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REBUTTAL TESTIMONY

OF

ROGER A. MORIN

Before the Missouri Public Service Commission

On behalf of Union Electric Co.

d/b/a AmerenUE

Case No. ER-2008-0318

ROE Considerations

October 2008

TABLE OF CONTENTS

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I. INTRODUCTION

Q. Please state your name.

A. Dr. Roger A. Morin.

Q. Are you the same Dr. Roger A. Morin who provided prefiled direct testimony in this proceeding on behalf of Union Electric Company d/b/a AmerenUE ("UE," or "Company") in the State of Missouri?

A. Yes, I am.

Q. What is the purpose of your rebuttal testimony?

A. This rebuttal testimony responds to the direct rate of return testimonies of Mr. Stephen G. Hill, on behalf of the Staff of the Missouri Public Service Commission; Mr. Michael P. Gorman on behalf of Missouri Industrial Energy Consumers; and Ms. Billie Sue LaConte on behalf of the Missouri Energy Group.

Q. Can you describe how your Rebuttal Testimony is organized?

A. My rebuttal testimony is organized in three sections, corresponding to each of the aforementioned individuals.

Q. Please summarize the rate of return on common equity ("ROE") recommendations of the three witnesses you are rebutting in this case, along with your own.

A. The ROEs recommended by each witness in this case, including my own, are as follows:

	Range	Recommended ROE
Mr. Hill	9.00% - 9.75%	9.50%
Mr. Gorman	9.81% - 10.55%	10.20%
Ms. LaConte	10.10% - 10.60%	10.20%
Dr. Morin	10.30% - 11.40%	10.90%

My general reaction to these recommendations is that the upper end of both Mr. Gorman's (10.55%) and Ms. LaConte's (10.6%) recommended range are within 30-35 basis points of my own recommendation (10.9%), the major difference being the 30 basis points flotation cost allowance incorporated in my recommendation. Since Mr. Hill's recommendation is clearly the outlier in this case, and given that I agree with several, but not all, of Mr. Gorman's and Ms. LaConte's procedures and methodologies, I shall direct the majority of my rebuttal comments to Mr. Hill's testimony.

I was also surprised by the very low Staff recommendation in this case given that in a very recent Empire District Electric Company case (Case No. ER-2008-0093) Staff recommended a range of 9.72% - 10.80% with a midpoint of 10.26% for a company that I believe is slightly less risky than UE. As I show later, this very low Staff recommendation is far lower than any ROE recently granted for an electric utility by the Commission, and is far outside the allowed ROEs being allowed by regulatory commissions across the country.

Q. Do you agree with the various witnesses' capital structure recommendations in this proceeding?

A. All the witnesses in this proceeding agree with the ratemaking capital structure proposed by the Company in the direct testimony of Michael G. O'Bryan, which consists of 50.9% common equity capital. Mr. O'Bryan has corrected an error in his rebuttal testimony, which raises the common equity percentage to approximately 52%, and I support Mr. O'Bryan's capital structure, as corrected.

II. REBUTTAL OF MR. HILL'S TESTIMONY

Q. Please summarize the recommended ROE of Mr. Hill.

A. Mr. Hill recommends a ROE for UE of only 9.50%, which is slightly above the midpoint of Mr. Hill's range of 9.00% – 9.75%. Mr. Hill relies primarily on a Discounted Cash Flow ("DCF") analysis of a group of fourteen electric utilities. As summarized on page 23 of his direct testimony, the DCF study produces an estimated ROE of 9.28%. Mr. Hill performs three checks on its DCF estimate, based on the Modified Earnings Price, Market-to-Book ("M/B"), and Capital Asset Pricing Model ("CAPM") methodologies. Mr. Hill summarizes the results of these checks in table form on page 42 of his direct testimony. From these various analyses, Mr. Hill also concludes that the ROE for UE is 9.50%.

Q. Please summarize your specific criticisms of the ROE recommended by Mr. Hill.

A. The ROE recommended by Mr. Hill significantly understates an appropriate ROE for UE for the following reasons:

(i) Mr. Hill's Recommended ROE for UE is Outside of the

Mainstream for Electric Utilities. The ROE recommended by Mr. Hill for UE is well outside the range of currently authorized ROEs for electric utilities in the United States and the zone of currently authorized ROEs for Mr. Hill's own sample of comparable companies.

(ii) The Standard DCF Model Understates an Appropriate ROE for UE. Application of the standard DCF model to utility stocks understates the investor's expected return when the Market-to-Book ratio exceeds unity.

(iii) Mr. Hill Uses an Ambiguous and Arbitrary Growth Rate for Each Utility in His DCF Analysis. Mr. Hill's DCF estimates are unreliable because he has selected a growth rate for each company in his comparable group that is ambiguous, arbitrary and impossible to replicate.

(iv) Mr. Hill Erroneously Relies on Historical Growth Rates in His DCF Analysis. Mr. Hill understates his DCF estimates by erroneously using historical growth rates that have little relevance as proxies for future long-term growth forecasts in the DCF model.

(v) Mr. Hill Erroneously Relies on Dividend Growth Forecasts in His DCF Analysis. Mr. Hill understates his DCF estimates by improperly using dividend growth forecasts during a period in which energy utilities are expected to continue to lower their dividend payout ratio over the next several years.

(vi) Mr. Hill Improperly Uses Disguised Versions of the DCF as "Checks" on His DCF Analysis. Mr. Hill understates his recommend ROE for UE because the Modified Earnings Price Ratio and M/B methodologies are disguised versions of the DCF model and do not constitute independent stand-alone checks.

(vii) Mr. Hill Erroneously Relies Upon the Plain Vanilla Version of the CAPM. Mr. Hill erroneously relies upon the plain vanilla version of the CAPM—a model known to understate return requirements for low beta firms, such as UE.

(viii) Mr. Hill Improperly Uses the Geometric Mean Market Risk Premium ("MRP") Rather Than the Arithmetic Mean MRP in his CAPM Analysis. Mr. Hill understates his CAPM estimates because it improperly uses the geometric mean MRP rather than the arithmetic mean MRP.

(ix) Mr. Hill's Recommended ROE Improperly Ignores Flotation Costs. Mr. Hill understates his recommended ROE by

approximately 30 basis points because it does not allow for flotation costs and, as a result, leaves a legitimate expense unrecovered.

Correction of the above-described infirmities would likely increase the ROE recommended by Mr. Hill by at least 150 basis points, from a range of 9.0% – 9.75% to a range of 10.5% – 11.25%.

(i). MR. HILL'S RECOMMENDED ROE FOR UE IS OUTSIDE OF THE MAINSTREAM FOR ELECTRIC UTILITIES

Q. Dr. Morin, can you comment on recent decisions regarding allowed ROEs for vertically integrated electric utilities like AmerenUE?

A. Yes, I can. Allowed ROEs, although not a precise indication of a utility's cost of equity capital, are nevertheless important determinants of investor growth perceptions and investor expected returns. They also serve to provide some perspective on the validity and reasonableness of Mr. Hill's recommended ROE. Using Regulatory Research Associates (now SNL) reported data for ROE decisions rendered for the past twelve months ending in August 2008, the average allowed ROE for integrated electric utilities was 10.62% and 10.71% for the Midwest electric utilities. These ROE decisions are well in excess of Mr. Hill's recommended 9.50%.

Q. Is Mr. Hill's recommended ROE for UE consistent with the average authorized ROE of the electric utilities in Mr. Hill's comparable group?

A. No. The AUS Utility Reports survey for August 2008 reports that the average authorized ROE is 10.7% for the combination gas and electric industry and 10.9% for the overall electric utility industry. Each of the 62 authorized ROEs reported by AUS Utility Reports exceeds Mr. Hill's 9.5% recommendation. If we remove the less risky "wires" electric utilities from the AUS sample, the currently authorized returns are

substantially higher.

Moreover, Mr. Hill's recommended ROE for UE is below the authorized ROE of each electric utility in Mr. Hill's comparable group and far below the average authorized ROE of 10.5% for the same group, as shown on the table below. If we eliminate the "wires" companies Northeast Utilities and First Energy from the group, the average allowed ROE is 10.7%

Mr. Hill's Group of Electric Utilities

	Company Name	Allowed ROE
1	Central Vermont	10.71
2	FirstEnergy Corp.	9.75
3	Northeast Utilities	9.72
4	Ameren Corp.	10.29
5	American Elec Power	10.81
6	Cleco Corp	11.25
7	Empire Dist. Elec.	10.80
8	Entergy Corp.	10.83
9	Westar	10.00
10	Hawaiian Electric	10.82
11	IDA Corp	
12	Pinnacle West	10.75
13	Unisource Energy	10.34
14	Xcel Energy	10.83
	AVERAGE	**10.53**
	AVERAGE w/o Northeast Utilities	**10.60**

Source: AUS Utility Reports 09/2008

Although decisions of other regulatory bodies regarding authorized ROEs do not bind this Commission, one cannot overlook the significant difference between Mr. Hill's recommended ROE and the ROEs currently authorized for the electric utility industry,

notwithstanding the fact that UE faces greater risks than the average electric utility if for no other reason than the absence of a fuel adjustment clause.

Q. What ROE did Staff recommend in a recent Empire District Electric Company Case?

A. In Case No. ER-2008-0093, Staff recommended a ROE range of 9.72% - 10.80% with a midpoint of 10.26%, which is substantially higher than Mr. Hill's very low recommendation of 9.50%. Mr. Hill, who is testifying on behalf of Staff, did not provide any explanation for the substantial divergence of his opinion from Staff's testimony in the very recent Empire District case. and from the Commission's very recent Empire District decision on ROE (approving a 10.8% ROE), particularly given that the Empire District is slightly less risky than UE.

Q. Is Mr. Hill's ROE significantly lower than other ROEs approved by the Commission in recent cases?

A. Yes. Attached as Schedule RAM-RE9 is a chart depicting industry average ROEs, ROEs approved in recent Commission cases for all of Missouri's electric utilities, and ROEs recommended by all the ROE witnesses in this case. As the chart shows, Mr. Hill's recommendation is the clear outlier.

(ii). THE STANDARD DCF MODEL UNDERSTATES AN APPROPRIATE ROE FOR UE

Q. Do Mr. Hill's DCF results understate an appropriate ROE for UE?

A. Yes, Mr. Hill's DCF results understate the appropriate ROE for UE. Indeed, as I demonstrated on pages 23-24 of my direct testimony, the DCF model distorts the appropriate ROE for UE because application of the standard DCF model produces

estimates of common equity cost that are consistent with investors' expected return only when stock price and book value are reasonably similar, that is, when the Market-to-Book ("M/B") ratio is close to unity.

Application of the standard DCF model to utility stocks understates investors' expected returns when the M/B ratio of a given stock exceeds unity. This is particularly relevant in the current capital market environment in which utility stocks are trading at M/B ratios well above unity for the past two decades. The converse is also true—the DCF model overstates investors' expected return when the M/B ratio of a given stock is less than unity. The reason for this distortion is that the DCF market return is applied to a book value rate base by the regulatory body. In other words, the utility's earnings are limited to earnings on a book value rate base.

In short, Mr. Hill's DCF results understate the appropriate ROE for UE.

(iii) MR. HILL USES AN AMBIGUOUS AND ARBITRARY GROWTH RATE FOR EACH UTILITY IN HIS DCF ANALYSIS

Q. What specific DCF methodology does Mr. Hill use to estimate a ROE for UE equity?

A. Mr. Hill applies a DCF analysis to one sample of fourteen electric utilities. Mr. Hill bases the expected dividend yield component on a 6-week average stock price. For the growth component, Mr. Hill examines an array of growth rate estimates, including (i) historical and forecast sustainable growth rates, (ii) historical growth rates in book value, earnings, and dividends, (iii) Value Line growth forecasts, and (iv) the consensus growth forecasts reported in Zacks and IBES. This is shown on his Schedule 5 page 2. From these eleven growth proxies, Mr. Hill proceeds to select an arbitrary

growth rate for each company.

Adding the dividend yield component to the arbitrary growth component selected for each company, Mr. Hill produces a DCF estimate of 9.28% for the group of electric utilities.

Q. Did you attempt to replicate Mr. Hill's DCF analysis for a specific company to illustrate Mr. Hill's methodology?

A. Yes, but I was unable to replicate the analysis. Mr. Hill selected Ameren Corp. ("Ameren") as his "case study" to derive his DCF growth rate forecast and cites the following growth rate estimates for Ameren as reported on pages 18-21 and Schedule 5 page 2:

	Growth
5-yr historical sustainable	1.33%
2008 sustainable	1.72%
projected sustainable	2.70%
projected Book Value	3.00%
5-yr historical Book Value	5.50%
5-yr historical Dividend	0.00%
Projected dividend	0.00%
Projected earnings	3.50%
5-yr historical earnings	-1.50%
analyst IBES projection 1	4.00%
analyst Zacks projection 2	5.00%

On page 18 lines 18-19, Mr. Hill declares that he uses the five-year average sustainable growth rate of 1.3% for Ameren as a benchmark against which he measures the company's growth rate trends. Yet, from this array of growth rate estimates, Mr. Hill arbitrarily selects, with little formal substantiation, a DCF internal growth rate forecast of 3.5%. It is unclear how the benchmark of 1.3% squares with the final choice of a 3.5% internal growth rate.

Q. Were you able to determine how Mr. Hill arrives at a DCF growth rate forecast of 3.5% for Ameren?

A. No. The average of the growth rates displayed above for Ameren is 2.3%, the median is 2.7%, and the midpoint of the range is 2.0%. I was unable to replicate or decipher how Mr. Hill arrived at a 3.5% growth rate forecast from this vast list of growth rates. As shown below, the most meaningful growth proxies for electric utilities' growth rates are the analysts' growth projections in the range of 6.3% – 7.3% reported on Mr. Hill's Schedule 5 page 2.

Q. Were you able to determine how Mr. Hill arrives at a DCF estimate of 9.63% for Ameren?

A. No. On Schedule 7, Mr. Hill asserts that the DCF estimate of ROE for Ameren is 9.63%, the sum of a dividend yield of 5.59% plus a growth rate forecast of 4.04%. Mr. Hill derives the growth rate forecast of 4.04% directly from the last column of page 1 of Schedule 5, which computes the sustainable growth rate forecast ($g = br + sv$) for Ameren as the sum of a sustainable internal growth rate (3.50%) and a sustainable external growth rate (0.54%).

Q. How does Mr. Hill arrive at a sustainable internal growth rate of 3.50% and an external growth rate of 0.54% for Ameren?

A. It is unclear as to how Mr. Hill arrived at these two growth rates. The "internal growth" and "external growth" figures are presumably derived from the upper panel of page 2 of Schedule 4, under the labels "internal growth" and "external growth." The internal growth rate of 3.50% cannot be found anywhere on page 2 of Schedule 4. The sustainable internal growth rate of 3.50%, however, is contained within the

qualitative discussion of Ameren's sustainable growth rate in Mr. Hill's Appendix C-2 and is arbitrarily characterized as "reasonable".

In short, from a vast array of eleven growth rate estimates, Mr. Hill arbitrarily selects a growth rate forecast of 4.04% for Ameren with little quantitative support or academic empirical evidence as to the optimal growth rate proxy in the DCF model.

Q. Were you able to replicate Mr. Hill's growth rate forecasts for any of the companies contained in Schedule 7?

A. No. I was unable to replicate Mr. Hill's final choice of growth rate estimates of any utility in Mr. Hill's sample of electric utilities from the vast array of growth rate estimates provided in Schedule 5. The growth estimates simply appear out of thin air without scientific foundation, derivation or ability to replicate.

Q. What is the sustainable growth rate technique used by Mr. Hill to implement the DCF model?

A. Mr. Hill appears to rely heavily on the so-called sustainable (a.k.a. internal) growth method. *See* pages 18 and 20-21 and Schedules 4 and 5 in his direct testimony. In the sustainable growth method, the growth rate forecast is based on the equation g = b(ROE), where b is the percentage of earnings retained and ROE is the expected rate of return on book equity (ROE). Mr. Hill also accounts for the impact of external stock financing on growth by adding an external growth term (g = sv).

Q. Is the sustainable growth methodology an appropriate technique to implement the DCF model in this proceeding?

A. No. The sustainable growth methodology used by Mr. Hill in this proceeding contains a logical contradiction because the method requires an explicit

assumption on the ROE expected from the retained earnings that drive future growth. Mr. Hill bases his ROE estimate on (i) achieved returns on equity in the past five years 2003-2007 and (ii) Value Line forecast returns on equity for 2008, 2009, and the 2011-2013 period.

In brief, Mr. Hill's implementation of the sustainable growth method, to the extent relied upon, is logically circular because it *assumes* a ROE in a regulatory process that is *designed to estimate* the fair and reasonable ROE.

Q. Is the sustainable growth rate technique consistent with empirical evidence?

A. No. Empirical finance literature demonstrates that the sustainable growth rate technique is a very poor explanatory variable of market value and is not correlated significantly to measures of value, such as stock price and price/earnings ratios.

Q. Are the Value Line estimates of ROE and retention ratio representative of the market consensus?

A. No, not necessarily. Mr. Hill's exclusive reliance on Value Line forecasts of ROE and retention ratio runs the risk that such forecasts are not representative of investors' consensus forecast. Moreover, the forecasts of the expected ROE published by Value Line are based on end-of-period book equity rather than on average book equity. The following formula adjusts the reported end-of-year values so that they are based on average common equity, which is the common regulatory practice:

$$r_a = r_t \frac{2\,B_t}{B_t + B_{t-1}}$$

Where: r_a = return on average equity
r_t = return on year-end equity as reported
B_t = reported year-end book equity of the current year
B_{t-1} = reported year-end book equity of the previous year

See, e.g., Roger A. Morin, *The New Regulatory Finance*, chapter 9 (1st ed. 2006).

This one error alone – failing to use average common equity -- understates Mr. Hill's DCF estimates by approximately 10-20 basis points, depending on the magnitude of the book value growth rate forecast.

(iv) MR. HILL ERRONEOUSLY RELIES ON HISTORICAL GROWTH RATES IN HIS DCF ANALYSIS

Q. Please discuss the use of historical growth rates in applying the DCF model to energy utilities.

A. Although it is not clear as to what weight Mr. Hill accords historical growth rates given the arbitrary nature of his final choice of growth estimates, Mr. Hill considers historical growth rates in arriving at proxies for the DCF growth forecast component. It may be reasonable to assume that historical growth rates in dividends/earnings influence investors' assessment of the long-run growth rate forecast of future dividends/earnings if the company and industry are stable. Because of structural changes in the energy industry, however, historical growth rates have little relevance as proxies for long-term growth forecasts. Moreover, historical growth rates are largely redundant because such historical growth patterns are already incorporated in analysts' growth forecasts that should be used in the DCF model.

Q. What did Staff have to say on historical growth rates in the very recent Empire District Electric case?

A. In a recent Empire District Electric rate case just a few months ago, Staff

witness Matthew J. Barnes rejected historical growth rates and gave complete weight to the projected growth rates. I agree with this position. Moreover, Staff's DCF proxy group cost of common equity estimates was 9.28% to 10.43%. It is not clear as to why Mr. Hill's position on DCF growth rates in this case differs so markedly from Staff's position in a recent electric case.

(v). MR. HILL ERRONEOUSLY RELIES ON DIVIDEND GROWTH FORECASTS IN HIS DCF ANALYSIS

Q. Should the Value Line dividend growth forecasts be considered in applying the DCF model to electric utilities?

A. No. There are two serious problems with the use of Value Line dividend growth forecasts. First, heavy reliance on Value Line growth forecasts runs the risk that such forecasts are not representative of investors' consensus forecast. Second, it is inappropriate to use dividend growth forecasts of energy utilities at this time in the DCF model. The Value Line dividend growth forecasts are largely dominated by the anticipated dividend performance over the next few years and higher business risk. The intermediate growth rate in dividends cannot equal the long-term growth rate when the dividend payout ratio is expected to change because projected dividend growth and earnings growth must adjust to the changing payout ratio. This "problem" is not unique to analysts' earnings growth forecasts and is also inherent in the use of historical growth rates to forecast growth rates.

Reliance on "near-term" dividend growth is improper because it is expected that energy utilities will continue to lower their dividend payout ratio over the next several years in response to increased business risk. Therefore, earnings and dividends are not

expected to grow at the same rate in the future. Mr. Hill's own growth rate data on Schedule 6 Page 2 demonstrate this phenomenon because both historical and projected utility dividend growth rates are less than the earnings growth rate forecast. As discussed in my direct testimony, I used consensus analysts' earnings growth forecasts in the DCF model to mitigate potential bias—an approach supported by empirical literature.

Q. What does the published academic literature say on the subject of analysts' growth rate forecasts in the DCF model?

A. Published studies in the academic literature demonstrate that (i) analysts' growth rate forecasts are reasonable indicators of investor expectations and (ii) investors rely on such forecasts. Cragg and Malkiel present detailed empirical evidence that (i) the average analysts' growth rate forecast is a better predictor of investor expectations than are historical growth rates; (ii) the average analysts' growth rate forecast represents the best possible source of DCF growth rate forecasts; and (iii) historical growth rates do not contain any information not already included in analysts' growth rate forecasts.[1] Other studies confirm the superiority of analysts' growth rate forecasts over historical growth extrapolations.[2]

Q. What do you conclude from Mr. Hill's DCF growth rate analysis?

A. Although Mr. Hill reports and discusses historical growth rates and dividend growth rate forecasts, it is difficult to discern from the discussion of each company's growth rate to what extent, if any, Mr. Hill relies on historical growth rates

[1] Malkiel Burton & John Cragg, *Expectations and the Structure of Share Prices* (1982).
[2] James Vander Weide & Willard Carleton, "Investor Growth Expectations: Analysts vs. History," *The Journal of Portfolio Management* (Spring 1988); Stephen Timme & Peter Eisemann, "On the Use of Consensus Forecasts of Growth in the Constant Growth Model: The Case of Electric Utilities," *Financial Management* (Winter 1989).

and dividend growth rate forecasts reported by Value Line. To the extent Mr. Hill relies on either of historical growth rates and Value Line's dividend growth forecasts, he does so in error.

One would expect that averages of analysts' earnings growth forecasts, such as those contained in IBES, First Call, Reuters, or Zacks, are more reliable estimates of the investors' consensus expectations than either historical growth rates or one particular firm's dividend growth forecast. As discussed in my direct testimony, the empirical finance literature has demonstrated that consensus analysts' growth forecasts (i) are reflected in stock prices, (ii) possess a high explanatory power of equity values, and (iii) are used by investors.

Moreover, it is necessary to use earnings forecasts rather than dividend forecasts because of the extreme scarcity of dividend forecasts compared to the availability of earnings forecasts. Given the paucity and variability of dividend forecasts, use of dividend forecasts produces unreliable DCF results.

Use of the analyst growth forecasts (as used by Staff in the recent Empire case) would have generated an average growth rate forecast in the range of 6.3% - 7.3% for Mr. Hill's sample group of electric utilities[3], not the 5.0% average used, as shown on the last column of Mr. Hill's Schedule 7. Growth rate forecasts of 6.3% - 7.3% instead of 5.0% would raise Mr. Hill's DCF estimates from 9.28% to the 10.6% - 11.6% range (exclusive of flotation costs) and 10.9% - 11.9% range (inclusive of flotation costs) for

[3] See Hill Schedule 5 page 2. The average analysts' growth forecasts are 6.3% from Value Line, 7.3% from IBES, and 7.0% from Zacks.

his group of electric utilities.

(vi). MR. HILL IMPROPERLY USES DISGUISED VERSIONS OF THE DCF AS "CHECKS" ON HIS DCF ANALYSIS

Q. Does Mr. Hill employ a check on his DCF results?

A. Yes. As a check on his DCF results, Mr. Hill employs the Modified Earnings-Price Ratio method. According to this method, the return of earnings to shareholders is the cost to the company of equity funds, and the same rate of return must be earned on equity-financed assets to equal the cost rate.

Q. Is the Modified Earnings-Price Ratio method an appropriate check of DCF results?

A. No. The corporate finance literature in the 1960s extensively discussed the Earnings-Price Ratio methodology that lies at the root of Mr. Hill's Modified Earnings-Price Ratio method. Indeed, the Earnings-Price Ratio method enjoyed some brief notoriety in regulatory proceedings during that period.

Today, however, the Earnings-Price Ratio method has vanished from use because it produces unreliable results. In fact, the Earnings-Price Ratio method constitutes an accurate measure of the cost of equity (and collapses into the standard constant-growth DCF model) only under two very limited circumstances:

(1) the firm must pay all earnings out in dividends, and

(2) the firm must be an "ordinary" firm, (i.e., a company without profitable opportunities earning a return on new investments equal to the cost of equity).

Neither of these circumstances is present here, and therefore the Commission should reject Mr. Hill's Modified Earnings-Price Ratio. Furthermore, the Modified Earnings-

Price Ratio, like the retention growth method discussed above, is logically circular because it requires an assumed ROE, which is the very quantity the model is trying to estimate.

I am unaware of any financial witness or regulatory body that relies on this antiquated methodology.

Q. Is Mr. Hill's Modified Earnings Price Ratio methodology any different from the Earnings-Price Ratio methodology?

A. No, it is not. The two methodologies are equivalent. The relationship between the Earnings-Price Ratio and the Modified Earnings Price Ratio can easily be seen from Mr. Hill's testimony page 38 lines 17-23. Elton and Gruber (Modern Portfolio Theory and Investment Analysis (New York University, Wiley & Sons, New York, 1995, pp. 401-404) posit the following formula,

$$k = (1-b)E/(1-cb)P$$

where "k" is the cost of equity capital, "b" is the retention ratio, "E" is earnings, "P" is market price and "c" is the ratio of the expected return on equity to the cost of equity capital (ROE/k). Because the process of regulation sets the return on equity equal to the cost of equity, that is, ROE is set equal to k by the regulator, "c" equals 1.0 in the above formula. Thus k=E/P, and the two methodologies are equivalent.

Q. Is there a logical contradiction in Mr. Hill's use of the Modified Earnings-Price Ratio as a check on his DCF results?

A. Yes. On page 36 lines 17-20 and page 37 lines 9-11 of his testimony, Mr. Hill admits that the Modified Earnings-Price Ratio model only works when the M/B ratio is 1.0. When stocks are trading above book, as they have been and continue to do so, the

Modified Earnings-Price Ratio model understates investor return. As discussed above, the Modified Earnings-Price Ratio model reduces into the DCF model when the Market-to-Book ratio is 1.0. Therefore, it follows that if the Modified Earnings-Price Ratio model understates investor return, the same must be true for the DCF model. Although Mr. Hill has admitted that the market return for a Modified Earnings-Price ratio model must be increased in order to properly estimate investor return when the Market-to-Book ratio exceeds 1.0, Mr. Hill does not hold the same point of view when it comes to the DCF model. This is logically inconsistent and demonstrates that Mr. Hill's DCF results understate UE's required ROE.

Q. Does Mr. Hill use a check other than the Modified Earnings-Price Ratio of his DCF results?

A. Yes. Mr. Hill also uses the M/B Ratio to check his DCF results.

Q. Is the M/B Ratio methodology an appropriate check of DCF results?

A. No. On page 41 lines 3-4, Mr. Hill admits that the M/B Ratio methodology "*is derived algebraically from the DCF model and, therefore, cannot be considered a strictly independent check of that method.*" Furthermore, the M/B Ratio, like both the retention growth method and the Modified Earnings-Price Ratio discussed above, is logically circular because it requires an assumed ROE, which is the very quantity the model is trying to estimate.

(vii) MR. HILL ERRONEOUSLY RELIES UPON THE PLAIN VANILLA VERSION OF THE CAPM AND UNDERSTATES AN APPROPRIATE ROE FOR UE.

Q. Does Mr. Hill employ a CAPM estimate to check his DCF results?

A. Yes. As a check on his DCF estimate, Mr. Hill performs a CAPM

analysis of ROE summarized on Schedule 8.

Q. Do you agree with Mr. Hill's risk-free rate proxy in the CAPM analysis?

A. Yes, I agree with Mr. Hill's yield of 4.6% on long-term U.S. Treasury bonds as a proxy for the risk-free rate in his CAPM analysis.

Q. Do you agree with Mr. Hill's beta estimate in the CAPM analysis?

A. Yes, I agree with Mr. Hill's beta estimate.

Q. What are the flaws in Mr. Hill's CAPM analysis?

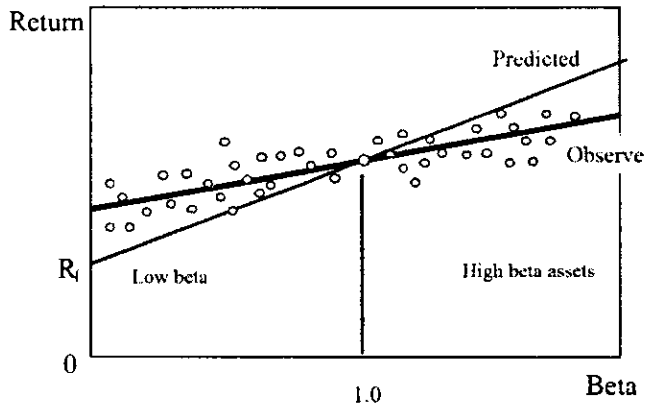
A. The CAPM analysis has two major flaws. First, Mr. Hill uses the plain vanilla version of CAPM, which, as discussed below, understates the cost of capital. Second, Mr. Hill erroneously relies upon a geometric average rather than an arithmetic average of realized returns for his MRP.

Q. Do you agree with the use of the plain vanilla version of the CAPM used by Mr. Hill to estimate the cost of capital?

A. No. Mr. Hill erroneously uses the plain vanilla CAPM, which understates the cost of capital, as discussed in my pre-filed direct testimony and supporting exhibits. As stated in my direct testimony and Appendix A of my direct testimony, a myriad of empirical tests of the CAPM have shown that the risk-return tradeoff is not as steeply sloped as that predicted by the CAPM. That is, low-beta securities, such as utilities, earn returns somewhat higher than the CAPM would predict, and high-beta securities earn less than predicted. In other words, the CAPM tends to overstate the actual sensitivity of the cost of capital to beta: low-beta stocks tend to have higher returns and high-beta stocks tend to have lower returns than predicted by the CAPM. The difference between the

CAPM and the type of relationship observed in the empirical studies is depicted in the figure below.

CAPM: vs Observed



This is one of the most widely known empirical findings of the finance literature. *See also* Roger A. Morin, *The New Regulatory Finance*, chapter 6 (1st ed. 2006). As a result of the phenomenon, Mr. Hill's use of the plain vanilla CAPM understates the ROE for UE by approximately 50 basis points.

Q. Is Mr. Hill correct that the results of a CAPM analysis are less reliable than those from a DCF analysis?

A. No, I do not believe so. On page 24 of his testimony, Mr. Hill argues that caution must be used when employing a CAPM methodology and that there are reliability problems with the key CAPM inputs, namely, the risk-free rate, beta, and the MRP. Mr. Hill also raises questions regarding the fundamental applicability of the CAPM theory, the accuracy of beta, and the magnitude of the MRP. While I certainly agree that caution must be exercised when employing a CAPM methodology, or any other financial model

for that matter, my own point of view is that, contrary to such assertions, the DCF model is at least as fragile as—if not more than—the CAPM in view of the clear lack of realism of the assumptions underlying the DCF model relative to those underlying the CAPM and the difficulty if specifying the key DCF input, namely the expected growth rate.

Many of the assumptions necessary for the DCF model are simply unrealistic. For example, the constant growth form of the DCF requires future earnings per share, dividends per share, book value per share, and price per share to grow at the same constant rate. There is no evidence that these conditions actually prevail in the equity market.

As Mr. Hill himself admits on page 16 of his direct testimony, "*the DCF theory does not exactly 'track' reality. Payout ratios and expected equity returns do change over time.*" I agree with this assessment.

Q. Are the CAPM assumptions restrictive relative to those that underlie the DCF model?

A. No. My own position is that the DCF model assumptions are at least as restrictive as those that underlie the CAPM assumptions.

Q. Is the CAPM widely used in practice?

A. Yes. Since its introduction in 1964, the CAPM has gained immense popularity as the practitioner's method of choice when estimating cost of capital under conditions of risk. The intuitive simplicity of his basic concept (that investors must be compensated for the risk they assume) and the relative ease of application of the CAPM are the main reasons behind its popularity.

The CAPM continues to be widely used by analysts, investors, and corporations. A

comprehensive survey of current practices for estimating the cost of capital found that 81% of companies used the CAPM to estimate the cost of equity, 4% used a modified CAPM, and 15% were uncertain.[4] In another comprehensive survey conducted by Graham and Harvey, the managers surveyed reported using more than one methodology to estimate the cost of equity, and 73% used the CAPM.[5] It seems from those results that Mr. Hill's approach to cost of capital estimation is outside the mainstream of corporate practices.

Q. Is Mr. Hill's condemnation of the CAPM approach based on the Fama-French findings accurate and complete?

A. No, it is not. On page 25 of his direct testimony, Mr. Hill selectively chooses a 1992 study by Fama and French that questions the importance of beta in explaining observed returns. Generally, financial theory has shown that beta is a sufficient risk measure for diversified investors, and most of the empirical literature has confirmed its importance in determining expected return. There is a notable exception—the one chosen by Mr. Hill. In the cited article, the authors found little explanatory power in the relationship between *realized* returns and beta, but the CAPM specifies a relationship between *expected* returns and beta.

However, Mr. Hill neglects the fertile academic literature published in journals on this subject since the publication of the Fama and French results in 1992. Since the publication of the Fama and French paper in 1992, the CAPM and its primary risk measure (beta) have received renewed support. In a 1993 paper, Chan and Lakonishok[6]

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[4] Robert F. Bruner, *et al.*, "Best Practices in Estimating the Cost of Capital: Survey and Synthesis," *Financial Practice and Education*, Vol. 8, No. 1 (Spring/Summer 1998).
[5] John R. Graham & Campbell R. Harvey, "The Theory and Practice of Corporate Finance: Evidence from the Field," *Journal of Financial Economics*, Vol. 61, 187-243 (2001).
[6] Louis K.C. Chan & Josef Lakonishok, "Are Reports of Beta's Death Premature?" *Journal of Portfolio Management*, 51-62 (Summer 1993).

found a strong relationship between beta and return for the years of their study. In a prominent paper in the same journal, Fischer Black[7] also refuted the conclusions of Fama and French and stated that "beta is alive and well." In March 1995, Kothari, Shanken, and Sloan[8] demonstrated that beta receives statistically significant return compensation when betas are estimated from time-series regressions of annual portfolio returns on the annual return on an equally weighted market index. In a December 1995 paper, Kim[9] found that, once corrected for the errors in variables problem, there was more support for the role of beta. In yet another 1996 paper, Jagannathan & Wang[10] showed that when betas are allowed to vary over the business cycle, the empirical support of the CAPM is very strong. Fama and French themselves revisited the issue in 1994 and proposed a three-factor model for security returns that included beta as a factor. In their annual survey of capital market returns, Morningstar (formerly Ibbotson Associates) compare Fama-French results with CAPM results and determines that the results, for large-capitalization companies, are virtually indistinguishable.[11] Finally, Nobel Price winning economist William Sharpe refuted the Fama-French criticism in "Revisiting the CAPM," *Dow Jones Asset Manager* (May-June 1998).

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[7] Fischer Black, "Beta and Return," *Journal of Portfolio Management*, 8-18 (Summer 1993).
[8] S.P. Kothari, *et al.*, "Another Look at the Cross-Section of Expected Stock Returns," *Journal of Finance* Vol. 50, No. 1 (1995).
[9] Dongcheol Kim, "The Errors in the Variables Problem in the Cross-Section of Expected Stock Returns," *Journal of Finance* Vol. 50, No. 5 (1995).
[10] Ravi Jagannathan & Zhenyu Wang, "The Conditional CAPM and the Cross-Section of Expected Returns," *Journal of Finance* Vol. 51, No. 1 (1996).
[11] Ibbotson Associates, *Stocks, Bonds, Bills, and Inflation 2005 Yearbook: Valuation Edition*, 146- 147 (2005).

(viii). MR. HILL IMPROPERLY USES THE GEOMETRIC MEAN MRP RATHER THAN THE ARITHMETIC MEAN MRP IN HIS CAPM ANALYSIS

Q. Do you agree with Mr. Hill's MRP estimate in the CAPM analysis?

A. No, I do not.

Q. How does Mr. Hill estimate the MRP component of the CAPM?

A. Mr. Hill uses three MRP estimates in his CAPM analysis:

Historical MRP 1926-2007 Arithmetic Mean: 6.5%

Historical MRP 1926-2007 Geometric Mean: 5.0%

Brealey-Myers-Allen midpoint MRP estimate: 5.3%

The first estimate is the realized market risk premium over the period 1926-2007 based on arithmetic averages as reported by Morningstar (formerly Ibbotson Associates), whereas the second estimate is the realized MRP over the same period based on a geometric average. The third estimate is based on the Brealey-Myers-Allen textbook, which advocates a range of 3.8% – 6.8% (midpoint 5.3%).

Q. Do you agree with Mr. Hill's first estimate of 6.5% for the MRP in his CAPM analysis?

A. No. For his first MRP proxy, Mr. Hill used a historical MRP of 6.5%. This estimate was provided by Morningstar in the Stock, Bonds, Bills and Inflation 2008 Yearbook. Over the period 1926 through 2007, Morningstar estimated that the arithmetic average of the achieved total return on the S&P 500 was 12.3%, and the total return on long-term Treasury bonds was 5.8%. The indicated equity risk premium is 6.5% (12.3% - 5.8% = 6.5%).

As discussed in my direct testimony, the more accurate way to estimate the MRP from historic data is to use the *income* return, not *total* returns, on government bonds. The long-term 1926-2007 MRP based on income returns, as required, is 7.1% rather than 6.5%. Moreover, Ibbotson / Morningstar in Appendix A (Table A-1 p. 2) calculates what they call "Long Horizon Equity Risk Premium" and arrive at 7.1% (for the period 1926-2007).

Morningstar recommends use of the *income* return on government bonds as a more reliable estimate of the historical MRP because the income component of total bond return (*i.e.* the coupon rate) is a better estimate of expected return than the total return (*i.e.* the coupon rate + capital gain).[12] In other words, bond investors focus on income rather than realized capital gains/losses.

This correction alone increases Mr. Hill's CAPM estimate by approximately 50 basis points, that is, the product of (i) the difference between 7.1% and 6.5% and (ii) Mr. Hill's beta of 0.83.

Q. Do you agree with Mr. Hill's second MRP estimate based on geometric averages in measuring expected return?

A. No. Arithmetic means are appropriate for forecasting and estimating the cost of capital, and geometric means are not.[13] Indeed, the Morningstar publication from which Mr. Hill derives his MRP estimate contains a detailed and rigorous discussion of the impropriety of using geometric averages in estimating the cost of capital. There is no

[12] *See* Morningstar, *Stocks, Bonds, Bills, and Inflation 2008 Yearbook: Valuation Edition*, at page 66 (2008).

[13] *See* Roger A. Morin, *Regulatory Finance: Utilities' Cost of Capital*, chapter 11 (1994); Roger A. Morin, *The New Regulatory Finance: Utilities' Cost of Capital*, chapter 4 (2006); Richard A Brealey, *et al.*, *Principles of Corporate Finance* (8th ed. 2006).

theoretical or empirical justification for the use of geometric mean rates of returns when estimating the cost of capital. Please see Appendix A-1 attached to my direct testimony for a discussion regarding the theoretical underpinnings, empirical validation, and the consensus of academics on why geometric means are inappropriate for forecasting and estimating the cost of capital.

Q. What is the effect of Mr. Hill's use of the geometric mean MRP?

A. Mr. Hill's use of the geometric mean MRP of 5.0% rather than the arithmetic mean of 6.5% significantly understates the MRP, which suggests an understatement of the ROE of UE by approximately 125 basis points (using Mr. Hill's beta of 0.83):

$$\beta_{UE} \times (\text{Arithmetic Mean} - \text{Geometric Mean})$$
$$0.83 \times (6.5\% - 5.0\%)$$
$$0.83 \times (1.5\%)$$
$$1.25\%$$

Using Mr. Hill's long-term Treasury yield of 4.6% as a proxy for the risk-free rate, the average beta of 0.83 and the arithmetic mean MRP of 6.5%, the CAPM estimate is 10.0% (without flotation costs) and 10.3% (with flotation cost).

Q. Is Mr. Hill's assessment of the new research on the MRP complete and accurate?

A. No. Mr. Hill has selectively chosen published studies that purport to show that the historical MRP published by Morningstar is high. This assessment of the state of research regarding MRP is inaccurate and misleading.

Q. Are you familiar with the published work by Dimson, Marsh, and Staunton cited by Mr. Hill?

A. Yes. On page 30 lines 11-24, Mr. Hill cites a published work by Dimson,

Marsh, and Staunton,[14] which reports on returns over the period 1900 to 2000 for twelve countries, representing 90% of today's world market capitalization. Dimson, Marsh, and Staunton report an average MRP over long bond returns over *all countries* of 5.0%.

Q. Did Dimson, Marsh, and Staunton find that the international MRP of 5.0% is the same MRP for U.S. markets?

A. No. Mr. Hill omits to mention that Dimson, Marsh, and Staunton report a MRP of 7.0% for *U.S. markets*. Moreover, Dimson, Marsh, and Staunton report that the MRP was generally higher for the second half of the 20th century than for the first half of the 20th century. For example, the MRP in the U.S. was 5.00% in the first half of the 20th century and 7.50% in the second half of the 20th century.

Additionally, Brealey, Myers, and Allen have updated the Dimson, Marsh, and Staunton results to 2003.[15] According to that research, Treasury bills have provided an average return of 4.1% since 1900, and common stocks have provided an average return of 11.7% over the same period. This data suggest a MRP of 7.6% (11.7% – 4.1%).

Q. Did Dimson, Marsh, and Staunton update their findings on the MRP?

A. Yes, they did. Mr. Hill's reference to the Dimson et. al. study is stale, and that study was recently updated[16]. The U.S. Market historical MRP average over the 1900 to 2007 period is listed at 6.5% over bonds, and not the 5.5% cited by Mr. Hill.

Q. Are you familiar with the published work of Professor Siegel cited by Mr. Hill?

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[14] Elroy Dimson *et al.*, "Risk and Return in the 20th and 21st Centuries," *Business Strategy Review* 11(2): 1-18 (2000).

[15] Richard A Brealey, *et al.*, *Principles of Corporate Finance* 155 (8th ed. 2005).

A. On page 31 lines 18-22, Mr. Hill quotes Jeremy Siegel,[17] who has examined historical data over an even longer time series, including some data dating back to 1802.

Q. How do you respond to Professor Siegel's work?

A. First, it is unclear whether data on capital market behavior from the 19th century are relevant for estimating cost of capital requirements in the 21st century. Second, the reliability of the Siegel data, the older data in particular, is of some question. The stock market of the early 1800s was very limited, embryonic in scope, with very few issues trading, and few industries represented. Dividend data were unavailable over most of this early period, and stock prices were based on wide bid-ask spreads rather than on actual transaction prices.[18]

Q. Are you familiar with the surveys of Graham and Harvey cited by Mr. Hill?

A. On page 32 lines 21-22, Mr. Hill cites Graham and Harvey surveys of corporate finance professionals conducted in early 2007. Although the survey technique is forward-looking, it suffers many shortcomings inherent in survey techniques. First, return definitions and risk premium definitions differ widely. Second, survey responses are subject to bias. Third, subjective assessments about long-term market behavior may well place undue weight on recent events and immediate prospects. It is not clear how

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[16] Elroy Dimson *et al.*, "The Worldwide Equity Risk Premium: A Smaller Puzzle," Journal of Economic Literature, April 2006. See also Dimson, Marsh, Staunton, "Global Investor Returns Yearbook 2008," London Business School, February 2008.
[17] Jeremy Siegel, "The Shrinking Equity Premium," *Journal of Portfolio Mgt* 26(1): 10-17.
[18] *See, e.g.*, G. W. Schwert, "Indexes of U.S. Stock Prices from 1802 to 1987," *Journal of Business* Vol. 63, No. 3 (1990) (addressing the difficulties inherent in stock market data prior to the Great Depression.)

respondents to this survey would respond under current conditions of market volatility, such as the sub-prime market debacle and record-high energy and commodity prices.

Q. Are you familiar with the study by Mehra and Prescott cited by Mr. Hill?

A. Yes. On page 29 lines 3-17, Mr. Hill cites to a March 1985 study by Mehra and Prescott that concluded that historical MRPs overstate the magnitude of the MRP.

Q. How do you respond to the Mehra and Prescott study?

A. Mr. Hill does not reveal the fact that Mehra and Prescott reviewed the MRP literature in 2003 and concluded differently. There are two revealing passages from Mehra and Prescott's more recent review:

> *Even if the conditional equity premium given current market conditions is small, and there appears to be general consensus that it is, this in itself does not imply that it was obvious either that the historical premium was too high or that the equity premium has diminished.*
>
> *In the absence of this [knowledge of the future], and based on what we currently know, we can make the following claim: over the long horizon the equity premium is likely to be similar to what it has been in the past and the returns to investment in equity will continue to substantially dominate that in T-bills for investors with a long planning horizon.*

In other words, Mehra and Prescott conclude that historical and forward-looking MRPs are very similar.

Q. Is your MRP estimate supported by the finance literature?

A. Yes. The MRP estimate provided in my direct testimony is the result of both historical and prospective studies and is consistent with the finance literature on the subject.

(ix). MR. HILL'S RECOMMENDED ROE IMPROPERLY IGNORES FLOTATION COSTS

Q. What allowance for flotation costs does Mr. Hill make with respect to his recommended ROE for UE?

A. Mr. Hill fails to include any allowance whatsoever for flotation costs in his recommended ROE for UE. Mr. Hill's DCF estimates are therefore downward-biased by approximately 30 basis points as a result of that omission. Moreover, Mr. Hill's testimony is inconsistent with regard to flotation costs. In a discussion of sustainable growth in the DCF model on page 20 lines 10-12, Mr. Hill recognizes that "*investor expectations regarding growth from external source (sales of stock) must be considered and examined.*" Indeed, Mr. Hill quantifies the effect of such issues on company growth in his Schedule 4 under the heading "external growth."

Finally, Mr. Hill's disregard of flotation costs is inconsistent with (i) Value Line forecasts that show that electric utilities will be issuing new common stock in the future and (ii) Mr. Hill's own exhibit, which demonstrates that Mr. Hill's "comparable" groups are scheduled to issue considerable amounts of new equity. See Schedule 4 at pages 1-5, under the heading "external growth" for 2008, 2009 and 2011-2013.

Q. Why should the authorized ROE be adjusted to include an allowance for flotation costs?

A. Flotation costs represent the discounts that must be provided to place new securities in the issues of new equity. Flotation costs have a direct and an indirect component. The direct component represents monetary compensation to the security underwriter for (i) marketing/consulting services, (ii) the risks involved in distributing the issue, and (iii) any operating expenses associated with the issue (printing, legal,

prospectus, etc.). The indirect component represents the downward pressure on the stock price as a result of the increased supply of stock from the new issue (frequently referred to as "market pressure").

Flotation costs for common stock is analogous to the flotation costs associated with past bond issues, which, as a matter of routine regulatory policy, continue to be amortized over the life of the bond, even though no new bond issues are contemplated. Flotation costs for common stock are not amortized because such securities have no finite life. Therefore, the recovery of flotation cost requires an upward adjustment to the authorized ROE by dividing the expected dividend yield component of the DCF model by (1 - f), where "f" is the flotation cost factor.

Q. Does Mr. Hill explain why he does not provide an allowance for flotation costs in his recommended ROE for UE?

A. Mr. Hill offers five spurious reasons as to why he fails to include an allowance for flotation costs.

First, Mr. Hill erroneously asserts that flotation costs on common stocks are analogous to bonds sold at a premium to par value (i.e., the company's cost of debt is less than the coupon rate). *See* page 45, lines 1-11. In practice, the calculation of the embedded cost of debt accounts for issuance costs, premium or discounts at the time of issue, and recognizes sinking fund and call provisions. This is because premiums or discounts and flotation costs influence the effective yield to the investor and cost to the utility and are typically allowed to be recovered by regulators.

Unlike bonds, however, a utility's book equity account is credited by the net proceeds of a common stock issue after issuance costs and not by the gross proceeds. In

other words, the common stock investment recorded on the balance sheet, unlike bond issues, is less than the amount of money actually put up by the investor by the amount of issuance costs, regardless of whether the net issue price is less than, equal to or greater than book value. If the investor is to earn the required return on a reduced book equity base, the allowed return needs to exceed the required return by an amount sufficient to cover the discrepancy between gross and net proceeds from a common stock issue. Moreover, unlike bonds, the allowed ROE is the market, or current, return and not the embedded cost of debt.

Q. What is the second rationale provided by Mr. Hill regarding his omission of flotation costs?

A. Mr. Hill argues on page 45 lines 13-15 that "*the reduction of the book value of stockholder investment due to issuance expenses can occur only when the utility's stock is selling at a market price at to or below its book value.*" This argument, however, fails to address the simple fact that, in issuing common stock, a company's common equity account is credited by an amount less than the market value of the issue. Therefore, the company must earn slightly more on its reduced rate base to produce a return equal to that required by shareholders. The stock's M/B ratio is irrelevant because flotation costs are present, irrespective of whether the stock trades above, below, or at book value.

Q. What is the third rationale provided by Mr. Hill regarding his omission of flotation costs?

A. Mr. Hill on page 45 lines 19-24 then argues that the majority of the flotation costs are not out-of-pocket expenses incurred by the issuing utility and, as such,

should not be recovered. This argument, if taken to a logical conclusion, would suggest that depreciation expenses associated with the construction of plant should not be recovered because depreciation expenses are not out-of-pocket expenses.

In theory, flotation costs could be expensed and recovered through rates as they are incurred. This procedure is not considered appropriate, however, because the equity capital raised in a given stock issue remains on the utility's common equity account and continues to provide benefits to ratepayers indefinitely. The expense and recovery of flotation costs would burden current ratepayers with the full costs of raising capital when the benefits of that capital extend indefinitely. Moreover, as discussed in my pre-filed direct testimony, common stocks, unlike bonds, have no finite life over which flotation costs could be amortized. Therefore, the most appropriate method to recover flotation costs is via an upward adjustment to the authorized ROE.

Mr. Hill then makes the circular argument on page 46 lines 1-7 that the flotation cost allowance is unwarranted because investors factor these costs in the stock price. Such circular reasoning could be used to justify any regulatory policy, regardless of the propriety of the policy. For example, under Mr. Hill's reasoning, it would be appropriate to authorize a clearly confiscatory ROE, such as of 1%, because investors would reflect this fact in the stock price.

Q. What are the fourth and fifth rationales provided by Mr. Hill regarding the omission of flotation costs?

A. Mr. Hill fourth argument on page 46 lines 8-11 is as follows:

> *"my DCF growth rate analysis includes an upward adjustment to equity capital costs which accounts for investor expectations regarding stock sales at market prices in excess of book value, and any further explicit adjustment for issuance expenses related to increases in stock outstanding*

is unnecessary."

This argument is simply a variation of Mr. Hill's first argument, which I addressed above.

Mr. Hill's fifth argument on page 46 lines 12-13 is that "*research has shown that a specific adjustment for issuance expenses is unnecessary.*" In support of this assertion, Mr. Hill cites a sole source - an "unpublished note" in a relatively obscure bulletin. Indeed, Mr. Hill's statement stands in sharp contrast to (i) most finance textbooks and (ii) the myriad articles published in academic journals documenting and quantifying the flotation cost allowance. Please see Appendix B of my direct testimony for a review of this considerable literature.

III. REBUTTAL OF MR. GORMAN'S TESTIMONY

Q. Please summarize the recommended ROE of Mr. Gorman.

A. Mr. Gorman recommends a ROE for UE of 10.2%, which is the midpoint of Mr. Gorman's range of 9.81% – 10.55%. Mr. Gorman applies a standard DCF analysis to three groups of comparable investment-grade electric utilities. The standard DCF analysis for the proxy companies produces a ROE estimate of 11.86%, as shown in table form on page 18 of his direct testimony. Mr. Gorman then rejects his own standard DCF analysis as "not reasonable and inflated" and proceeds to implement a two-stage and a three-stage DCF analysis that produce a ROE estimate of 9.73% and 9.89%, respectively, as shown in table form on page 36 of his testimony.

As summarized on page 30, lines 11-16, Mr. Gorman also applies a risk premium analysis based on the difference between the ROEs authorized for utilities by regulatory bodies and the contemporaneous level of interest rates. This analysis produces an

authorized risk premium in the range of 4.40% to 5.89% over the yield on long-term Treasury bonds. Adding the forecast long-term bond yield of 5.1% to the risk premium range produces a ROE in the range of 9.50% – 10.99%, with a midpoint estimate of 10.25%. Repeating the same process using the yield on "A" rated utility bonds, Mr. Gorman obtains a common equity return in the range of 9.98% to 11.34%, with a midpoint of 10.66%, as shown on page 30 lines 17-22.

Finally, Mr. Gorman applies a CAPM analysis to the same three groups of electric utilities and obtains a ROE in the range of 10.63% to 10.62%, with a midpoint of 10.63%. This is shown on page 36 lines 7-10 of his direct testimony.

Q. Please summarize your specific criticisms of the ROE recommended by Mr. Gorman.

A. Although I agree with several of the procedures and methodologies employed by Mr. Gorman, he has departed significantly from his past testimonies and previous practices in arriving at his recommended ROE. These departures result in a recommended ROE that understates an appropriate ROE for UE for the following reasons:

(i) Mr. Gorman Improperly Ignores His Standard DCF Analysis In Favor Of His Two-Stage and Three-Stage DCF Analyses. Mr. Gorman improperly ignores his standard DCF analysis in favor of his two-stage and three-stage DCF analyses because Mr. Gorman arbitrarily concludes that his own standard DCF analysis as "not reasonable and inflated".

(ii) Mr. Gorman Erroneously Relies Upon the Plain Vanilla Version of the Capital Asset Pricing Model. Mr. Gorman erroneously relies upon the plain vanilla version of the CAPM—a model known to understate return requirements for low beta firms, such as UE.

(iii) Mr. Gorman Improperly Relies Upon Total Returns on Government Bonds for His MRP. Mr. Gorman understates his

CAPM analysis by approximately 60 basis points by improperly relying upon *total* returns on government bonds for the MRP in his CAPM analysis.

(iv) Mr. Gorman's Risk Premium Analysis Fails to Account for the Inverse Behavior Between Authorized Risk Premiums and Interest Rates. Mr. Gorman's risk premium analysis fails to account for the inverse behavior between authorized risk premiums and interest rates.

(v) Mr. Gorman's Recommended ROE Improperly Ignores Flotation Costs. Mr. Gorman understates his recommended ROE by approximately 30 basis points because it does not allow for flotation costs and, as a result, leaves a legitimate expense unrecovered.

Correction of the above-described infirmities would likely increase the ROE recommended by Mr. Gorman by at least 100 basis points, from a range of 9.81% – 10.55% to a range of 10.81% – 11.55%, which is quite consistent with my own recommended ROE.

(i). MR. GORMAN IMPROPERLY IGNORES HIS STANDARD DCF ANALYSIS IN FAVOR OF HIS TWO-STAGE DCF ANALYSIS

Q. Do you agree with Mr. Gorman's standard DCF analysis?

A. Broadly speaking, I agree with Mr. Gorman's first DCF analysis. Mr. Gorman applies the traditional *standard* DCF analysis to three groups of electric utilities using a 13-week average stock price, a forward-looking dividend yield, and a growth proxy based on analysts' growth forecasts. As shown on Exhibit MPG-5, the traditional DCF analysis for the proxy groups produces a DCF return of 11.34%, 11.85%, and 12.4% for each of the three groups, for an average DCF result of 11.9%.

Q. Is Mr. Gorman's *standard* DCF analysis consistent with his past practices?

A. Yes. Over the years, Mr. Gorman has always performed a traditional DCF analysis in most, if not all, of his testimonies.

Q. What did Mr. Gorman have to say on the reasonableness of his *standard* DCF analysis in a 2006 rate case involving Puget Sound Energy?

A. Mr. Gorman had this to say about his *standard* DCF analysis in a recent Puget Sound Energy rate case:

> *Q. DO YOU HAVE ANY COMMENTS CONCERNING THE RESULTS OF YOUR DCF ANALYSIS?*
>
> *A. Yes. I believe the results of my constant growth DCF analysis, and a DCF analysis in general in today's marketplace, reflect rational investment financial metrics and reflect today's very low cost capital market. Therefore, the DCF results are reasonable.*

Q. What does Mr. Gorman have to say about his *standard* DCF analysis in this case?

A. In this case (page 18 lines 17-23 to page 19 lines 1-3), Mr. Gorman rejects the same DCF analysis he has performed in numerous previous rate cases.

Q. Why does Mr. Gorman now reject the results of his *standard* DCF analysis?

A. Mr. Gorman asserts that the results produced by his *standard* DCF analysis are not reasonable and represent an inflated return. However, Mr. Gorman's past practices have consistently relied on the *standard* DCF model—and not on the two-stage and three-stage DCF used in this proceeding.[19]

[19] See, for example, Mr. Gorman's testimony in (i) Docket No. UE-050684 regarding PacifiCorp before the State of Washington Utilities Commission; (ii) Docket No. 05-304 regarding Delmarva Power & Light before the Delaware Public Service Commission; and (iii) Docket No. 9036 regarding Baltimore Gas & Electric before the Maryland Public Service Commission.

Mr. Gorman argues that the growth rates relied upon in his standard DCF analysis exceed the growth rate of the overall U.S. economy. On page 19, Mr. Gorman argues that his constant growth DCF analysis result is too high because the growth rate used in these DCF studies are higher than the maximum sustainable growth rate of 4.8% to 5.0% of the U.S. economy. Subsequently on pages 19-21, Mr. Gorman argues that DCF growth rates should track those of the U.S. economy.

Q. In previous rate cases, did Mr. Gorman offer the same argument?

A. No. It is only very recently that Mr. Gorman has begun to argue that the growth rates relied upon in his traditional DCF analysis were less than the growth rate of the overall U.S. economy.

In short, Mr. Gorman's DCF analysis results-oriented, self-serving, and inconsistent with Mr. Gorman's prior testimonies. His rejection of the results from the traditional DCF model has the effect of substantially reducing his recommended ROE.

Q. Do you agree with Mr. Gorman's two-stage DCF analysis?

A. Although I certainly agree with the validity of the two-stage DCF methodology and agree with Mr. Gorman's input data for the first growth stage, I disagree with the key input data Mr. Gorman uses in the second growth stage—the long-term growth estimate. Mr. Gorman bases the latter on the Blue Chip Economic Indicators consensus economic projections of the nominal 5-year and 10-year GDP growth rate estimate of 5.0% and 4.8%, respectively.

Q. Do you agree with those estimates?

A. No. Mr. Gorman should have compared the utility growth rate forecasts with the historical long-term growth of the economy as a whole and/or the long-range

growth forecasts in GDP projected for the very long-term. Mr. Gorman's comparison to a short-term growth rate forecast (the next five/ten years) is inappropriate because the growth term of the DCF model is perpetual in nature.

As discussed below, a long-term forecast of nominal growth in GDP can be formulated by combining a long-term inflation estimate with a long-term real growth rate forecast, and the long-term expected GDP nominal growth is approximately 6.0% (3.4% + 2.6% = 6.0%). In other words, Mr. Gorman's growth forecast of 6.7% for his comparable group of electric utilities slightly overstates the long-term expected GDP nominal growth by approximately 70 basis points—not 170-190 basis points as Mr. Gorman claims.

It should be noted that Morningstar's *Stocks, Bond, Bills and Inflation 2008 Yearbook Valuation Edition*—the same source used by Mr. Gorman to justify his claim that a company's earnings/dividends growth cannot exceed that of the U.S. GDP—uses 6.0% as its estimate of the U.S. economy long-term growth rate and not the 4.8% – 5.0% range used by Mr. Gorman.

Q. How would Mr. Gorman's DCF results change if the appropriate long-term GDP growth forecast is used in the two-stage DCF analysis?

A. Use of the GDP long-term growth forecast of 6.0% in Mr. Gorman's second-stage DCF analysis instead of the medium-term forecast of 4.8% – 5.0% would raise Mr. Gorman's DCF estimates by approximately 100-120 basis points, from 9.73% to approximately 10.73% – 10.93%.

Q. How would Mr. Gorman's DCF results change if the appropriate long-term GDP growth forecast is used in the three-stage DCF analysis?

A. Exactly the same argument applies to Mr. Gorman's three-stage DCF analysis. Use of the GDP long-term growth forecast of 6.0% in Mr. Gorman's third-stage DCF analysis instead of the medium-term forecast of 4.8% – 5.0% would raise Mr. Gorman's DCF estimates by approximately 100-120 basis points, from 9.89% to approximately 10.89% – 11.09%.

Q. Does Mr. Gorman use any sustainable growth rate calculations?

A. Yes. On Schedule MPG-9 pages 1-6, Mr. Gorman tests the rationality of analysts' growth forecasts by examining the sustainable growth rates of his sample companies. As noted previously in my rebuttal of Mr. Hill, the sustainable growth technique is fraught with serious conceptual and empirical difficulties, and the Commission should disregard any results from such method.

Q. What is Mr. Gorman's recommended ROE if he incorporates the results of his traditional DCF analysis as he has in the past?

A. If we incorporate Mr. Gorman's average standard DCF result of 11.9% into his summary of results tables shown on page 36, the augmented table becomes:

Return on Common Equity Summary

Description	Results (%)
Standard DCF	11.90
2-Stage DCF	9.73
3-Stage DCF	9.89
Risk Premium	10.46
CAPM	10.63

The results now average 10.52%, and range from 9.73% to 11.90% with a midpoint of 10.82%. Adding flotation costs would bring his recommended return to slightly above 11.0%.

(ii). MR. GORMAN ERRONEOUSLY RELIES UPON THE PLAIN VANILLA VERSION OF THE CAPM

Q. Does Mr. Gorman's CAPM analysis understate a fair ROE for UE?

A. Yes. As previously discussed and in my direct testimony and supporting exhibits, empirical evidence demonstrates that the plain vanilla CAPM understates the cost of capital for low-beta securities, such as electric and natural gas utilities, and overstates the return from high-beta securities. Mr. Gorman's use of the plain vanilla CAPM understates the ROE for UE by approximately 50 basis points.

(iii). MR. GORMAN IMPROPERLY RELIES UPON TOTAL RETURNS ON GOVERNMENT BONDS FOR HIS MRP

Q. Do you agree with Mr. Gorman's historical MRP of 6.5% for the CAPM?

A. No, not quite. Mr. Gorman uses a historical MRP of 6.5% for the CAPM:

> *The historical estimate of the MRP was also estimated by Morningstar in Stock, Bonds, Bills and Inflation 2008 Year Book. Over the period 1926 through 2007, Morningstar's study estimated that the arithmetic average of the achieved total return on the S&P 500 was 12.30%, and the total return on long-term Treasury bonds was 5.80%. The indicated equity risk premium is 6.50% (12.30% - 5.80% = 6.50%).* (Gorman testimony at page 34, lines 10-15.)

As previously discussed, the more accurate way to estimate the MRP from historic data is to use the *income* return, not *total* returns, on government bonds. The long-term (1926-2007) MRP based on *income* returns is 7.1%, rather than 6.5%. Correction of this error alone increases Mr. Gorman's CAPM estimate by approximately 50 basis points (the product of (i) the difference between 7.1% and 6.5% and (ii) Mr. Gorman's beta of 0.85).

(iv). **MR. GORMAN'S RISK PREMIUM ANALYSIS FAILS TO ACCOUNT FOR THE INVERSE BEHAVIOR BETWEEN AUTHORIZED RISK PREMIUMS AND INTEREST RATES**

Q. Please describe Mr. Gorman's authorized risk premium analysis.

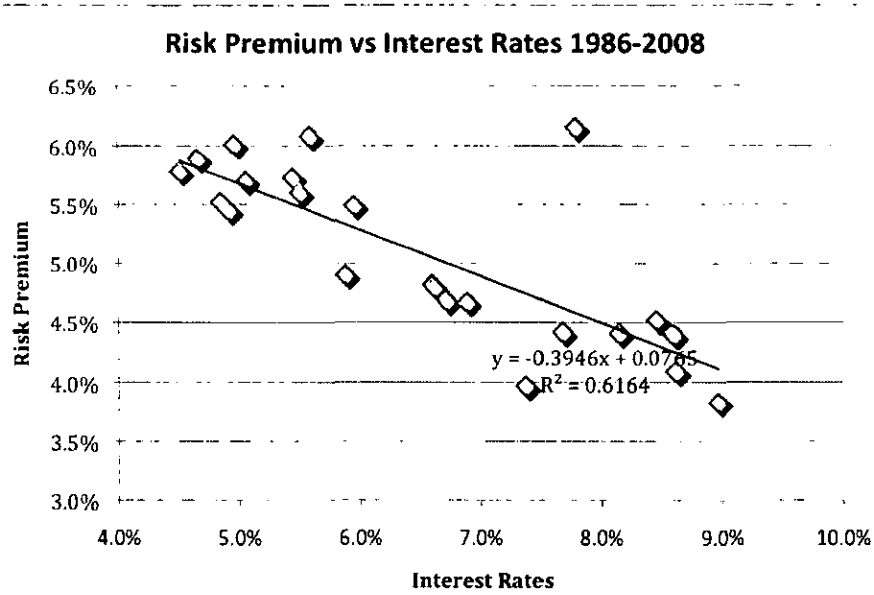
A. Mr. Gorman examines the historical risk premiums implied in the returns on equity authorized by regulatory commissions over the period 1986-2007, relative to the contemporaneous level of long-term Treasury and "A" rated utility bond yields. As shown on page 29 of his testimony, Mr. Gorman then derives an authorized risk premium in the range of 4.4% – 5.89% over long-term Treasury yields and 3.03% – 4.39% over Moody's utility bond yield.

Use of the projected long-term Treasury bond yield of 5.1% and a Treasury bond risk premium of 4.40% to 5.89% produces an estimated common equity return in the range of 9.50% to 10.99%, with a midpoint estimate of 10.25%. The addition of the Baa rated bond yield of 6.95% to the utility equity risk premium of 3.03% – 4.39% produces an estimated range of ROE of 9.98% – 11.34%, with a midpoint estimate of 10.66%. *See* Page 30 of Mr. Gorman's testimony lines 17-22.

In summary, Mr. Gorman's risk premium analyses produce a ROE estimate in the range of 10.25% – 10.66% with a midpoint estimate of 10.46% (page 31, lines 1-2.)

Q. Do you agree with Mr. Gorman's authorized risk premium analysis?

A. No. A careful review of ROE decisions relative to interest rates reported in Schedule MPG-14 reveals an inverse relationship between authorized risk premiums and interest rates for which Mr. Gorman fails to account. In other words, the authorized risk premium decreases when interest rates are high and increases when interest rates are low:



The following statistical relationship between the risk premium and Treasury bond yields emerges over the 1986-2007 period:

$$RP = 7.65 - 0.3946\ YIELD \qquad R^2 = 0.61$$

The relationship is statistically significant as indicated by the high R^2.

Inserting Mr. Gorman's long-term Treasury bond yield of 5.1% in the above equation suggests an authorized risk premium estimate of 5.6%, and not the 5.08% which Mr. Gorman reports on page 29 lines 6. Use of the proper allowed risk premium of 5.6% would result in an authorized ROE of 10.7% (5.1% + 5.6%) for UE instead of 10.2% (5.10% + 5.08%). In short, Mr. Gorman's result from this method is understated by approximately 50 basis points.

(v). MR. GORMAN'S RECOMMENDED ROE IMPROPERLY IGNORES FLOTATION COSTS

Q. What allowance for flotation costs does Mr. Gorman make with respect to his recommended ROE for UE?

A. Mr. Gorman is totally silent on the subject of flotation costs, and I can only surmise that he believes that such costs are unwarranted. As discussed above, failure to include any allowance whatsoever for flotation costs in his recommended ROE understates his recommended return by approximately 30 basis points, which would bring his recommended return from 10.2% to 10.5% due to this correction alone.

IV. REBUTTAL OF MS. LACONTE

Q. Please summarize the recommended ROE of Ms. LaConte.

A. Based on her analyses, Ms. LaConte has determined a ROE in the range of 10.1% to 10.6% with an average of 10.3% (see Page 14 line 3 of her testimony). It is not at all clear from these figures how she then recommends a ROE for UE of 10.00% with a fuel adjustment clause and 10.2% without such a clause.

In determining a recommended ROE for UE, Ms. LaConte applies a DCF analysis to a group of eighteen electric utilities. For the growth component of her DCF analysis, Ms. LaConte relies on Value Line's earnings growth forecasts. From her DCF analysis, Ms. LaConte derives a DCF estimate of 10.6%.

Ms. LaConte also applies a CAPM analysis to the same group of companies, using long-term Treasury bond yields as proxies for the risk-free rate, Value Line beta estimates, and the Ibbotson historical MRP. This analysis produces a ROE estimate of 10.4%. Ms. LaConte did not perform an independent risk premium analysis, preferring instead to rely on my own risk premium analysis and erroneously inferred a ROE of 10.1% from my analysis. Somehow, from these various analyses that produce a ROE range of 10.1% - 10.6%, Ms. LaConte concludes that the ROE for UE is 10.2% without a FAC and 10.0% with a FAC.

Q. Do you have any general comment on Ms. LaConte's testimony?

A. Yes, I do. Following my examination of Ms. LaConte's professional credentials in Appendix A of her testimony, it became clear that, although her credentials in the area of rate design and cost studies are impressive, I was unable to discern any expertise, academic or practical or as an expert witness, in the field of corporate finance and rate of return. With all due respect to Ms. LaConte, perhaps that explains the fact that she has offered rather limited independent evidence of her own compared to the other witnesses in this case. Instead, she devotes the bulk of her testimony criticizing my own testimony. Her criticisms are without foundation.

Q. Please summarize your specific criticisms of the ROE recommended by Ms. LaConte.

A. The ROE recommended by Ms. LaConte understates an appropriate ROE for UE for the following reasons:

(i) The Standard DCF Model Understates an Appropriate ROE for UE. Application of the standard DCF model to utility stocks understates the investor's expected return when the Market-to-Book ratio exceeds unity.

(ii) Two companies in Ms. LaConte's sample do not meet her own screening criteria.

(iii) Investors are expecting much greater growth rates than Ms. LaConte has derived, and her DCF results are therefore understated by 100 basis points.

(iv) Ms. LaConte Erroneously Relies Upon the Plain Vanilla Version of the Capital Asset Pricing Model. Ms. LaConte erroneously relies upon the plain vanilla version of the CAPM—a model known to understate return requirements for low beta firms, such as UE.

(v) Ms. LaConte's Recommended ROE Improperly Ignores Flotation Costs. Ms. LaConte understates his recommended ROE by

approximately 30 basis points because it does not allow for flotation costs and, as a result, leaves a legitimate expense unrecovered.

(vi) Ms. LaConte's Risk Premium analysis is based on a selective and incomplete interpretation of my Risk Premium study.

(vii) Ms. LaConte's criticisms of my testimony contains several statements and positions that are contrary to basic financial theory and empirical evidence. Such criticisms are unfounded.

Correction of the above-described infirmities would likely increase the ROE recommended by Ms. LaConte by at least 130 basis points, from 10.2% to 11.5%.

(i). The Standard DCF Model Understates an Appropriate ROE for UE

Q. Do Ms. LaConte's DCF results understate the appropriate ROE for UE?

A. Yes. As discussed earlier in my rebuttal, the standard DCF model understates investors' expected returns when the M/B ratio of a given stock exceeds unity and overstates investors' expected returns when the Market-to-Book ratio of a given stock is less than unity. Ms. LaConte's standard DCF analysis understates investors' required return for UE because the M/B ratio exceeds unity.

(ii) Two companies in Ms. LaConte's sample do not meet her own screening criteria.

Q. Is Ms. LaConte's sample of companies consistent with her own screening criteria?

A. No, not quite. Two of Ms. LaConte's sample companies do not meet the 70% minimum percentage of revenues from electric utility operations screening criterion, namely, Alliant Energy and Westar Energy.

(iii) Investors are expecting much greater growth rates than Ms. LaConte has derived, and her DCF results are therefore understated by 100 basis points.

Q. What growth proxy did Ms. LaConte use in her DCF analysis?

A. As a proxy for the expected growth component of the DCF model, Ms. LaConte relied exclusively on Value Line's earnings growth forecasts.

Q. Are the Value Line growth forecasts representative of the market consensus?

A. Not necessarily. Although I agree with the use of Value Line growth forecasts as one proxy for growth, Ms. LaConte's exclusive reliance on Value Line forecasts runs the risk that such forecasts are not representative of investors' consensus forecast. To guard against such a risk, she should have also relied on consensus analysts' growth forecasts as well.

Q. What does the published academic literature say on the subject of analysts' growth rate forecasts in the DCF model?

A. As discussed earlier and in my direct testimony, the empirical finance literature has demonstrated that consensus analysts' growth forecasts, such as those contained in First Call, Reuters, or Zacks, (i) are reflected in stock prices, (ii) possess a high explanatory power of equity values, and (iii) are used by investors.

Q. Are investors expecting growth rates equal to Ms. LaConte's range?

A. No. The best evidence shows that investors are expecting growth rates higher than those advocated by Ms. LaConte. As shown on page 20 of her testimony, Ms. LaConte projects an average growth rate of 6.0% for her group of electric utilities, based on Value Line growth projections. I have replicated Ms. LaConte's DCF analysis on the table below, only this time substituting the consensus analysts' growth forecast for each company instead of Value Line's in-house forecast.

MS. LACONTE'S REVISED DCF ANALYSIS

	Company Name	Dividend Yield	Analysts EPS Gth	Forecast Dividend Yield	Return on Equity
1	ALLETE	3.9	5.0	4.1	9.1
2	Alliant Energy	3.9	6.1	4.1	10.2
3	Amer. Elec. Power	4.1	6.2	4.4	10.6
4	Ameren Corp.	5.9	5.0	6.2	11.2
5	Cleco Corp.	3.7	14.0	4.2	18.2
6	DPL Inc.	4.0	10.7	4.4	15.1
7	Edison Int'l	2.6	8.8	2.8	11.6
8	Entergy Corp.	2.7	12.0	3.0	15.0
9	FPL Group	2.8	10.3	3.1	13.3
10	Hawaiian Elec.	5.1	4.2	5.3	9.5
11	IDACORP Inc.	4.0	6.0	4.2	10.2
12	PG&E Corp.	4.3	7.8	4.6	12.4
13	Pinnacle West Capital	6.5	6.6	6.9	13.5
14	Portland General	4.3	6.5	4.6	11.1
15	Progress Energy	5.8	4.7	6.1	10.8
16	Southern Co.	4.6	4.7	4.8	9.5
17	Westar Energy	5.0	4.8	5.2	10.0
18	Xcel Energy Inc.	4.8	5.4	5.1	10.5
	AVERAGE	**4.3**	**7.1**	**4.6**	**11.8**
	MEDIAN				**10.9**

Ssource: Ms. LaConte page 20, Zacks Investment Research 09/08

The average DCF estimate for the group is 11.8%, and the median is 10.9% using the consensus analyst growth forecast. That is at least 30 basis points above Ms. LaConte's estimate of 10.6% using strictly Value Line in-house growth estimates.

Incorporating flotation costs into the ROE estimate, the 10.9% median estimate becomes 11.2%.

Q. Did you notice anything else on Ms. LaConte's DCF table on page 20?

A. Yes, I did. Ms. LaConte expresses concern with outlying growth rates on page 21 of her testimony. Of course, one way to deal with the potential impact of such outliers is to rely on the median rather than the average ROE estimate. Returning to her DCF table on page 20, the median ROE estimate for the group is 11.1% compared to the 10.6% average. Ms. LaConte chose not to report the median estimate which would have alleviated her concern with the impact of outlying estimates.

(iv). Ms. LaConte Erroneously Relies Upon the Plain Vanilla Version of the Capital Asset Pricing Model

Q. Does Ms. LaConte employ a CAPM estimate?

A. Yes. Ms. LaConte uses the plain vanilla CAPM, which understates the cost of capital, as discussed above and in my pre-filed direct testimony. Ms. LaConte's use of the plain vanilla CAPM understates the ROE for UE by approximately 50 basis points.

(v). Ms. LaConte's recommended ROE improperly ignores flotation costs

Q. Does Ms. LaConte adjust her recommended ROE to reflect flotation costs?

A. No. Ms. LaConte does not include any allowance whatsoever for flotation costs, and her recommended ROE is therefore understated by approximately 30 basis points. As discussed above, flotation costs represent the discounts that must be provided

to place new securities in the issues of new equity. As a result, Ms. LaConte's proposal leaves a legitimate expense unrecovered.

Q. Does Ms. LaConte explain why she does not provide an allowance for flotation costs in her recommended ROE for UE?

A. Her justification for omitting flotation costs on page 12 lines 15-18 defies logic and comprehension. She states:

> *"AmerenUE's parent company is planning to issue stock during the test period, therefore no cost is incurred."*

One would assume that if Ameren is indeed planning to issue stock, then there is all the more reason to recognize the costs associated with stock issuances. I fail to understand Ms. LaConte's logic.

(vi) Ms. LaConte's Risk Premium analysis is based on a selective and incomplete interpretation of my Risk Premium study.

Q. Does Ms. LaConte perform an independent Risk Premium study in her testimony?

A. No, she does not. Instead, she relies on the first component of my Risk Premium study, namely, my allowed Risk Premium study, but neglects the second component, namely, my historical Risk Premium study of the electric utility industry. On page 18 lines 13-14 of her testimony, she cites my ROE result of 10.1% derived from my allowed risk premium study method but fails to mention my ROE result of 10.5% derived from my historical risk premium study. No explanation is provided as to why she selected the first component of my risk premium study while ignoring the second component.

(vii) Ms. LaConte's criticisms of my testimony contains several statements and positions that are contrary to basic financial theory and empirical evidence. Such criticisms are unfounded.

Forecast MRP

Q. Is Ms. LaConte correct that most CAPM analyses rely on historical data when calculating the MRP and that my forecast method is not common?

A. No, absolutely not. On page 5 of her testimony, Ms. LaConte claims that the prospective method of estimating the MRP which I use in my testimony is relatively uncommon compared to the historical method of estimating the MRP. Clearly, Ms. LaConte is unaware of the vast published literature in finance journals on this subject. This literature is summarized in Chapter 4 of my textbook The New Regulatory Finance. A large portion of this extensive literature focuses on the prospective MRP, as I have done in my direct testimony. Typical of the prospective approach to estimating the MRP is the empirical study by Harris, Marston, Mishra, and O'Brien (2003) used in my direct testimony that provides estimates of the ex ante expected returns for S&P 500 companies over the period 1983-1998[20]. Also, prospective MRP studies by Ibbotson and Chen are cited in the annual Valuation yearbooks published by Morningstar (formerly Ibbotson Associates). In short, Ms. LaConte is incorrect in her claim that my prospective approach to estimating the MRP is uncommon.

Beta Estimate

[20] Harris, R. S., Marston, F. C., Mishra, D. R., and O'Brien, T. J., "*Ex Ante* Cost of Equity Estimates of S&P 500 Firms: The Choice Between Global and Domestic CAPM," Financial Management, Autumn 2003, pp. 51-66.

Q. Ms. LaConte claims on page 8 that the beta estimates for some of the companies (Empire District, MGE Energy) in my comparable group may be overstated due to lack of trading. Is she correct?

A. No, in fact the very opposite is true. The thin trading bias in measuring beta is well known and amply discussed in finance textbooks. For securities for which there is only periodic trading, beta estimates are downward biased and not overstated as Ms. LaConte claims. This is because observed returns contain stale information about past period returns rather than current period returns. Intuitively, if the stock market index surges forward but an individual company stock price remains unchanged due to lack of trading, the estimated beta is imparted a downward bias. The stock is unable to catch up to market-wide movements and appears to be a lower beta stock. In short, Ms. LaConte is plain wrong on this issue, and the betas of companies with a much lower market capitalization are *understated* and not overstated as Ms. LaConte claims.

ECAPM

Q. Please comment on Ms. LaConte's assessment of the empirical CAPM used in your testimony.

A. Ms. LaConte claims on page 7 of her testimony that the use of the ECAPM contradicts the efficient market theory. I have no idea as to the meaning of that statement. The ECAPM is not a theory but an empirical observation and has nothing to do with the notion of an efficient market.

Ms. LaConte also erroneously asserts that the use of the ECAPM is a beta adjustment and since Value Line betas have already been adjusted by analysts, no further adjustment is necessary. This is incorrect. The ECAPM analysis does not double-count

the effect of changing the slope of the plain vanilla CAPM. Contrary to such a suggestion, the ECAPM is not an adjustment (increase or decrease) in beta. Instead, the ECAPM is a formal recognition that the empirical evidence demonstrates that the observed risk-return tradeoff is flatter than predicted by the CAPM.

The ECAPM and the use of adjusted betas comprise two separate features of asset pricing. Assuming *arguendo* a company's beta is estimated accurately, the CAPM will still understate the return for low-beta stocks. Furthermore, if a company's beta is understated, the ECAPM will also understate the return for low-beta stocks. Both adjustments are necessary.

The graph on page 44 of my pre-filed direct testimony demonstrates that the ECAPM is a return (vertical axis) adjustment and not a beta (horizontal axis) adjustment. Moreover, the use of adjusted betas compensates for interest rate sensitivity of utility stocks not captured by unadjusted betas.

In sum, a plain vanilla CAPM will understate the return required for low-beta securities and overstate the return required for high-beta securities. The Empirical CAPM refines the plain vanilla CAPM to account for this phenomenon.

Historical Risk Premium

Q. Do you agree with Ms. LaConte's criticism of your historical risk premium study?

A. No, I do not. On pages 9-10, Ms. LaConte argues that UE is not comparable to the companies that make up Moody's Electric Utility Index and that therefore the historical risk premium based on this index is inapplicable to UE. I disagree. First, Ms. LaConte provides no foundation, empirical evidence, or study to substantiate her claim that

UE is not comparable to the companies that make up Moody's Electric Utility Index proxy. Second, over most of the long period that covers my historical risk premium study, 1926-2006, the electric utility was relatively homogenous in risk and under the umbrella protection of regulation for all of its functions (power generation, transmission, distribution).

DCF Growth Rates

Q. Please comment on Ms. LaConte's criticism of your DCF analysis.

A. On page 11 of her testimony, Ms. LaConte excludes two companies from my DCF analysis on the grounds that their growth rates are "high", and lowers the ROE accordingly from 11.6% to 10.3%. While she is quick to arbitrarily remove the "high" growth rates, she fails to remove the low estimates from the sample. Fairness requires that both so-called high and low estimates should be accorded similar treatment.

Q. Are there DCF estimates in Ms. LaConte's analysis that are less than the cost of debt?

A. Yes, there are several such estimates, as shown in Table 5 of Ms. LaConte's testimony.

Q. Please elaborate on why these estimates should be excluded.

A. Companies whose ROE estimates are less than these companies' cost of long-term debt should be excluded because these estimates of equity costs are implausible. Since investors are risk averse, they would not invest in equities unless they expected the risk premium to be non-negative.

Q. What happens to Ms. LaConte's DCF results if these estimates are removed?

A. Ms. LaConte should have excluded companies whose ROE estimates are less than these companies' cost of long-term debt because these estimates of equity costs are implausible. If we exclude these three estimates (Allete, IDACORP, Westar Energy) from the previous table, the average DCF result increases from 10.6% to 11.5%, an increase of almost 100 basis points.

Q. Has Ms. LaConte presented any arguments that would cause you to alter any of your recommendations and methodologies?

A. No.

V. CONCLUSION

Q. What do you conclude from Mr. Hill's recommended ROE?

A. Mr. Hill understates the appropriate ROE for UE. The following table summarizes the many reasons why Mr. Hill's recommended ROE vastly understates an appropriate ROE for UE. The first reason applies to both Mr. Hill's DCF and CAPM estimates, the next two pertain to Mr. Hill's DCF estimates, and the last three pertain to Mr. Hill's CAPM estimates:

Source	Basis Points
Flotation Cost Allowance [DCF/CAPM]	30
Sustainable Growth Calculation [DCF]	20
Analysts Growth Rate Forecasts [DCF]	130
Arithmetic vs Geometric mean [CAPM]	125
MRP Income Component of Bond Return [CAPM]	50
Empirical vs Raw CAPM [CAPM]	50

Correction of these understatements would increase Mr. Hill's recommended ROE based upon his DCF study from 9.28% to 11.08% and based upon his CAPM study from 9.37% (Mr. Hill's midpoint) to 11.12%, both of which are levels for UE that are comparable to my own recommendation.

Q. What do you conclude from Mr. Gorman's cost of equity analyses?

A. The following table summarizes the various understatements of UE's cost of common equity. The first reason applies to Mr. Gorman's DCF, CAPM and risk premium analysis estimates, the next two pertain to his DCF estimates, the next reason to his CAPM estimates, and the last one to his risk premium analysis.

Source	Basis Points
Flotation Cost Allowance [All]	30
GDP growth forecasts [DCF]	100-120
CAPM Historical MRP [CAPM]	50
Empirical vs Raw CAPM [CAPM]	50
Allowed Risk Premium [Risk Premium]	50
TOTAL	**400**

The amendments to the DCF alone would raise Mr. Gorman's recommendation based on his DCF study from 9.73% to at least 11.03% , based upon his CAPM study from 10.63% to 11.93%, and based upon his risk premium analysis from 10.46% to 11.26%.

Q. Do you agree with Mr. Hill and Mr. Gorman that adoption of their recommended ROE would not endanger UE's credit quality?

A. No. Both Mr. Hill and Mr. Gorman are incorrect in their assertions that adoption of their recommended ROEs would not endanger UE's current credit rating. Extreme decreases in UE's authorized ROE, such as the decreases suggested by Mr. Hill, could alarm the investment community, lower stock price, and threaten UE's credit ratings. A weakening of UE's credit ratings, stock price, and earnings power at a time when the UE needs to attract significant external capital on reasonable terms is ill-advised.

UE's risks will only increase with UE's significant capital investments necessary to provide service to his customers. Neither Mr. Hill nor Mr. Gorman addresses UE's

increased risks arising from his inability to fully fund its sizeable construction program with internal funds. A reduction in authorized ROE of the magnitude recommended by Mr. Hill can only aggravate the situation.

Q. What do you conclude from Ms. LaConte's recommended ROE?

A. Ms. LaConte understates the appropriate ROE for UE. A far greater emphasis on analysts' growth forecasts in the DCF analysis (130-260 basis points), the appropriate historical MRP in the CAPM analysis (50 - 140 basis points), and inclusion of an allowance for flotation costs (30 basis point) would suggest much higher returns that are quite close to my own recommended ROE.

I consider my critique of Ms. LaConte's recommended ROE to be conservative because for it reflects neither the consistent tendency of the DCF to understate ROE nor does nor the understatement of the cost of equity that results from the plain vanilla form of CAPM analysis used Ms. LaConte.

Q. Does that conclude your rebuttal testimony?

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 ROGER A. MORIN

PROVINCE OF NOVA SCOTIA)
) **ss**
COUNTY OF HALIFAX)

Roger A. Morin, being first duly sworn on his oath, states:

1. My name is Roger A. Morin. I work in Nova Scotia, Canada, and I am also employed by Georgia State 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 consisting of 58 pages, and Schedule RAM-RE9, all of which have 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.

Roger A. Morin

Subscribed and sworn to before me this 10th day of October, 2008.

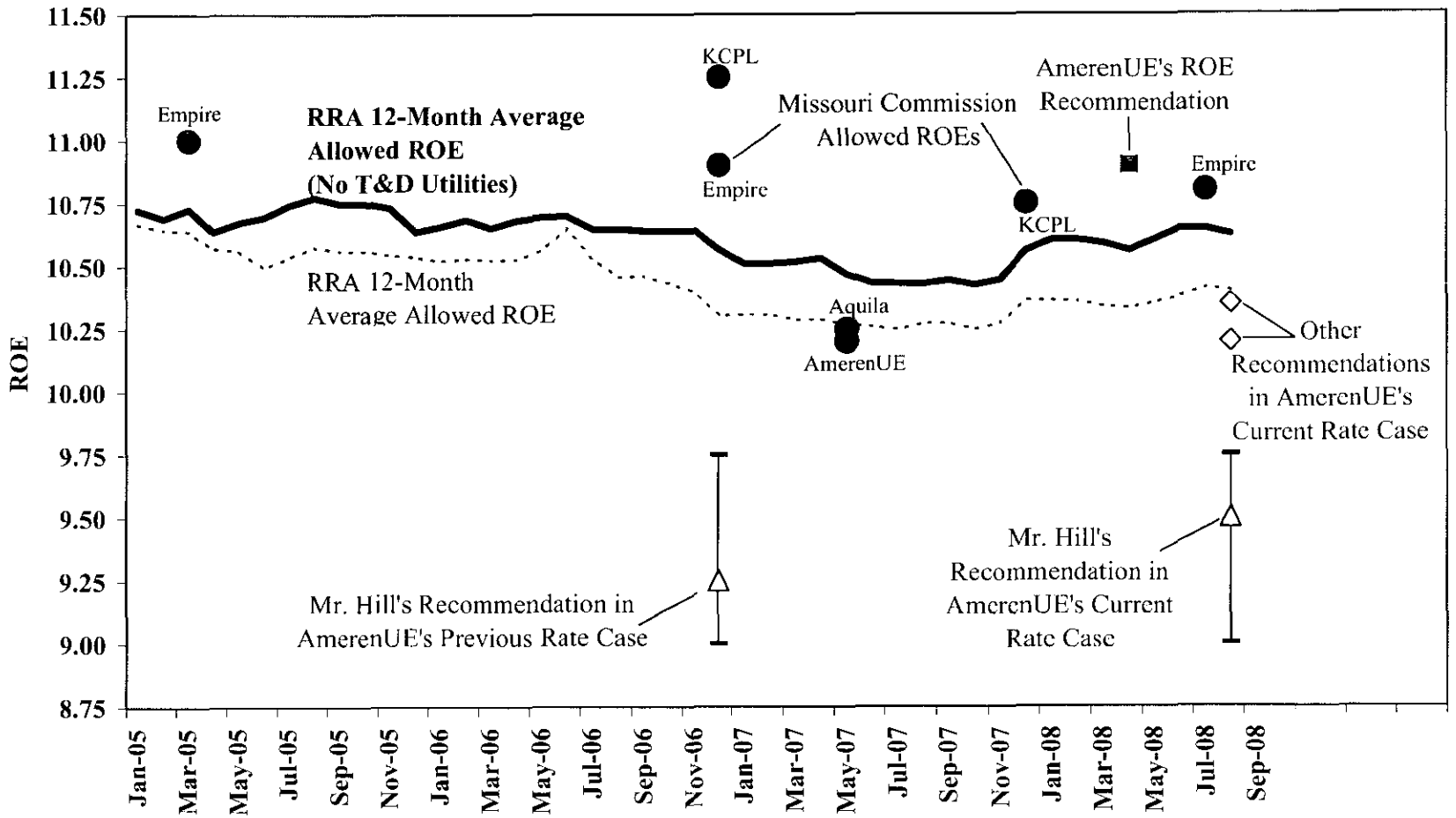
MICHAEL R. CROWELL
A Commissioner of the Supreme
Court of Nova Scotia

Notary Public

My commission expires: N/A

Michael R. Crowell

Missouri Utility Allowed ROEs and ROE Recommendations in Perspective



Schedule RAM-RE9