.38	28.63	14.57	1.96
eSpeed Inc.	ESPD	B2B	0.83	9.43	4.92	1.92
Esterline Technologies	ESL	DEFENSE	8.22	39.00	24.52	1.59
Expedia Inc.	EXPE	INTERNET	4.21	18.50	16.50	1.12
Extreme Networks	EXTR	COMPUTER	5.21	4.13	2.03	2.03
Fairchild Semic.	FCS	SEMICOND	2.07	17.61	8.37	2.10
Federal Signal	FSS	AUTO	6.08	16.47	7.82	2.11
Federated Dept. Stores	FD	RETAIL	8.21	41.31	24.72	1.67
Ferro Corp.	FOE	CHEMSPEC	5.12	21.53	11.05	1.95
Flextronics Int'l	FLEX	ELECTRNX	7.21	11.56	9.26	1.25
Flowserve Corp.	FLS	MACHINE	5.55	54.10	14.86	3.64
Forest Oil	FST	OILPROD	8.99	35.28	26.87	1.31
Forrester Research	FORR	INFOSER	7.44	29.70	9.45	3.14
Foundry Networks	FDRY	TELEQUIP	7.03	14.64	5.56	2.63
Fred's Inc. 'A'	FRED	RETAIL	7.68	11.79	8.52	1.38
FUJIFILM Hldgs. ADR	FUJIY	ELECFGN	1.88	41.37	32.89	1.26
Furniture Brands	FBN	FURNITUR	8.33	17.73	18.20	0.97
G&K Services `A'	GKSR	INDUSRV	7.64	39.32	24.05	1.63
Gateway Inc.	GTW	COMPUTER	5.57	1.91	0.68	2.81
Genzyme Corp.	GENZ	DRUG	8.57	63.00	20.22	3.12
Glatfelter	GLT	PAPER	4.00	15.05	9.80	1.54
Global Inds.	GLBL	OILFIELD	6.99	14.42	4.34	3.32
GlobalSantaFe Corp.	GSF	OILFIELD	7.99	60.20	20.26	2.97
Greatbatch Inc.	GB	ELECTRNX	3.76	27.24	12.38	2.20
GSI Group	GSIG	INSTRMNT	3.15	9.62	7.36	1.31
Hain Celestial Group	HAIN	FOODPROC	6.45	31.29	15.92	1.97
Hanover Insurance	THG	INSPRPTY	3.61	48.01	36.34	1.32
Harmonic Inc.	HLIT	TELEQUIP	1.41	7.87	1.53	5.14

Company Name	Ticker	Industry	Return on Common Equity	Stock Price	Book Value per share	Market to Book
Harrah's Entertain.	HET	HOTELGAM	8.36	79.51	30.77	2.58
Haverty Furniture	HVT	RETAILSP	5.39	14.92	12.45	1.20
Hudson City Bancorp	HCBK	THRIFT	5.30	13.72	8.83	1.55
IAC/InterActiveCorp	IACI	ENTRTAIN	6.48	36.66	25.96	1.41
IDACORP Inc.	IDA	UTILWEST	6.20	39.86	24.03	1.66
IKON Office Solution	IKN	OFFICE	6.01	16.31	11.57	1.41
InfraSource Services	IFS	BUILDING	4.28	21.73	7.67	2.83
Input/Output	IO	OILFIELD	4.98	11.60	4.11	2.82
Insituform Techn.	INSU	BUILDING	4.33	26.04	11.27	2.31
Integrated Device	IDTI	SEMICOND	3.67	17.26	9.37	1.84
Intermec Inc.	IN	WIRELESS	8.54	24.23	7.59	3.19
Intersil Corp. 'A'	ISIL	SEMICOND	4.49	24.98	17.23	1.45
Interwoven Inc.	IWOV	B2B	0.05	14.23	7.02	2.03
Int'l Paper	IP	PAPER	6.14	33.42	17.03	1.96
Invacare Corp.	IVC	MEDSUPPL	7.20	23.84	23.71	1.01
Invitrogen Corp.	IVGN	MEDSUPPL	6.46	56.86	35.03	1.62
iRobot Corp.	IRBT	DEFENSE	2.98	19.32	3.74	5.17
Iron Mountain	IRM	INDUSRV	8.30	42.15	10.41	4.05
Janus Capital Group	JNS	FINANCL	3.40	20.77	11.95	1.74
Jo-Ann Stores	JAS	RETAILSP	1.02	20.72	17.09	1.21
Juniper Networks	JNPR	TELEQUIP	6.24	20.75	12.14	1.71
K2 Inc.	KTO	RECREATE	8.77	13.91	9.53	1.46
Kadant Inc.	KAI	DIVERSIF	4.75	24.79	15.29	1.62
Kaman Corp.	KAMN	DIVERSIF	7.02	23.72	11.28	2.10
Kansas City South'n	KSU	RAILROAD	1.31	27.60	19.34	1.43
Keane Inc.	KEA	SOFTWARE	7.58	12.29	7.58	1.62
Kellwood Co.	KWD	APPAREL	7.48	34.58	23.76	1.46
Kelly Services 'A'	KELYA	HUMAN	5.84	29.56	18.76	1.58
KEMET Corp.	KEM	ELECTRNX	3.55	7.39	5.90	1.25
KeySpan Corp.	KSE	GASDISTR	8.88	40.91	25.60	1.60
Kimball Int'l 'B'	KBALB	FURNITUR	4.47	24.04	11.05	2.18
Knight Capital Group	NITE	BROKERS	4.38	18.18	7.93	2.29
Kyocera Corp. ADR	KYO	ELECFGN	3.90	90.20	58.56	1.54
Lamar Advertising	LAMR	ADVERT	2.28	61.16	17.10	3.58
Landry's Restaurants	LNY	RESTRNT	8.67	29.77	23.93	1.24
Laureate Education	LAUR	EDUC	8.76	52.35	19.63	2.67
La-Z-Boy Inc.	LZB	FURNITUR	8.70	12.17	10.10	1.20
LeapFrog Enterpr. 'A'	LF	RECREATE	3.75	8.97	7.47	1.20
Lear Corp.	LEA	AUTO-OEM	6.30	29.61	16.54	1.79
Libbey Inc.	LBY	HOUSEPRD	1.02	11.62	8.54	1.36
LifePoint Hospitals	LPNT	MEDSERV	8.99	35.16	22.55	1.56
Loews Corp.	LTR	FINANCL	6.36	40.32	23.48	1.72
Lone Star Steakhouse	STAR	RESTRNT	5.16	27.75	19.90	1.39
Longs Drug Stores	LDG	DRUGSTOR	7.97	42.13	20.63	2.04
Longview Fibre	LFB	PAPER	3.63	20.96	8.81	2.38
Macrovision Corp.	MVSN	ENT TECH	5.16	27.95	8.34	3.35

Company Name	Ticker	Industry	Return on Common Equity	Stock Price	Book Value per share	Market to Book
Marcus Corp.	MCS	HOTELGAM	7.45	26.02	9.90	2.63
Markel Corp.	MKL	INSPRPTY	7.75	458.95	174.05	2.64
Martek Biosciences	MATK	BIOTECH	3.25	24.41	14.65	1.67
Massey Energy	MEE	COAL	7.70	27.39	10.26	2.67
Material Sciences	MSC	CHEMSPEC	4.26	12.35	8.31	1.49
Matsushita Elec. ADR	MC	ELECFGN	4.13	19.17	14.27	1.34
MAXIMUS Inc.	MMS	INDUSRV	8.88	30.03	18.92	1.59
McDATA Corp. 'A'	MCDTA	COMPUTER	4.06	6.02	3.60	1.67
MeadWestvaco	MWV	PACKAGE	4.62	29.77	19.20	1.55
Medco Health Solutions	MHS	DRUGSTOR	7.79	51.79	25.39	2.04
MedImmune Inc.	MEDI	DRUG	1.72	32.60	6.36	5.13
Mentor Graphics	MENT	SOFTWARE	7.35	17.91	5.66	3.16
Micron Technology	MU	SEMICOND	3.19	14.71	9.49	1.55
Minerals Techn.	MTX	CHEMSPEC	6.90	58.75	38.65	1.52
MKS Instruments	MKSI	SEMI-EQP	5.17	21.08	13.93	1.51
Moldflow Corp.	MFLO	SOFTWARE	3.93	13.08	7.49	1.75
Molecular Devices	MDCC	MEDSUPPL	7.46	22.07	12.77	1.73
Molson Coors Brewing	TAP	ALCO-BEV	5.93	71.42	62.15	1.15
Monaco Coach	MNC	HOMESRVS	2.22	14.14	10.67	1.33
MPS Group	MPS	HUMAN	6.80	15.26	8.56	1.78
MSC.Software	MSCS	SOFTWARE	6.55	15.74	5.91	2.66
Myers Inds.	MYE	DIVERSIF	7.82	16.37	9.75	1.68
National Oilwell Varco	NOV	OILFIELD	6.84	67.03	24.05	2.79
National Presto Ind.	NPK	APPLIANC	7.21	62.45	38.52	1.62
Nat'l Fin'l Partners	NFP	FINANCL	8.51	46.08	17.70	2.60
NEC Corp. ADR	NIPNY	ELECFGN	8.54	4.79	3.93	1.22
Netflix Inc.	NFLX	INTERNET	5.72	28.64	4.09	7.00
New York Community	NYB	THRIFT	8.78	16.45	12.32	1.34
Newmont Mining	NEM	GOLDSILV	4.82	46.96	18.71	2.51
Newport Corp.	NEWP	INSTRMNT	6.82	21.46	9.41	2.28
News Corp. Inc.	NWS	ENTRTAIN	8.99	21.94	9.47	2.32
NiSource Inc.	NI	UTILCENT	5.97	24.58	18.09	1.36
Northeast Utilities	NU	UTILEAST	5.06	28.85	18.46	1.56
Northrop Grumman	NOC	DEFENSE	7.43	68.33	48.45	1.41
Novell Inc.	NOVL	SOFTWARE	4.18	6.30	3.57	1.76
Novellus Sys.	NVLS	SEMI-EQP	6.68	34.38	13.40	2.57
O'Charleys Inc.	CHUX	RESTRNT	3.44	21.94	15.21	1.44
OfficeMax	OMX	OFFICE	1.13	49.88	23.74	2.10
OM Group	OMG	CHEMSPEC	5.08	52.06	18.31	2.84
Openwave Systems	OPWV	WIRELESS	5.39	9.12	2.22	4.11
Ormat Technologies	ORA	POWER	8.32	39.59	5.78	6.85
Packaging Corp.	PKG	PACKAGE	7.72	22.80	6.57	3.47
Par Pharmaceutical	PRX	DRUG	2.89	20.60	12.52	1.65
PC Connection	PCCC	RETAILSP	3.48	13.84	6.79	2.04
Penford Corp.	PENX	CHEMSPEC	4.26	16.89	12.00	1.41
Pepco Holdings	POM	UTILEAST	7.67	26.77	18.88	1.42

Company Name	Ticker	Industry	Return on Common Equity	Stock Price	Book Value per share	Market to Book
Performance Food	PFGC	FOODWHOL	5.37	27.29	21.82	1.25
PerkinElmer Inc.	PKI	INSTRMNT	8.36	21.45	12.79	1.68
Philips Electronics NV	PHG	ELECFGN	9.00	37.06	16.37	2.26
Photronics Inc.	PLAB	SEMI-EQP	6.87	15.74	13.60	1.16
Pinnacle West Capital	PNW	UTILWEST	6.51	50.07	34.57	1.45
Plexus Corp.	PLXS	ELECTRNX	7.86	24.68	7.77	3.18
PNM Resources	PNM	UTILWEST	8.24	31.12	18.70	1.66
Polycom Inc.	PLCM	TELEQUIP	8.79	30.31	9.65	3.14
Potlatch Corp.	PCH	PAPER	4.67	42.76	24.01	1.78
Powerwave Techn.	PWAV	WIRELESS	8.71	6.34	5.23	1.21
Progress Energy	PGN	UTILEAST	8.98	48.54	31.90	1.52
Provident Energy	PVX	CANENRGY	6.89	11.06	6.40	1.73
Public Storage	PSA	REIT	8.62	97.44	18.11	5.38
Puget Energy Inc.	PSD	UTILWEST	7.21	25.35	17.52	1.45
Quaker Chemical	KWR	CHEMSPEC	6.42	20.83	10.89	1.91
Quanta Services	PWR	INDUSRV	4.20	18.86	6.04	3.12
Quebecor World	IQW	PUBLISH	8.04	11.47	13.70	0.84
Raytheon Co.	RTN	DEFENSE	8.79	52.48	23.99	2.19
Reinsurance Group	RGA	INSLIFE	8.92	55.71	41.38	1.35
RF Micro Devices	RFMD	WIRELESS	2.72	7.75	3.15	2.46
Rite Aid Corp.	RAD	DRUGSTOR	1.85	4.79	2.14	2.24
Rock-Tenn 'A'	RKT	PACKAGE	5.68	26.46	13.49	1.96
Saks Inc.	SKS	RETAIL	1.11	17.29	14.70	1.18
Sanofi-Aventis	SNY	DRUG	8.08	45.14	20.38	2.21
Sauer-Danfoss	SHS	MACHINE	8.82	31.09	9.24	3.36
Scholastic Corp.	SCHL	PUBLISH	6.53	33.86	25.02	1.35
Schulman (A.)	SHLM	CHEMSPEC	6.95	23.25	15.01	1.55
Sears Holdings	SHLD	RETAIL	6.21	174.80	72.57	2.41
SEMCO Energy	SEN	GASDISTR	4.93	6.16	5.65	1.09
Semitool Inc.	SMTL	SEMI-EQP	8.34	13.98	4.19	3.34
Sequa Corp. 'A'	SQA/A	DIVERSIF	6.79	114.75	60.90	1.88
Service Corp. Int'l	SCI	DIVERSIF	6.10	10.08	5.39	1.87
Shaw Commun. 'B'	SJRB.TO	CABLETV	6.21	35.30	7.07	4.99
Shaw Group	SGR	METALFAB	4.74	30.15	14.50	2.08
Sierra Pacific Res.	SRP	UTILWEST	3.99	16.90	10.26	1.65
Smart & Final	SMF	GROCERY	8.04	19.04	8.59	2.22
Smucker (J.M.)	SJM	FOODPROC	8.97	48.84	30.34	1.61
Solectron Corp.	SLR	ELECTRNX	6.72	3.37	2.55	1.32
Sony Corp. ADR	SNE	ELECFGN	3.86	39.54	27.34	1.45
Southwest Airlines	LUV	AIRTRANS	7.02	15.75	8.38	1.88
Southwest Gas	SWX	GASDISTR	6.40	38.78	19.10	2.03
Southwest Water	SWWC	WATER	5.00	13.10	6.49	2.02
Sprint Nextel Corp.	S	TELESERV	3.45	19.79	17.54	1.13
SPX Corp.	SPW	DIVERSIF	6.74	62.10	33.74	1.84
Standard Register	SR	OFFICE	4.27	12.48	6.02	2.07
Steelcase Inc. 'A'	SCS	FURNITUR	6.15	18.18	8.06	2.26

Company Name	Ticker	Industry	Return on Common Equity	Stock Price	Book Value per share	Market to Book
STERIS Corp.	STE	MEDSUPPL	8.76	26.08	10.91	2.39
STMicroelectronics	STM	SEMICOND	4.25	18.22	9.48	1.92
Sunrise Senior Living	SRZ	MEDSERV	7.34	32.06	14.56	2.20
Symantec Corp.	SYMC	SOFTWARE	2.84	20.67	13.13	1.57
Symbol Technologies	SBL	WIRELESS	5.58	14.88	4.78	3.11
Symyx Technologies	SMMX	CHEMSPEC	6.06	21.55	6.58	3.28
Synopsys Inc.	SNPS	SOFTWARE	4.72	25.95	8.35	3.11
Take-Two Interactive	TTWO	ENT TECH	5.38	19.07	9.85	1.94
Tasty Baking	TSTY	FOODPROC	4.94	9.29	4.09	2.27
Tech Data	TECD	COMPUTER	6.70	42.22	29.72	1.42
Technitrol Inc.	TNL	ELECTRNX	6.92	27.59	10.33	2.67
Telecom. de Chile ADR	CTC	TELESERV	0.54	8.06	7.38	1.09
Telephone & Data	TDS	TELESERV	1.31	52.73	27.75	1.90
TeleTech Holdings	TTEC	INDUSRV	7.84	22.91	4.24	5.40
Tellabs Inc.	TLAB	TELEQUIP	8.95	10.11	6.26	1.62
Temple-Inland	TIN	PAPER	8.46	40.90	18.74	2.18
Tetra Tech	TTEK	ENVIRONM	2.27	17.79	5.34	3.33
Thoratec Corp.	THOR	MEDSUPPL	3.79	15.15	6.73	2.25
THQ Inc.	THQI	ENT TECH	5.43	33.98	9.84	3.45
TIBCO Software	TIBX	B2B	6.10	9.63	4.15	2.32
Time Warner	TWX	ENTRTAIN	4.63	20.58	13.94	1.48
Topps Co.	TOPP	RECREATE	2.61	8.57	5.15	1.66
TransAlta Corp.	TA.TO	CANENRGY	6.69	25.93	12.80	2.03
Transatlantic Hldgs.	TRH	INSPRPTY	1.49	62.25	38.60	1.61
Transocean Inc.	RIG	OILFIELD	6.58	78.13	24.58	3.18
Tredegar Corp.	TG	CHEMSPEC	5.98	20.54	12.53	1.64
TreeHouse Foods	THS	FOODPROC	5.29	32.90	16.51	1.99
Trex Co.	TWP	BUILDING	1.51	22.52	11.05	2.04
Triad Hospitals	TRI	MEDSERV	7.83	41.43	33.90	1.22
Trinity Inds.	TRN	METALFAB	8.78	38.78	13.83	2.80
Tyson Foods 'A'	TSN	FOODPROC	7.73	16.46	13.10	1.26
U.S. Cellular	USM	TELESERV	3.68	67.73	29.97	2.26
UIL Holdings	UIL	UTILEAST	5.75	42.97	22.39	1.92
Union Pacific	UNP	RAILROAD	6.63	94.02	49.70	1.89
UniSource Energy	UNS	UTILWEST	7.48	37.29	17.68	2.11
Universal Corp.	UVV	TOBACCO	7.02	47.02	29.96	1.57
Univision Communic.	UVN	ENTRTAIN	5.73	35.45	16.69	2.12
UNUMProvident Corp.	UNM	INSLIFE	7.04	20.38	24.67	0.83
Vail Resorts	MTN	HOTELGAM	7.11	45.60	16.59	2.75
Valeant Pharmac.	VRX	DRUG	7.72	17.10	4.74	3.61
Varian Semiconductor	VSEA	SEMI-EQP	7.99	41.76	12.09	3.45
Veeco Instruments	VECO	INSTRMNT	5.53	18.77	8.27	2.27
ViaSat Inc.	VSAT	WIRELESS	8.93	27.39	9.54	2.87
Volt Info. Sciences	VOL	HUMAN	5.77	47.77	19.23	2.48
Warnaco Group	WRNC	APPAREL	8.26	26.67	13.71	1.95
Washington Group Int'l	WGII	BUILDING	7.87	59.46	27.62	2.15

Company Name	Ticker	Industry	Return on Common Equity	Stock Price	Book Value per share	Market to Book
Watson Pharmac.	WPI	DRUG	7.33	25.74	20.67	1.25
Wausau Paper	WPP	PAPER	1.02	15.33	6.08	2.52
Weatherford Int'l	WFT	OILFIELD	8.19	44.23	15.79	2.80
webMethods Inc.	WEBM	B2B	8.71	7.29	3.80	1.92
West Marine	WMAR	RETAILSP	1.61	17.67	13.99	1.26
Wild Oats Markets	OATS	GROCERY	2.90	14.88	3.77	3.95
Williams Cos.	WMB	GASDIVRS	7.88	27.75	9.47	2.93
Wind River Sys.	WIND	WIRELESS	8.53	10.64	3.54	3.01
Zale Corp.	ZLC	RETAILSP	5.15	31.34	16.63	1.88
Zoran Corp.	ZRAN	ENT TECH	5.50	15.45	10.99	1.41
Average			5.91			2.24
No. of Companies			324			324

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Union Electric Company d/b/a AmerenUE d/b/a AmerenUE for Authority to File Tariffs Increasing Rates for Electric Service Provided to Customers in the Company's Missouri Service Area.	)))))	Case No. ER-2007-0002

AFFIDAVIT OF JAMES H. VANDER WEIDE

STATE OF NORTH CAROLINA)
) **ss**
COUNTY OF DURHAM)

James H. Vander Weide, being first duly sworn on his oath, states:

1. My name is James H. Vander Weide. I work in the City of Durham, North Carolina, and I am Research Professor of Finance and Economics at the Fuqua School of Business, Duke University.

2. Attached hereto and made a part hereof for all purposes is my Rebuttal Testimony on behalf of Union Electric Company d/b/a AmerenUE which has been prepared in written form for introduction into evidence in the above-referenced docket.

3. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct.

James H. Vander Weide, Ph.D.
James H. Vander Weide, Ph.D.

Subscribed and sworn to before me this 26 day of January 2007.

Sheila R. Wilson
Notary Public

My commission expires: 02/19/2007

OFFICIAL SEAL
Notary Public, North Carolina
SHEILA R. WILSON
My Commission Exp. Feb. 19, 2007