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SURREBUTTAL TESTIMONY

OF

STEPHEN G. HILL

ON BEHALF OF

THE MISSOURI PUBLIC SERVICE COMMISSION

UNION ELECTRIC COMPANY
d/b/a AmerenUE

CASE NO. ER-2008-0318

Jefferson City, Missouri
November 2008

**** Denotes Highly Confidential Information ****

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Q. PLEASE STATE YOU NAME, OCCUPATION AND ADDRESS.

A. My name is Stephen G. Hill. I am self-employed as a financial consultant, and principal of Hill Associates, a consulting firm specializing in financial and economic issues in regulated industries. My business address is P. O. Box 587, Hurricane, West Virginia, 25526 (e-mail: hillassociates@gmail.com).

Q. ARE YOU THE SAME STEPHEN HILL WHO TESTIFIED PREVIOUSLY IN THIS PROCEEDING ON BEHALF OF THE COMMISSION STAFF REGARDING COST OF CAPITAL ISSUES?

A. Yes, I am.

Q. WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?

A. I will respond to the Rebuttal Testimony submitted by Union Electric Company, d/b/a AmerenUE (the Company or AmerenUE) witnesses Dr. Roger Morin, Mr. Gary Rygh, and Mr. Michael O'Bryan.

Q. HAS THE TESTIMONY OF ANY OF THE COMPANY'S WITNESSES CAUSED YOU TO MODIFY THE METHODOLOGIES YOU HAVE USED IN ESTIMATING THE COST OF CAPITAL IN YOUR DIRECT TESTIMONY?

A. No, the Company witness' testimony regarding my cost of capital analysis is not persuasive in that regard.

Q. DOES THE RECENT TURMOIL IN THE CAPITAL MARKETS INDICATE THAT THERE HAS BEEN ANY SIGNIFICANT SHIFT IN THE COST OF CAPITAL THAT WOULD IMPACT YOUR RECOMMENDATIONS PREVIOUSLY FILED IN THIS PROCEEDING?

A. No. The cost of capital estimates I filed previously in this proceeding, based on market data and projections existing prior to the recent market down-turn, remain a reliable indication of the return that should be allowed in setting rates for AmerenUE in this proceeding for several reasons. First, the cost of capital determined in a proceeding such as this is long-term in nature. That is why long-term sustainable growth rates are called for in the DCF model and why long-term U.S. Treasury bond yields are used in the regulatory application of the CAPM model. Also, the long-term nature of cost of capital estimates matches the long-lived nature of utility assets. While the current dislocation in the credit markets is severe, and has unearthed technical risks in the financial system, those risks are being aggressively addressed by governments around the globe and the "credit freeze," which precipitated the downturn, has already begun to ease and is not expected to be a long-term condition. That is, the cost of equity is a long-term phenomenon but the current credit crisis is not.

Second, even though the current difficulties in the financial system are not expected to be permanent, the depth of the financial crisis has caused a shift in the outlook for the economy and, thus, in investors' short-term market return expectations. What was widely expected earlier this year to be a U.S. economy in moderate recovery is now expected to be one that will endure a one- to two-year recession. Negative economic growth, of course, portends lower returns for the firms that comprise the economy and lower return expectations for investors. The other primary factor in investors' re-evaluation of the price they are willing to provide to buy stocks is the realization of the extent to which the financial sector was over-leveraged and engaged, without oversight, in financial practices that endangered the availability of credit. While governments in the industrialized world have intervened to provide capital to both the money-center banks and even directly to corporations, the new knowledge of the extent

to which the financial sector utilized leverage has raised investors' perceptions of the potential volatility in the financial system.

The combination of these two factors, which imply lower expected returns (recession) and higher volatility risk (financial sector leverage/credit crisis) caused investors, en masse, to sharply re-value the prices they were wiling to provide for stocks. However, the decline in stock prices is not due to higher return expectations by investors or a higher cost of capital to corporations.

Third, trying to estimate with any specificity investors' long-term return expectations in the current transitory economic environment would be a difficult task that would, most likely, result in widely variant, unreliable estimates. On the other hand, the cost of capital estimates currently before the Commission were made in a relatively steady-state economic environment in which investor sentiment could be reasonably accurately estimated. Moreover, given the current outlook for economic recession, investors' return expectations are likely to be lower than they were before the credit crisis, and the Commission's reliance on the equity cost estimates previously filed would provide a conservative basis for the determination of investors' current long-term expectations.

Fourth, because long-term U.S. Treasury yields have declined during the financial crisis and utility beta coefficients are lower because utility stocks have been less volatile than the broader stock market, a Capital Asset Pricing Model (CAPM) analysis indicates a current cost of equity capital for utilities similar in risk to AmerenUE that is lower than it was when I performed my initial analysis in this case. According to the October 24, 2008 edition of Value Line, *Selection & Opinion* (p. 3877), the recent yield on 30-year Treasury Bonds was 4.19%—40 basis points lower than three months ago and 64 basis points lower than one year ago. Also the current (October 24, 2008) edition of Value Line's *Summary & Index* indicates that the average beta coefficient of the companies in my similar-risk sample group is now 0.81 rather than the 0.83 I used in my original CAPM analysis. Combining those current data with the mid-point of the long-term market risk premium range published by Brealey and Meyers in their most recent finance

textbook (5.30%),[1] produces a CAPM cost of equity estimate for AmerenUE of 8.48% [4.19% risk-free yield + 0.81 x 5.30% (market risk premium) = 8.48%]. That result is 50 basis points lower than the CAPM equity cost estimate using the same parameters, presented in my Direct Testimony in Exhibit__(SGH-1), Schedule 8.

At the same time that economy-wide risk-free rates indicate that the cost of capital has declined there are other indications that appear to be contrary. For example, the recent Value Line, *Selection & Opinion* that reports lower risk-free yields also reports that current utility BBB-rated bond yields are 47 basis points higher than they were three months ago. However, it is reasonable to believe that that increase in yield spread between Treasury bonds and utility bonds is related to the current technical difficulty in the credit markets, which is unlikely to be a permanent or long-term phenomenon. That yield difference alone, therefore, would not provide a reliable indication of investors' long-term cost of equity capital expectations.

Also, according to Value Line's most recent year-ahead dividend yield projection for the companies in my electric utility sample group (October 24, 2008 *Summary & Index*), the expected dividend yield for those companies has increased 96 basis points from 4.33% to 5.28%. If the long-term expected growth rates of those companies were expected to be the same as they were when I performed my original analysis, the increase in the investor-expected dividend yield for those companies would indicate an increase in the cost of equity capital. However, it is reasonable to believe that investors' current growth rate expectations are lower than they were earlier this year, due to the anticipated impact of a slowing economy, which would moderate or even negate any increase in the average expected dividend yield. Moreover, the Value Line published growth rate data for all the companies in my sample group has not been updated, and the current earnings growth rate data available for those companies are not representative of investors' long-term expectations. Therefore, a reliable single-stage DCF equity cost estimate, similar to

[1] Brealey, R., Meyers, S., Allen, F., Principles of Corporate Finance, 8th Edition, McGraw-Hill, Irwin, Boston MA, 2006, pp. 149, 154, 222.

that employed in my Direct Testimony, would be difficult to produce in the current market environment.

As noted by Dr. Morin at pages 59 through 61 of his Direct Testimony a non-constant (multi-stage) DCF model that relies on macro-economic growth rates (GDP growth) as a long-term final-stage growth rate can be used in a "dynamic" economic environment. Moreover, as shown by Missouri Industrial Energy Consumers' witness Gorman at pages 14 and 15 of his Rebuttal Testimony, using a then-reasonable estimate of GDP growth produced a non-constant DCF equity cost estimate for Dr. Morin's sample group of 9.5%. Of course, including two years of negative growth in that long-term growth rate expectation would lower the expected GDP growth, as well as those non-constant DCF results.

In summary, the recent down-turn in stock prices in the marketplace does not indicate that the cost of equity capital is markedly different from that presented in my Direct Testimony in this proceeding, which was based on relatively steady-state market data prior to the recent financial crisis. There are current indications that equity capital costs are lower, as well as some indications that, in the short-term, fixed-income costs may be higher. Also, it is difficult to assess long-term expectations with specificity in the midst of the type of market re-alignment in which we now find ourselves. Therefore, while it is reasonable to believe that investor return expectations are currently lower than they were a few months ago, not higher, reliance on the cost of capital estimates I originally provided in this proceeding would provide a reliable and conservative basis for the cost of capital to be included in AmerenUE's rates to be determined in this proceeding.

COMPANY WITNESS RYGH

Q, COMPANY WITNESS RYGH DISCUSSES THE RECENT FINANCIAL CRISIS IN HIS REBUTTAL TESTIMONY AND CONCLUDES THAT IT MAY BE DIFFICULT

FOR THE CREDIT MARKETS TO ABSORB THE FINANCING REQUIREMENTS FACING THE UTILITY INDUSTRY. IS THAT A UNIVERSALY-HELD BELIEF?

A. No. As a result of the unsettling financial situation, Mr. Rygh, himself, notes in his Rebuttal Testimony that there is likely to be "flight to quality" by investors. In my view, a "flight to quality" implies a move by investors away from the riskier investments available to them (e.g., collateralized debt obligations related to mortgage-backed securities) to more stable, less risky, investments (e.g., utility investments), where returns are regulated and more reliable. That view was echoed in an editorial appearing in the latest edition of *Public Utilities Fortnightly* (PUF). In assessing the outlook for utilities' ability to access capital in the current market turmoil, Michael Burr, the editor of PUF, made the following statement:

> Investor-owned utilities offer an amazingly attractive investment in the current market. Where else can investor place huge amounts of money and get total shareholder returns exceeding 20 percent a year, including rate-regulated equity returns in the 10 percent range? Compared with other investments in today's volatile and bearish market, utility stocks are a no-brainer investment. (Burr, M., "A Time to Lead: The Financial Crisis Calls on Utilities to Invest in America's Future,"*Public Utilities Fortnightly*, October, 2008, p. 6)

While Mr. Rygh's view of the current financial crisis is understandable as a former employee of the now-bankrupt Lehman Brothers investment banking firm, *Public Utilities Fortnightly*'s opinion of the investment prospects for the electric utility industry appears more rational.

Q. IS THERE ANOTHER ASPECT OF MR. RYGH'S TESTIMONY ON WHICH YOU WISH TO COMMENT?

A. At pages 17 through 21 of his Rebuttal Testimony, Mr. Rygh emphasizes the importance of regulation in the assessment of utilities' investment prospects, outlining the aspects of utility regulation that benefit investors and indicating that utilities regulated under favorable conditions would be more attractive to investors. In discussing those aspects of

regulation, Mr. Rygh noted that his firm publishes evaluations of regulators considering "key factors" that comprise a "constructive regulatory environment." According to the most recent review of regulation published by Mr. Rygh's firm, AmerenUE operates in one of the more constructive regulatory environments in the country.

At page 17, line 21 to page 18, line 1 of his Rebuttal Testimony, Mr. Rygh states: "Regulation is a key aspect that our team focuses on here at Barclays Capital. Frequently, we publish material which provides an overview of important regulatory trends, the regulatory climate and a ranking of each of the state regulatory commissions…" In response to Staff Data Request 332, which asked Mr. Rygh to provide the most recent published material of the type referenced in his Rebuttal Testimony, he provided a June 3, 2008 publication (Lehman Brothers Power and Utilities / Regulated Utilities / Global Equity Research / North America). First, it should be noted that on the cover of the publication appears the disclaimer, ** _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ ** Therefore, according to the published data Mr. Rygh references in his Rebuttal Testimony, Missouri regulation imparts much lower than average risk and, in that regard, AmerenUE would be viewed favorably by investors compared to the utility industry in general.

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COMPANY WITNESS O'BRYAN

Q. WHAT ARE YOUR COMMENTS REGARDING THE REBUTTAL TESTIMONY OF COMPANY WITNESS O'BRYAN?

A. In his Rebuttal Testimony, Mr. O'Bryan has elected to change his recommended ratemaking capital structure for AmerenUE. In his Rebuttal Testimony, Mr. O'Bryan has inappropriately added back approximately $145 million of retained earnings of unregulated subsidiaries no longer owned by AmerenUE, after having correctly removed those same amounts in both his original Direct and Supplemental Testimonies.

The Company's ratemaking capital structure recommendation in this proceeding is based on AmerenUE's booked capital structure at March 31, 2008. In both his Direct Testimony and Supplemental Direct Testimony, Mr. O'Bryan removed approximately $145 Million of retained earnings related to two unregulated subsidiaries from the total amount of common equity on AmerenUE's books, because AmerenUE no longer owned those companies.

In his Rebuttal Testimony, at page 8, Mr. O'Bryan indicates that, after his Supplemental Direct was filed, the March 2008 accounts of AmerenUE were changed so that the unregulated retained earnings were "corrected to a zero balance." At this point in the process, the after-the-fact balance sheet correction to remove unregulated common equity (retained earnings) from AmerenUE's March 2008 equity balances should have made the reported common equity equal to the amount Mr. O'Bryan used to determine his originally-recommended ratemaking capital structure (i.e., the unregulated retained earnings were removed from both balances). However, Mr. O'Bryan opines that because the unregulated retained earnings have been subsequently removed from the March 2008 balance sheet, his original adjustment to remove those balances is no longer necessary, and he elects to reverse his original adjustment. In reversing his original adjustment, Mr. O'Bryan adds back the $145 Million in unregulated common equity to AmerenUE's March 2008 common equity balances (which now contain no unregulated common equity), and thereby increases his recommended ratemaking common equity ratio from

51% to 52%. As reported in the Rebuttal Testimony of Company witness Weiss, Mr. O'Bryan's re-introduction of unregulated common equity into the AmerenUE balance sheet, if adopted, would cause rates to increase by $7.6 Million annually.[2]

Mr. O'Bryan's testimony indicates that the unregulated retained earnings balances were originally included in AmerenUE's March 2008 common equity balances. He correctly removed that common equity so that ratepayers would not be required to provide a return on unregulated common equity. Subsequently, the Company changed the March 2008 common equity on the balance sheet of AmerenUE by changing the unregulated retained earnings balances to zero. That accounting change would have brought the newly-changed book amount of AmerenUE common equity in agreement with the amount Mr. O'Bryan used to determine his originally-recommended ratemaking common equity ratio of 51%, because both common equity balances excluded the unregulated common equity. There is no need for Mr. O'Bryan to reverse his original adjustment because of the Company's after-the-fact accounting adjustment. In fact, by reversing his original adjustment, Mr. O'Bryan is now adding back unregulated common equity that no longer appears the Company's books of account.

Mr. O'Bryan's capital structure adjustment to re-include unregulated common equity is improper and, if adopted, would unnecessarily cost ratepayers $7.6 Million every year the rates set in this proceeding are in effect. Rates in this proceeding should be based on the Company's originally-requested ratemaking capital structure, consisting of 50.928% common equity, 1.776% preferred stock, 46.558% long-term debt and 0.739% short-term debt.

COMPANY WITNESS MORIN

Q. WHAT ISSUES RAISED IN DR. MORIN'S REBUTTAL TESTIMONY WILL YOU DISCUSS?

A. In his Rebuttal Testimony, Dr. Morin raises issues with regard to the recent average equity return awards for electric utilities, the appropriate calculation of the long-term

[2] Weiss Rebuttal, p. 16, ll. 7-14.

sustainable growth rate called for in the DCF model, the efficacy of a modified earnings price ratio analysis, and theoretical aspects of the Capital Asset Pricing Model regarding beta and the market risk premium, as well as flotation cost issues. I will address each of those issues in turn, and show that Dr. Morin's critique of my equity cost estimation methods is inapt and contradicts either his own published opinions or that of other financial texts or treatises.

Q. AT PAGES 5 AND 6 OF HIS DIRECT, DR. MORIN CLAIMS THAT YOUR EQUITY RETURN RECOMMENDATION IS "OUTSIDE THE MAINSTREAM" FOR ELECTRIC UTILITIES. IS THAT CORRECT?

A. No. Dr. Morin reports that the average equity return over the year ending August 2008 was 10.62%. However, Dr. Morin provided the data from which he drew that result in electronic form in his workpapers for his Schedule RAM-E9, and those data indicate the median allowed return on equity over the past two years (August 2006 through August 2008) is 10.25%. Applying this Commission's 100 basis point "zone of reasonableness" to that recent middle-value equity return indicates that my 9.50% return recommendation is similar to recent equity returns awarded other utilities.

While Dr. Morin cites the recent allowed return data he recognizes that "decisions of other regulatory bodies do not bind this Commission." In that regard it is worth noting that the allowed return data cited by Dr. Morin are generic in nature in that they apply to many different utilities in many different jurisdictions each with its own set of risks and regulatory regimes. For example, the average common equity ratio on which the median 10.25% equity return was allowed was below the 51%[3] common equity ratio requested by AmerenUE in this case; and a higher common equity ratio imparts lower financial risk, which would call for a lower allowed return.[4] In addition, those allowed returns are simply averaged over all the available rate case decisions during a calendar year. That

[3] Now 52% following Mr. O'Bryan's re-adjustment to common equity balances in his Rebuttal Testimony.

[4] Regulatory Research Associates' Regulatory Focus, January 8, 2008 and October 3, 2008 indicate the average common equity ratio allowed electric utilities over the last two years (third quarter 2006 through third quarter 2008, inclusive) was 48.4%.

means that the capital market data that the regulatory body considered was drawn from a time prior to the decision rendered and the allowed return might not correlate with decision-time-specific macro-economic events. In some instances, that period of time between the hearing and the decision can be substantial. Therefore, even those updated equity return awards are not necessarily indicative of the current economic environment and, therefore, the current cost of equity capital.

In a relatively recent rate decision, the Arkansas Public Service Commission recognized the problems of basing the allowed return in one regulatory jurisdiction on returns allowed in other jurisdictions for other companies:

> Several parties present as evidence information on recent allowed returns for LDC's in other states (T. 837-841, 911-913, 940-942(, (Hadaway Exhibits SCH-11 and SCH-12), (T. 135, 209, 243, 1888) This Commission gives no weight to such data for three reasons. First, there is an element of circularity involved if this Commission, as well as other state Commissions, rely upon rate of return determinations in other states for determining the appropriate allowed return for utilities in their states. Second, neither this Commission nor the parties have had an opportunity to probe the factors that made up the allowed return determinations in the other states. This Commission must make determinations based upon the evidence presented in testimony and hearings before this Commission, pursuant to the laws of the State of Arkansas. Third, this sort of comparison is akin to piecemeal ratemaking and is unacceptable. For example, we do not know the other state commissions' policies regarding rate base, expenses, depreciation, etc. As noted by CEUG witness Staley: '[E]very natural gas utility has different needs, different risks, different load profiles, and different performance levels. Consequently, every natural gas utility should have a uniquely determined ROE.' (T. 1302)" (Docket No. 04-121-U, Centerpoint Energy Arkla, Arkansas Public Service Commission, Order No. 16, September 19, 2005, pp. 45, 46)

Dr. Morin also cites allowed return data published by A.U.S. Utility Reports as support for his position that my equity return recommendation is significantly different from the norm. Unfortunately, most of those reported equity return allowances are not

reported with a date at which the return was allowed, and those that do have identified dates reach back as far as 1994. Therefore, even if one assumes that allowed returns for other utilities in other regulatory jurisdictions are determinative of the cost of capital, the A.U.S. data cited by Dr. Morin do not provide contemporaneous information to assess the current cost of capital for AmerenUE, and are therefore not reliable indicators of the current cost of equity capital for electric utilities.

Finally on this point, at page 7 of his Rebuttal Testimony, Dr. Morin notes that my recommendation in this proceeding is lower than that made by a Staff witness in the recent Empire District Electric case, indicating that I did not "provide an explanation" as to why my results were different from those of a different Staff witness in a different proceeding for a different company. Because cost of equity analysis is not an objective exercise, there will be differences in the equity cost estimates of different analysts, and an equity cost estimate provided by one analyst in one case is not probative of the veracity of the result of another analyst in another case. Of course Dr. Morin is aware of this because his recommended return in this proceeding, 10.9% to 11.15% is about 100 basis points below the 12% cost of capital for AmerenUE's electric utility operations presented by the Company's rate of return witness McShane in the preceding year's rate case (Docket No. ER-2007-0002). However, he elects not to explain that difference.

Q. AT PAGE 8 OF HIS REBUTTAL TESTIMONY, DR. MORIN REPEATS HIS POSITION THAT THE DCF UNDERSTATES THE COST OF EQUITY CAPITAL WHEN MARKET PRICES ARE ABOVE BOOK VALUE. IS THAT CORRECT?

A. No. The accuracy of a DCF analysis is not, in any way, related to the differences between utility market price per share and book value per share. I have discussed this issue in detail at pages 32 through 39 of my Direct Testimony in this case, showing that there is neither theoretical nor logical merit to Dr. Morin's claims, and will not repeat that discussion here. It is sufficient to note that the DCF method was derived in the 1950s and 1960s when utility market prices were more above book value than they are today (see chart at Hill Rebuttal Testimony, p. 33), and there was no discussion in those

seminal texts regarding the accuracy of the DCF and the market-to-book ratio. Dr. Morin's initial work regarding cost of capital was published in the mid-1980s when utility market prices had been well below book value for almost a decade, and there was no discussion of a relationship between the accuracy of the DCF and the market to book ratio in that text. The concern Dr. Morin expresses today (that the DCF misstates the cost of equity when market prices are different from book value) did not appear in his published work until the mid-1990s. Dr. Morin's recent adoption of this logic is undermined by his original position on the issue as well as the seminal work on which the DCF is based.

Q. AT PAGES 8 THROUGH 11 OF HIS REBUTTAL TESTIMONY, DR. MORIN DISCUSSES SUBJECTIVITY IN THE DETERMINATION OF A DCF COST OF EQUITY CAPITAL. WHAT IS YOUR RESPONSE?

A. The determination of the cost of equity capital through economic models of investor behavior such as the DCF or CAPM is a subjective process—period. If it were not, the Commission would have no need of Dr. Morin, Mr. Gorman or me, as it could simply plug a few numbers into an algebraic formula and be done with it. Unfortunately for the Commission, such is not the case.

With regard to the determination of a DCF growth rate, there is substantial subjectivity in making the choice to exclude all published growth rate information available to investors except per share earnings growth projections (Dr. Morin's methodology). There is also subjectivity involved in reviewing significantly more data, both past and projected, for each company in order to determine a reasonable long-term sustainable growth rate expectation (my methodology). However, it is my firm belief that the latter methodology, relying on more data available to investors, provides a more reliable estimate of the long-term growth called for in the DCF and, thus, superior estimates of the cost of equity. Dr. Morin's concern here, again, runs counter to the logic that a cost of equity analysis should rely on more than one equity cost methodology because more information provides a better decision. All DCF growth rate

determinations are subjective, but the more reliable determinations rely on more data, not less.

As I noted in my Rebuttal Testimony, sell-side earnings growth rate projections of the type Dr. Morin has used exclusively in his DCF analysis in this proceeding are likely to overstate the growth rate that investors expect over the long-term. (Hill Rebuttal Testimony, p. 27) Moreover, many of those 5-year projected earnings growth rates used by Dr. Morin in his DCF analysis substantially exceed the long-term expected growth in the U.S. economy (GDP), which is most unlikely to be a long-term expectation for investors. His selection of those growth rates constitutes a subjective choice for which Dr. Morin offers no rationale. Also, Dr. Morin, himself, has stated that in a regulatory setting cost of equity capital estimation methods such as the DCF cannot be undertaken as a purely objective mechanical exercise, merely plugging numbers into a formula:

> [Cost of equity capital] [e]stimation methods cannot be applied in a robotic, mechanistic manner. Mechanical approaches designed to simply insert numbers into an algebraic equation without regard to he reasonableness of such inputs in a regulatory setting must be avoided. For example, the determination of expected growth is judgmental, since expected growth lies buried in the minds of investors, unobservable. Any inconsistency between historically based growth estimates, analysts' growth forecasts, and sustainable growth estimates should be explainable by objective commons-sense reasoning. (Morin, R., New Regulatory Finance, Public Utilities Reports, Vienna, VA, 2006, p. 443)

Therefore, while Dr. Morin expresses concern in his Rebuttal Testimony in this case that my DCF growth rate analysis may not be replicable in a mechanical "plug and play" fashion, he warns in his published work against relying on the type of analysis that merely plugs numbers into an algebraic formula—precisely the type of analysis he has used in developing his DCF equity cost estimate in this proceeding.

Q. AT PAGES 12 OF HIS REBUTTAL TESTIMONY, DR. MORIN CLAIMS THAT A SUSTAINABLE GROWTH (b x r) METHODOLOGY (ONE OF THE METHODS YOU USE TO DETERMINE THE DCF GROWTH RATE) IS UNRELIABLE BECAUSE IT IS "LOGICALLY CIRCULAR." IS THAT CORRECT?

A. No. Because a sustainable growth rate analysis uses projected accounting returns (returns on book value, ROEs) to estimate the current market-based cost of equity does not imply circularity in the process. As I noted in my Rebuttal Testimony, Dr. Morin has relied for authority on Brealey and Meyer's and their widely-published finance texts. Those authors provide an example of the use of a "b x r" methodology as a methodology to estimate the expected growth rate in a DCF analysis, although their term for "b" (the retention rate) is "the plowback ratio." While Dr. Morin appears concerned about the use of expected returns on book value to assist in estimating the cost of equity (supposedly the "logically circular" part of the analysis), Brealey and Meyers do not share that concern:

> An alternative approach to estimating long-term growth starts with the **payout ratio**, the ratio of dividend to earnings per share (EPS). For Cascade [a gas distributor], this was forecasted at 66 percent. In other words, each year the company was plowing back into the business about 44 percent of earnings per share:
>
> Plowback ratio = 1-payout ratio = 1-(DIV/EPS) =1-.66 = .44
>
> Also, Cascade's ratio of earnings per share to book equity per share was about 12 percent. This is its **return on equity**, or **ROE**:
>
> Return on equity = ROE = EPS/(book equity/share) = .12
>
> If Cascade earns 12 percent of book equity and reinvests 44 percent of income, then book equity will increase by .44 x .12 = .053 or 5.3 percent. Earnings and dividends per share will also increase by 5.3 percent:
>
> Dividend growth = g = plowback ratio x ROE =.44x.12 = .053

> That gives a second estimate of the market capitalization rate:
>
> $$r = DIV_1/P_1 + g = .046 + .053 = .099, \text{ or } 9.9\%$$
>
> (Brealey, R., Meyers, S., Allen, F., Principles of Corporate Finance, 8th Ed., McGraw-Hill/Irwin, New York, NY, 2006, p. 67)

Here, an authority on which Dr. Morin relies, uses an expected return on book value of 12% and an expected retention ratio (plowback ratio) of 0.44 to derive an investor expected growth rate for the DCF of 5.3%—the same methodology that Dr. Morin professes to be unreliable in my testimony. Also, Brealey and Meyers are not conflicted by the fact that the utility is expected to earn a return on book value of 12% and has a cost of equity of 9.9%.

Q. ARE THERE OTHER COMMENTS MADE BY DR. MORIN REGARDING A SUSTAINABLE GROWTH RATE ANALYSIS THAT YOU WISH TO ADDRESS?

A. Yes. First, Dr. Morin substantially overstates the case against a sustainable growth rate analysis when he states in his Rebuttal Testimony at page 12 that the "empirical finance literature demonstrates" that sustainable growth is a poor explanatory variable for market value. The literature to which Dr. Morin refers studies simple historical averages of sustainable growth and found that measure of growth was not as well correlated with stock price-earnings ratios as analysts' earnings growth projections. However, Dr. Morin is arguing against a methodology I have not employed—I have not used a simple historical average of sustainable growth rates as my DCF growth rate in this or any cost of capital analysis. My growth rate analysis reviews a variety of available data, which includes some historical data but also examines trends in those data and also includes the consideration of projected earnings, dividends, book value and sustainable growth rates for each company under review. Therefore, Dr. Morin, in referencing the findings of the financial literature regarding sustainable growth is criticizing a methodology I have not utilized.

Second, Dr, Morin offers a formula by which one can convert the book equity return published by Value Line (the ROE) from a value based on year-end book value to a value based on average book value, which, when book value is increasing, will produce a higher ROE value. Dr. Morin opines, without providing supporting calculations, that such a calculation would increase DCF results by 10 to 20 basis points. While such a calculation could be employed, there is no indication that investors elect to alter published Value Line data in the manner suggested by Dr. Morin, and he has provided no evidence that such is the case. In addition, Value Line also publishes a parameter termed "% retained to common equity," which is defined as net income less dividends expressed as a percentage of common equity.[5] That is simply a different way to calculate a sustainable growth rate; however, Value Line does not make the sort of adjustment suggested by Dr. Morin in calculating that parameter. If we assume that investors rely on Value Line data, and, thus, Value Line data are representative of investor opinion, then, in attempting to gauge investor opinion, it is reasonable to use those data as published. Dr. Morin's suggested formulaic adjustment to the calculation of sustainable growth would not represent investor opinion and, in my view, would lead to overstated DCF equity cost estimates.

Q. AT PAGES 15 AND 16 OF HIS REBUTTAL TESTIMONY, DR. MORIN REITERATES HIS SUPPORT FOR THE USE OF PROJECTED EARNINGS GROWTH RATES, WHAT IS YOUR RESPONSE?

A. Once again, in his support for the use of analysts' earnings growth projections as the sole measure of DCF growth rate, Dr. Morin references studies that compare analysts' projected earnings growth rates to purely historical averages of other growth rate parameters and find that projected earnings are better correlated with stock prices. If I based my DCF growth rate analysis solely on historical growth in earnings, dividends or book value, Dr. Morin's criticism would have some grounding. However, my DCF growth rate analysis is much broader than a review of simple historical growth rates. I

[5] The Value Line Investment Survey, A Subscriber's Guide, 1985, New York, NY, p. 60.

also review projected earnings growth from several sources as well as projected dividend, book value and long-term sustainable growth in determining a DCF growth rate. As a result, and as shown on page 2 of Schedule 5 attached to my Direct Testimony, my DCF growth rate recommendation is nearly 300 basis points higher than Value Line's historical growth rate averages for the electric utility companies I analyze. Therefore, Dr. Morin's reference to studies that compare earnings projections to purely historical growth rate averages does not represent a credible critique of my DCF growth rate analysis.

Finally on this point, while the studies referenced by Dr. Morin show that projected earnings are better correlated to stock prices than simple historical average growth rates, those studies do not show (nor do they purport to show) that analysts' projected earnings are the *only* growth rate indicator used by investors. Nevertheless, Dr. Morin appears to rely on those studies to support his use of analysts' projected earnings growth as the only growth rate measure investors consider in a DCF analysis. That is simply not a logical assumption. If the only growth rate used by investors was projected earnings per share, why would Value Line even bother to publish projected growth rates in dividends and book value or projected sustainable growth rates? It is much more reasonable to believe that investors rely on more information rather than less in assessing the long-term future growth rate of the stock they buy, and Dr. Morin's adherence to only projected earnings growth serves to overstate his DCF estimates. As I noted at page 27 of my Rebuttal Testimony other studies have shown the sell-side analysts tend to overstate earnings growth rate projections and DCF estimates based solely on earnings growth are likely to overstate the true cost of equity capital.

Q. AT PAGES 17 THROUGH 19 OF HIS REBUTTAL TESTIMONY, DR. MORIN TAKES ISSUE WITH YOUR USE OF A MODIFIED EARNINGS PRICE RATIO ANALYSIS TO ESTIMATE THE COST OF EQUITY IN THIS PROCEEDING. HOW DO YOU RESPOND?

A. First, Dr. Morin is incorrect to imply that the earnings price ratio is not a currently recognized method of estimating the cost of equity capital. Dr. Morin, himself, includes

in his most current text on the cost of capital, a section describing the Earnings Price Ratio as a method to estimate the cost of equity capital. At page 260 of New Regulatory Finance, Dr. Morin states, "Another method to estimate the cost of equity is the Earnings/Price Ratio." Moreover, he has included an explanatory section on the theory and calculation of an earnings price ratio analysis in each edition of his published work (1984, 1994 and 2006).

The earnings-price ratio is also discussed as a method used to estimate the cost of capital in modern finance texts. Brealey and Meyer's latest finance textbook, published in 2006, discusses the earnings-price ratio as a measure of the cost of capital, noting that the cost of capital for a growing firm can be estimated by the earnings-price ratio as long as that firm can re-invest its earnings at the cost of capital.[6] Those authors also note that in situations where the firm can re-invest its earnings at a return greater than the cost of capital the present value of growth opportunities (PVGO) will be positive and the earnings-price ratio will understate the cost of equity. For utilities, that situation is analogous to the utility earning a return greater than its cost of capital (causing the market price to rise above book value), which also causes the earnings-price ratio to understate the cost of equity.

Brealey and Meyers also state that when PVGO is negative (i.e., the firm is expected to re-invest at a return below the cost of capital) the earnings-price ratio will overstate the cost of capital. Therefore, a recent, widely-used finance text, cited for authority by Dr. Morin, not only indicates the earnings-price ratio is an indicator of the cost of equity capital, it also confirms the logic on which the modified earnings price ratio is based, i.e., when market prices are above book value (and utilities are expected to earn returns above the cost of equity capital) the simple ratio of earnings to stock price will understate and the expected ROE will overstate the cost of equity. The average of those two parameters, therefore, provides a corroborative estimate of the cost of equity

[6] Brealey, R., Meyers, S., Allen, F., Principles of Corporate Finance, 8th Ed., McGraw-Hill/Irwin, New York, NY, 2006, pp. 72-75.

capital quite independent from the DCF or CAPM, again, as demonstrated in Table A on page 42 of my Direct Testimony and Schedule 9 attached to that testimony.

In addition, as I noted in my Direct Testimony at page 40 the Federal Energy Regulatory Commission (FERC) has used the earnings price ratio as a method to corroborate its generic estimate of the cost of equity capital for electric utilities. Also in my Rebuttal Testimony in this proceeding at page 30, I reference a survey of utility regulators in the U.S. and Canada by the National Association of Regulatory Utility Commissioners (NARUC), which indicates that the earnings-price ratio is a methodology considered in determining the cost of capital in utility rate proceedings.

Second. Dr. Morin is incorrect to indicate that the simple earnings price ratio (the projected earnings per share divided by the price per share) produces the same result as the modified earnings price ratio analysis I use in my testimony. Although the modified earnings price ratio (MEPR) uses the standard earnings price ratio as one portion of the analysis, the MEPR also employs the projected return on book equity as a balancing measure to ensure that the MEPR equity cost estimate produced will provide a more accurate quantification of the cost of equity capital. The fact hat the MEPR provides a more accurate estimate of the cost of equity capital is shown in Table A at page 42 of my Direct Testimony. The MEPR, which averages an earnings-price ratio with a projected return on book equity is a more accurate indicator of the cost of equity capital, and Dr. Morin's testimony equating the MEPR with a simple ratio of earnings and price is incorrect.

Third, Dr. Morin incorrectly states that the earnings price ratio analysis is equivalent to the DCF and, therefore, not a corroborative equity cost estimation methodology. While it is true that, with certain assumptions, the DCF can be made to look like an earnings-price ratio, that theoretical condition does not exist in reality and the earnings-price ratio is not equivalent to the DCF. For example, if one assumes that a firm pays out 100 percent of its earnings in dividends (E = D) and investors expect that dividends for that firm will never increase (g = 0), then the standard DCF (D/P + g) will be reduced to the earnings price ratio (E/P). However, that is not the condition for any

publicly-traded utility company in the market today and Dr. Morin's statements indicating the earnings-price ratio is no different than the DCF are incorrect.

Finally on this point, Dr. Morin's theoretical critique of the earnings-price ratio applies to only one portion of my MEPR analysis, not the entire analysis. Therefore, if it formed a rational rebuttal to the earnings-price ratio (which, for reasons stated above, it does not), it would not serve as a reliable critique to my MEPR analysis. The MEPR analysis averages projected earnings-price ratios with near-term and long-term projected accounting returns (ROEs). Again, Dr. Morin's theoretical concerns regarding the earnings-price ratio are not applicable to the MEPR analysis used as a corroborating equity cost estimation technique in my testimony in this proceeding.

Q. AT PAGE 19 OF HIS REBUTAL, DR. MORIN TESTIFIES THAT THE MARKET-TO-BOOK (MTB) ANALYSIS IS NOT AN APPROPRIATE CHECK OF THE DCF. DO YOU AGREE?

A. No. As I note in my Direct Testimony, the MTB analysis uses different data than the DCF analysis and serves as a reliable check of that methodology. Also, as Dr. Morin states on pages 360 and 361 of his most recent text:

> From Equation 12-6, and under the auspices of the DCF model, it is clear that the market-to-book, or P_0/B, will be unity if r [the earned return] = K [the cost of equity], greater than unity if r > K, and less than unity if r < K:
>
> $$\begin{matrix} > & > \\ M/B = 1.0 \text{ as } r = K \\ < & < \end{matrix}$$
>
> Solving Equation 12-6 for K, a basic measure of cost of equity adjusted for the prevailing M/B ratio can be obtained:
>
> $$K = r(1-b)/(M/B) + br \qquad (12\text{-}7)$$
>
> In words, Equation 12-7 demonstrates that finding a cost of equity that is reconcilable to the book return on common equity requires that the latter be increased or decreased by

> the M/B ratio in proportion to the fraction of earnings distributed as dividends. Equation 12-7, derived within the confines of the DCF model, provides a method of finding the cost of equity that is consistent with the observed M/B ratio. (Morin, R. New Regulatory Finance, 2006, Public Utilities Reports, Vienna, VA, pp. 360, 361)

If we compare Equation 12-7 from Dr. Morin's text to the equation for the MTB analysis shown on page 38 of my Direct Testimony (my Equation 9) we see that, save for different letters that mean the same thing ("k" instead of "K", P for market price instead of "M", and "br+sv" for the growth rate instead of "br") the equations are equivalent. Therefore, the MTB analysis finds a cost of equity in a different manner than the standard DCF and, as I noted above, provides useful corroborative data.

Two other points regarding the cited portion of Dr. Morin's text require comment. First, Dr. Morin's text presents the long-understood tenet of the DCF method first propounded by Professor Myron Gordon (the originator of the DCF), namely, that if a utility's expected return on equity (ROE, "r") is equivalent to investors' required return (the cost of capital, "K"), the market price will approximate book value (M/B ≈ 1.0). Also, if market prices are above book value (M/B > 1.0) the expected ROE's exceed the cost of equity capital (r > K). This relationship indicates that with an average projected ROE for electric utilities similar in risk to AmerenUE of 10.29% in the 2001-2013 period, and market to book ratios that are currently above 1.0[7], it is not reasonable to believe that the cost of equity capital is *higher* than 10.26%, as Dr. Morin contends. According that standard DCF theorem, my equity cost estimate of 9.5%, which is below the expected ROE for the similar-risk sample group, is more reasonable and comports with the theory.

Second, Dr. Morin takes the position in his Rebuttal Testimony that a MTB analysis is equivalent to the DCF analysis, producing the same results and is, therefore, not an appropriate check. However, Dr. Morin's text cited above indicates that the MTB provides an estimate of the cost of equity that is "consistent" with the observed

[7] See Hill Direct, Exhibit__(SGH-1), Schedules 5, p. 1 and 10.

market-to-book ratio. This, in turn, conflicts with Dr. Morin's position on the efficacy of the DCF and market-to-book ratios, which holds that market prices above (below) book value cause the DCF to understate (overstate) the cost of equity. Yet, he believes the MTB analysis—which specifically accounts for the market-to-book ratio—yields the same results as the DCF. Dr. Morin cannot have it both ways. The MTB analysis is a reliable check of the DCF analysis using different inputs and Dr. Morin's claim that the DCF analysis provides incorrect estimates of the cost of equity when market prices are different from book value is not a supportable position.

Q. AT PAGE 20 OF HIS REBUTTAL TESTIMONY, DR. MORIN DISCUSSES YOUR USE OF WHAT HE CALLS A "PLAIN VANILLA" CAPM. TO WHAT IS HE MAKING REFERENCE?

A. Dr. Morin has elected to refer to the standard Capital Asset Pricing Model I use in my testimony, and that is widely used in finance and in regulation, as the "plain vanilla" version of the model, apparently as a pejorative in an attempt to support the use of a different, empirical version of the CAPM, the E-CAPM. If the same beta coefficients are used for both models, the E-CAPM produces a higher equity cost estimate for utilities than does the "plain vanilla" CAPM. Dr. Morin fails to note that he also uses a "plain vanilla" CAPM in his testimony.

The research on which the E-CAPM rests indicates that beta coefficients for traditionally low-beta stocks should be higher than calculations would indicate, and that research is based on unadjusted, or "raw" betas. Therefore, if Dr. Morin elected to use "raw" betas in an E-CAPM analysis, that would be consistent with the body of research he cites. However, the beta coefficients published in Value Line, on which both Dr. Morin and I rely for our "plain vanilla" CAPMs, are not "raw" betas, but are "adjusted" betas. In calculating the "adjusted" betas published by Value Line, "raw" betas below 1.0 are adjusted upward. Therefore, the use of Value Line's "adjusted" betas in an E-CAPM analysis, which is apparently now Dr. Morin's preferred version of the

model, is theoretically incorrect and would serve only to overstate the equity cost estimate produced.

Q. AT PAGE 25 OF HIS REBUTTAL TESTIMONY, DR. MORIN INDICATES THAT YOU HAVE "IMPROPERLY" USED A "GEOMETRIC MEAN" MARKET RISK PREMIUM IN YOUR CAPM ANALYSIS. IS THE USE OF A GEOMETRIC MEAN IMPROPER?

A. No. There are two ways to average historical return data: arithmetic averages and geometric averages. An arithmetic average sums the returns realized in each year and divides by the number of years. The geometric mean calculates the compound rate of growth that actually occurred between the start of the historical period and the end of it. As I discuss in pages 10 through 14 of my Rebuttal Testimony, there is theoretical support in the financial literature for the use of both averages. My CAPM analysis employs both types of averages and selects the mid-point result at the CAPM indication (see Hill Direct, Exhibit__(SGH-1), Schedule 8. Dr. Morin's claim that consideration of a geometric average of historical returns is "improper" is incorrect.

Dr. Morin does correctly note that in addition to the arithmetic and geometric averages of historical data provided by Morningstar, I also make reference to the mid-point of the recommended range of long-term market risk premiums published recently by Brealey and Meyers, 5.3%. That figure, 5.3% is the mid-point of a reasonable range of market risk premiums that are based on arithmetic averages (which are preferred by Brealey and Meyers), and which is very similar to Morningstar's 5.0% geometric-average market risk premium. The Brealey and Meyers market risk premium confirms that the consideration of the Morningstar geometric average market risk premium in determining a CAPM cost of equity is a reasonable procedure that will provide a reliable indication of investor expectations.

Q. DR. MORIN, AT PAGE 26 OF HIS REBUTTAL TESTIMONY INDICATES THAT THE MORNINGSTAR HISTORICAL ARITHMETIC MARKET RISK PREMIUM

USED IN A CAPM SHOULD BE HIGHER THAN 6.5%. HAVE YOU ADDRESSED THIS ISSUE IN YOUR REBUTTAL TESTIMONY?

A. Yes, at pages 7 and 8 of my Rebuttal Testimony, I point out that the 6.5% historical arithmetic average market risk premium is the difference between the return on stocks and the return on bonds. Dr. Morin's support for a higher value, 7.1%, is based on the difference between the return on stocks and contemporaneous bond yields (not returns). As I note in Rebuttal Testimony, that comparison juxtaposes two different return measures, and the comparison of stock returns and bond returns (similar measures) produces a more reliable indication of investor expectations regarding return differences between stocks and bonds (the market risk premium)—6.5%. Moreover, if one were to compare stock yields to bond yields (which neither Morningstar nor Dr. Morin has done) the likely market risk premium result would be much lower. As I noted at page 29 of my Direct Testimony, in 2003 Fama and French published a paper examining the difference in stock and bond yields.[8] The difference, the market risk premium based on yields, ranged from 2.6% to 4.3%.

Q. DR. MORIN INDICATES, AT PAGES 27 THROUGH 30 OF HIS REBUTTAL TESTIMONY, THAT CURRENT RESEARCH IN THE FINANCIAL LITERATURE DOES NOT INDICATE THAT CURRENT MARKET RISK PREMIUM EXPECTATIONS ARE LOWER THAN INDICATED BY MORNINGSTAR HISTORICAL DATA AND, IN FACT, SUPPORT HIS MARKET RISK PREMIUM ESTIMATE. IS THAT CORRECT?

A. No. As I discussed in detail in my Direct Testimony at pages 25 through 31 the market risk premium has been a premier area of study in recent years, and the overall conclusion of that research is that the market risk premium (the expected return difference between stocks and bonds) is substantially lower than what is indicated by simple averages of historical data. While I discuss below the points raised on this topic in Dr. Morin's

[8] Fama, E., French, K., "The Equity Premium," *The Journal of Finance*, Vol. LVII, No. 2, April 2003, pp. 637-659.

Rebuttal Testimony, it is important to point out that, contrary to his implication, the research I cite is not "cherry-picked" to produce any particular result. The research I cite is from prominent, widely-respected scholars, most of who are also cited in Dr. Morin's 2006 text. Moreover, the large body of current research has led the authors of perhaps the most widely-used college-level textbook on corporate finance (Brealey and Meyers, 2006) to conclude that a reasonable range for long-term market risk premium (i.e., that which should be coupled to long-term Treasury bond yields), ranges from 3.6% to 6.8%, the mid-point of which is 5.3%. In stark contrast, the market risk premium used by Dr. Morin, 7.4%, is above the uppermost end of the current reasonable range published by Brealey and Meyers and a full 200 basis points above the mid-point of that range.

Q. AT PAGE 28 OF HIS REBUTTAL TESTIMONY, DR. MORIN INDICATES THAT BREALEY and MEYERS SHOW THAT STOCK RETURNS ARE EXPECTED TO BE 7.6% ABOVE SHORT-TERM T-BILL RETURNS. DOES THAT SUPPORT THE 7.4% MARKET RISK PREMIUM DR. MORIN USED IN HIS CAPM ANALYSIS?

A. No. Dr. Morin's does not use market risk premiums based on short-term T-Bills in his CAPM analysis, he uses market risk premiums based on long-term T-Bonds. Market risk premiums based on returns differences between stocks and T-Bills are larger than those based on return differences between stocks and T-Bonds because the returns on T-Bills are lower than the returns on T-Bonds. Therefore, the appropriate comparison to Dr. Morin's 7.4% risk premium is that recommended by Brealey and Meyers is as I described it above. Dr. Morin's T-Bond-based market risk premium of 7.4% is more than two hundred basis points higher than the mid-point of Brealey and Meyers' T-Bond-based market risk premium range of 5.3%.

Dr. Morin's allusion to Brealey and Meyer's T-Bill-based market risk premium of 7.6% as apparent support for the very large risk premium he used in his CAPM confuses the issue. Moreover, using Brealey and Meyers' T-Bill-based market risk premium of 7.6% shows that Dr. Morin's CAPM significantly overstates the current cost of capital

for AmerenUE. The current T-Bill rate is approximately 0.5%.[9] Assuming a market beta of 1.0, and adding Brealey and Meyer's T-Bill-based market risk premium of 7.6% to the current T-Bill yield produces a CAPM cost of equity estimate for the broad stock market of 8.1% [0.5% + 1.0 x 7.6%]. That result is several hundred basis points below Dr. Morin's CAPM estimate for AmerenUE, which, of course, is less risky than the market in general. This shows that 1) the 7.6% Brealey and Meyer's market risk premium cited by Dr. Morin does not support the market risk premium used in his analysis and 2) Dr. Morin's equity cost estimates are substantially overstated, and 3) the current cost of capital in the market is lower than it was prior to the recent market re-alignment.

Q. AT PAGE 28 OF HIS TESTIMONY, DR. MORIN DISCUSSES THE RESEARCH OF DIMSON, MARCH AND STAUNTON. WHAT ARE YOUR COMMENTS?

A. With regard to the Dimson, Marsh, and Staunton papers[10], Dr. Morin extracts some numbers from the document and claims that the publication supports the market risk premium on which he relies in his testimony. That claim is incorrect.

Perhaps that is most clearly shown in the "update" of their paper referenced in Dr. Morin's Rebuttal Testimony. First, the title of the paper offers a clue as to direction in which the market risk premium has headed since their original research. The title, "The Worldwide Equity Risk Premium: A Smaller Puzzle," indicates that their updated research shows that expected market risk premiums are lower now than when their original work was published. That is, there is "a smaller puzzle" because there is a differential between the investor-expected return on stocks and the investor-expected return on bonds. Second, the authors' more recent conclusion regarding the expected market risk premium speaks for itself:

[9] Value Line, *Selection & Opinion*, October 24, 2008, p. 3877.

[10] Dimson, March, Staunton, "Risk and Return in the 20th and 21st Centuries," *Business Strategy Review*, 2000, Volume 11, Issue 2, pp. 1-18, Dimson, Marsh, Staunton, "the Worldwide Equity Risk Premium, A Smaller Puzzle," Journal of Economic Literature, April 2006.

> We report the historical equity premium for each market in local currency and US dollars, and decompose the premium into dividend growth, multiple expansion, the dividend yield, and changes in the real exchange rate. We infer that investors expect a premium on the world index of around 3-3.5% on a geometric mean basis, or approximately 4.5–5% on an arithmetic basis."(Dimson, Marsh, Staunton, "the Worldwide Equity Risk Premium, A Smaller Puzzle," Journal of Economic Literature, April 2006, p. 1)

Dr. Morin selects other information from the paper and implies that the recent research of Dimson, et al, support his 7.4% market risk premium. It clearly does not, because that updated research by Dimson, et al, cited by Dr. Morin, indicates an investor-expected return on stocks that ranges from 3% to 5% above risk-free bonds, well below the 7.4% differential employed in Dr. Morin's CAPM analyses.

Q. AT PAGE 29 OF HIS REBUTTAL TESTIMONY, DR. MORIN EXPRESSES CONCERN THAT SEIGEL'S VERY LONG-TERM HISTORICAL RISK PREMIUM STUDY IS NOT RELIABLE. HOW DO YOU RESPOND?

A. Dr. Morin expresses concern that market return data prior to 1926 (the beginning of the Morningstar data set), which consisted mostly of banks and railroads, is not reliable and would diminish the value of the very long-term study by Seigel that I cite. The Seigel study shows that the market risk premium has recently returned to much lower levels that existed in the late 19th and early 20th Centuries, after ballooning during the time period that Morningstar studies.[11]

Simply because the economy was comprised of different types of companies in the early 20th Century than it is today, does not mean that investors' market return experience was substantially different. Dr. Morin has not made the case that investor experience was significantly different during that time. In fact, the research shows that it was remarkably consistent. [12] Also, the U.S. economy has changed dramatically during

[11] Seigel, J., Stocks for the Long Run, A Guide to Selecting Markets for Long-term Growth (Irwin Professional Publishing, Chicago, IL, 1994, pp. 11-15.

[12] Schwert, W.G., "index of U.S. Stock Prices from 1802 to 1987," *Journal of Business*, 1990, Vol. 63, no. 3.

the 1926-2007 period studied by Morningstar. The heavily industrialized economy of the 1930s depression era is markedly different from the computer chip/service industry economy of today—but Dr. Morin is apparently not concerned about those differences. The Seigel data provide another reliable insight into investors' market risk premium expectations.

Q. DR. MORIN RAISES CONCERNS REGARDING GRAHAM and HARVEY'S SURVEY OF CORPORATE FINANCIAL OFFICERS AT PAGES 29 AND 30 OF HIS REBUTTAL TESTIMONY. DO YOU HAVE A RESPONSE?

A. In his rebuttal to the Duke University professors' research, Dr. Morin offers the concern that surveys are biased, which contributes to their unreliability. Here is how Graham and Harvey respond to that criticism:

> The quarterly survey of CFOs was initiated in the third quarter of 1996. [footnote omitted] Every quarter, Duke University polls financial officers with a short survey on important topical issues (Graham and Harvey, 2006). The usual response rate for the quarterly survey is 5%-8%.
> …
> The response rate of 5-8% could potentially lead to a non-response bias. There are four reasons why we are not overly concerned with the response rate. First, our response rate is within the range that is documented in many other survey studies. Second, Graham and Harvey (2001) conduct a standard test for non-response biases (which involves comparing the result of those that fill out the survey early to the ones that fill it out late) and find no evidence of bias. Third, Brav, Graham, Harvey, and Michaely (2005) conduct a captured sample survey at a national conference in addition to an Internet survey. The captured responses (to which over two-thirds participated) are qualitatively identical to those for the Internet survey (to which 8% responded), indicating that non-response bias does not significantly affect their results. Fourth, Brav et al. Contrast survey responses to archival data from Compustat and find archival evidence for the universe of Compustat forms that is consistent with the responses from the survey sample. (Graham, J., Harvey, C., "The Equity Risk Premium in January 2007: Evidence from the Global CFO Outlook Survey, pp. 1, 2)

The Graham and Harvey survey shows that knowledgeable corporate financial managers currently believe that the market risk premium is only 3.2% above 10-year Treasury bonds (the result of Graham and Harvey's most recent survey, published in January 2007). This finding is in line with the research of Dimson, et al, cited above and offers further confirmation that Dr. Morin's market risk premium and, thus, his CAPM equity cost estimates significantly overstate the current cost of equity capital for AmerenUE.

Q. AT PAGE 30 OF HIS REBUTTAL TESTIMONY, DR. MORIN PROVIDES A QUOTE FROM MEHRA (THE AUTHOR OF THE "RISK PREMIUM PUZZLE)," INDICATING THAT THAT AUTHOR'S OPINIONS ARE NOW DIFFERENT AND THAT HISTORICAL AVERAGE RETURNS ARE A REASONABLE GUIDE TO INVESTOR EXPECTATIONS. WHAT ARE YOUR COMMENTS?

A. First, Dr. Morin incorrectly testifies that I cite only Mehra's 1985 paper on the risk premium "puzzle." I cite both the 1985 and the 2003 papers. Second, at page 30 of his Rebuttal Testimony, Dr. Morin cites what purports to be a concluding paragraph of the 2003 article by Mehra regarding the equity risk premium, however there is no cite provided. A review of the 2003 article reveals a different summary of the article than that presented by Dr. Morin. Why Dr. Morin would incorrectly cite the article is unclear. The actual final paragraph of the 2003 Mehra article I cited in my Direct Testimony is set out below:

> The data used to document the equity premium over the past 100 ears are as good an economic data set as analysts have, and a span of 100 years is a long series when it comes to economic data. Before the equity premium is dismissed, not only do researchers need to understand the observed phenomena, but they also need a plausible explanation as to why the future is likely to be any different from the past. In the absence of this explanation, and on the basis of what is currently known, I make the following claim: Over the long term, the equity premium is likely to be similar to what it has been in the past and returns to investment in equity will continue to substantially dominate returns to investment in T-bills for investors with

> a long planning horizon. (Mehra, R., "The Equity Premium: Why Is It a Puzzle?" Financial Analysts Journal, January/February 2003, p. 67)

Mehra points out that the data over the past 100 years provides a reliable estimate of the market risk premium unless we have "a plausible explanation why the future is likely to be any different from the past." In this regard, it is important to understand that the Morningstar database on which Dr. Morin elects to rely does not have 100 years of data, but the Dimson, et al, study I cite does use that data set. Importantly, the historical returns over that 100-year period are *lower* than those reported by Morningstar. Second, the plausible explanation as to why the future is likely to be different from the past is precisely what is discussed in the work of Dimson, Marsh and Staunton, which I cite in my Direct Testimony; and is summarized in Brealey and Meyers' most recent finance textbook. Therefore, Dr. Morin is certainly aware of explanations for why forward-looking market risk premiums are likely to be lower than long-term historical averages; however, he has apparently elected to overlook them.

Q. DO YOU HAVE ANY SUMMARY COMMENTS REGARDING THE MARKET RISK PREMIUM?

A. A very large body of research by widely-known and respected financial economists indicates that the market risk premium included in investors' current equity return expectations is considerably smaller than that indicated by the Morningstar historical data. A market risk premium of 5.3%, which is the middle of a reasonable range, combined with a current T-Bond yield of 4.2% indicates an expected return for the stock market of 9.5%. By that measure, my recommended return of 9.5% for AmerenUE is, perhaps, overstated.

Q. DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY, MR. HILL?

A. Yes, it does.

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of Union Electric Company 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-2008-0318

AFFIDAVIT OF STEPHEN G. HILL

STATE OF WEST VIRGINIA)
) ss.
COUNTY OF PUTNAM)

Stephen G. Hill, of lawful age, on his oath states: that he has participated in the preparation of the foregoing Surrebuttal Testimony in question and answer form, consisting of 31 pages to be presented in the above case; that the answers in the foregoing Surrebuttal Testimony were given by him; that he has knowledge of the matters set forth in such answers; and that such matters are true and correct to the best of his knowledge and belief.

Stephen G. Hill

Subscribed and sworn to before me this 3rd day of November, 2008.

Tammy N. Barthelmess
Notary Public

OFFICIAL SEAL
NOTARY PUBLIC
STATE OF WEST VIRGINIA
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My commission expires February 27, 2011