Exhibit No.:
Issue: *Rate of Return*
Witness: *Stephen G. Hill*
Sponsoring Party: *MoPSC Staff*
Type of Exhibit: *Rebuttal Testimony*
Case No.: *ER-2007-0002*
Date Testimony Prepared: *January 31, 2007*

REBUTTAL TESTIMONY

OF

STEPHEN G. HILL

ON BEHALF OF

THE MISSOURI PUBLIC SERVICE COMMISSION

UNION ELECTRIC COMPANY,
d/b/a AmerenUE

CASE NO. ER-2007-0002

Jefferson City, Missouri
January 2007

BEFORE THE PUBLIC SERVICE COMMISSION

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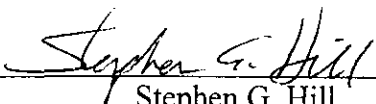
In the Matter of Union Electric Company d/b/a	)	Case No. ER-2007-0002
AmerenUE for Authority to File Tariffs Increasing	)	
Rates for Electric Service Provided to Customers in	)	
the Company's Missouri Service Area.	)	

AFFIDAVIT OF STEPHEN G. HILL

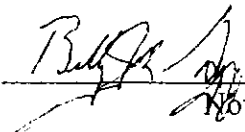|		
STATE OF WEST VIRGINIA	)	
	)	ss.
COUNTY OF PUTNAM	)	

Stephen G. Hill, of lawful age, on his oath states: that he has participated in the preparation of the foregoing Rebuttal Testimony in question and answer form, consisting of __60__ pages to be presented in the above case; that the answers in the foregoing Rebuttal Testimony were given by him; that he has knowledge of the matters set forth in such answers; and that such matters are true and correct to the best of his knowledge and belief.
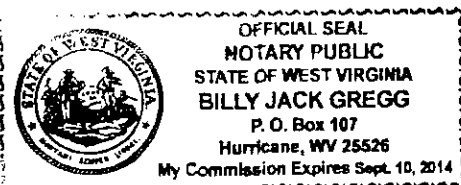
_____
Stephen G. Hill

Subscribed and sworn to before me this 27ᵗʰ day of January 20 07.

_____
Notary Public

1

2

3

4

5

6

TABLE OF CONTENTS OF

REBUTTAL TESTIMONY OF

STEPHEN G. HILL

UNION ELECTRIC COMPANY,

d/b/a AmerenUE

CASE NO. ER-2007-0002

13

REBUTTAL TESTIMONY OF

STEPHEN G. HILL

UNION ELECTRIC COMPANY,

d/b/a AmerenUE

CASE NO. ER-2007-0002

Q.   PLEASE STATE YOUR NAME, OCCUPATION AND ADDRESS.

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

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

A.   Yes, I am.

Q.   WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A.   I will respond to the cost of capital testimonies provided by AmerenUE (the Company) witnesses Dr. James H. Vander Weide and Ms. Kathleen C. McShane.

Q.   HOW IS YOUR REBUTTAL TESTIMONY ORGANIZED?

A.   I will address each cost of capital analysis presented by Company witnesses Vander Weide and McShane, describing the shortcomings in each and underscoring the reasonableness of the Staff's position on that issue in this proceeding. I discuss Dr. Vander Weide's testimony first and then turn to the testimony of Ms. McShane in the few areas where it is different, methodologically, from that of Dr. Vander Weide. My Rebuttal Testimony will include discussions of: a) the selection of proxy companies, b) the application of the

1 Discounted Cash Flow (DCF), Capital Asset Pricing Model (CAPM), and additional risk

2 premium equity cost estimation techniques, and c) a flotation cost adjustment to the market-

3 based cost of equity capital.

4 However, at the outset of my testimony I will discuss the Company's position

5 regarding the appropriate capital structure to be used in determining the cost of capital in a

6 rate base/rate of return rate proceeding such as this. Both Dr. Vander Weide and

7 Ms. McShane have recently changed their testimony on this issue, and now recommend the

8 use of market-value capital structures in setting utility rates. The result of their change in

9 methodology is a higher equity cost estimate. Moreover, that new methodology is unorthodox

10 in regulation and is based on an improper application of long-standing capital structure

11 theory.

12 **MARKET-VALUE CAPITAL STRUCTURES**

13 Q. CAN YOU BRIEFLY SUMMARIZE THE ISSUE RELATED TO THE USE

14 OF MARKET-VALUE CAPITAL STRUCTURES?

15 A. Both Company witnesses take the position in this proceeding that

16 in determining the cost of capital to be applied to AmerenUE's original cost rate base,

17 market-value capital structure percentages should be used to calculate the overall cost of

18 capital. Because utility common equity market prices are currently well above book value,

19 market-value capital structures have larger percentages of common equity (the most

20 expensive form of capital) than book-value capital structures. Therefore, the overall cost of

1   capital derived in that manner is substantially higher than that derived using book-value

2   capital structures—the traditional ratemaking method.[1]

3   While the Company witnesses cite theoretical rationale supporting the use of

4   market-value capital structures, that theory has been in place for fifty years and standard

5   regulatory practice during that time has been to set rates using book-value capital structures

6   with market-based equity costs and embedded debt and preferred stock costs. The use of

7   market-based equity costs and book-value capital structures remains virtually universal in

8   regulation.

9   Both Dr. Vander Weide and Ms. McShane followed the standard ratemaking

10   methodology (i.e., using book-value capital structures to determine overall capital costs) for

11   many years, but have recently changed their position on that issue. The result of that change

12   in methodology is a higher cost of equity for their utility clients. The equity returns generated

13   by this new technique exceed the return investors require for utility stocks and, if the

14   Company's market-based capital structure methodology is adopted, would allow an

15   uneconomic transfer of wealth from ratepayers to stockholders, unfairly enriching

16   stockholders at ratepayer expense. This Commission should not rely on market-value capital

17   structures when setting rates in this proceeding.

18   Q.   IF APPROVED BY THE COMMISSION, WHAT SORT OF RATE IMPACT

19   WOULD RESULT FROM THE COMPANY'S MARKET-VALUE CAPITAL

20   STRUCTURE ADJUSTMENT?

---

[1] When market prices were <u>below</u> book value (and the use of market-value capital structures would have resulted in allowing equity returns that were <u>below</u> market-based costs) this ratemaking methodology now advocated by the Company witnesses was nowhere to be found. In fact, when market prices were below book value, Dr. Vander Weide recommended that market-based equity returns be considered a "bare minimum" level—precisely the opposite result that would obtain from his newly adopted paradigm. (Vander Weide Direct Testimony, Docket #81-163-E, Carolina Power & Light, p. 35)

1   A.   Company witness McShane increases her cost of equity estimate by 100 basis

2   points because of a market-value capital structure adjustment (McShane Direct, p. 4, both

3   testimonies). Using the Staff's recommended rate base of approximately $5.4 Billion for

4   AmerenUE's gas and electric operations, and assuming a combined 40% tax rate,

5   Ms. McShane's 100 basis point increase to the cost of equity due to her use of market-value

6   capital structures would unnecessarily increase costs to the Company's Missouri ratepayers

7   by $47 Million every year [1.0% x (1/(1-40%) x 52.49% equity ratio x $5.4 Billion =

8    $47.2 Million].

9   Dr. Vander Weide increases his recommended return on common equity by

10   70 basis points because of a market-value capital structure adjustment (Vander Weide Direct,

11   p. 43).[2] His adjustment, if approved by this Commission, would unnecessarily increase costs

12   to AmerenUE's ratepayers by $33 Million annually [0.70% x (1/(1-40%) x 52.40% equity

13   ratio x $5.4 Billion Rate Base = $33.1 Million].

14   As described in detail below, this type of adjustment is unwarranted for both

15   practical and theoretical reasons. It is simply not an expense Missouri ratepayers should be

16   required to bear. Moreover, prior to two years ago, neither of the Company's rate of return

17   witnesses would have made the adjustment.

18   Q.   JUST TO BE CLEAR, WHEN YOU USE THE TERMS "BOOK-VALUE

19   CAPITAL STRUCTURES" AND "MARKET-VALUE CAPITAL STRUCTURES," WHAT

20   DO YOU MEAN?

---

[2] Dr. Vander Weide's adjustment would be similar to that of Ms. McShane if he had relied on current market-value capital structures, as she did. However, because Dr. Vander Weide relied on a historical average of market-value capital structures with lower equity ratios, his "adjustment" to the cost of equity was slightly smaller than that of Company witness McShane.

1   A.   Book-value capital structures represent the actual mix of capital used by the

2   firm and are calculated based on the dollar amount of each form of capital (common equity,

3   preferred stock, and long-term) appearing on the books (balance sheet) of the firm. The

4   market-value capital structure is a percentage mix of capital in which the amounts of capital

5   are measured based on their market value.

6   For common equity capital, the total dollar amount of equity, measured on a

7   market basis, is the number of shares outstanding times the current market price. If the

8   prevailing interest rates are lower (higher) than the coupon rate of a firm's debt, the market

9   value of that debt will be higher (lower) than the face amount. That is, the market value of a

10   thousand-dollar 7% bond will be higher than $1000 if the prevailing interest rate for that type

11   of security is lower than 7%. However, unless current interest rates are very different from

12   embedded debt costs, the fair value of a firm's debt will approximate its book value. It

13   appears that both Company witnesses have assumed that the market value of the debt of their

14   sample companies is equal to its book value, and the "market-value" capital structures they

15   use to determine the overall cost of capital are actually a hybrid mix of market and book

16   value.

17   Q.   YOU NOTED PREVIOUSLY THAT THE USE OF MARKET-VALUE

18   CAPITAL STRUCTURES INSTEAD OF BOOK-VALUE CAPITAL STRUCTURES

19   RESULTS IN HIGHER COST OF CAPITAL ESTIMATES, CORRECT?

20   A.   Yes. In today's market environment, with utility stock prices well in excess of

21   book values, market-value capital structures will have common equity ratios that substantially

22   exceed book-value capital structures. Because equity capital is about twice as expensive as

1   debt capital on a pre-tax (ratemaking) basis, the use of market-value capital structures

2   substantially increases the estimate of utilities' cost of capital.

3   Of course, one reason that utility market prices are well above book value is

4   that investors expect utilities to earn returns on book value that exceed the returns investors

5   require (the cost of capital).[3] If the Company's new capital structure methodology were used

6   to set utility rates, allowed returns would rise. Higher earned returns would cause utility

7   market prices and market-to-book ratios to rise, even though the cost of capital (investors'

8   required return) is unchanged. Higher earned returns and the resulting higher stock prices

9   would also cause the equity ratio of market-value capital structures to increase; calling for

10 still higher allowed returns for utilities (if market-value capital structures are used to set

11 rates). Therefore, the result of using market-value capital structures in rate-setting is circular,

12 and would lead, if adopted by regulators, to higher and higher allowed returns even if the cost

13 of capital were constant.

14   Q.   CAN YOU PROVIDE A SIMPLE EXAMPLE TO SHOW HOW THE USE

15 OF MARKET-VALUE CAPITAL STRUCTURES WOULD RESULT IN HIGHER

16 ALLOWED RETURNS THAN TRADITIONAL RATEMAKING METHODS?

17   A.   Yes. Let's assume a regulated utility has a book-value capital structure

18 consisting of 50% equity and 50% debt. Also assume that the equity cost is 10% and the debt

19 cost is 6%. In that instance, under long-accepted standard ratemaking techniques, the overall

20 cost of capital to be applied to the utility's rate base is 8.0%.

---

[3] Gordon, M.J., The Cost of Capital to a Public Utility, MSU Public Utilities Studies, East Lansing, Michigan, 1974, pp., 63-65.

1   Table I

2   Book-value Capital Structure

Capital	Percent	Cost Rate	Wt. Cost
Equity	50%	10%	5.00%
Debt	50%	6%	3.00%
Total	100%		8.00%

3

4   Let's also assume that the market price of our example utility is twice its book

5   value. For simplicity of exposition, we will also assume that the market price of our utility's

6   debt equals its book value. Given those assumptions, the market value of the equity of our

7   utility is twice the market value of its debt, and the market-value capital structure would

8   consist of 67% common equity and 33% debt. Using a market-value capital structure to

9   determine the overall cost of capital, using the same capital costs, would produce an overall

10 cost of capital of 8.68%.

11   Table II

12   Market-value Capital Structure

Capital	Percent	Cost Rate	Wt. Cost
Equity	67%	10%	6.70%
Debt	33%	6%	1.98%
Total	100%		8.68%

13

14   Company witnesses Vander Weide and McShane now would recommend that

15 this Commission use an overall return of 8.68% to set rates in this proceeding. When the

16 8.68% overall cost of capital based on a market-value capital structure is used to set rates—

1 rather than the book-value capital structure—the allowed return on book equity (the equity

2 return included in rates) increases from 10% (the cost of equity capital) to 11.36%.

3 Table III

4 Market-value Overall Return Applied to Book-value Capital Structure

Capital	Percent	Cost Rate	Wt. Cost
Equity	50%	11.36%	5.68%
Debt	50%	6.00%	3.00%
Total	100%		8.68%

5 As this example shows, the use of a market-value capital structure in rate

6 base/rate of return regulation becomes a means by which utilities can be allowed equity

7 returns (11.36%) that exceed cost of equity capital (10%).

8 Q. CAN YOU ELABORATE ON THAT POINT—THE USE OF MARKET-

9 VALUE CAPITAL STRUCTURES IS A MEANS BY WHICH UTILITIES CAN BE

10 ALLOWED EQUITY RETURNS THAT EXCEED THE COST OF CAPITAL?

11 A. Yes. The new ratemaking paradigm suggested by Company witnesses Vander

12 Weide and McShane will result in regulated utilities being allowed equity returns which

13 exceed the cost of capital, as shown in the numerical example above. Allowing equity returns

14 that exceed the return investors require (the cost of capital) runs counter to ratemaking

15 standards of Hope and Bluefield, will be economically inefficient, and will cause an

16 unnecessary transfer of wealth from ratepayers to stockholders.

17 By basing a ratemaking mechanism on the market value of a utility rather than

18 the depreciated original cost is a recipe for exacerbating, or at least perpetuating, the current

19 difference between utility market price and book value. When a firm is allowed to earn a

20 return higher than the return investors require for that risk-class of security (the cost of

1 capital), investors are drawn to that security and, through arbitrage, the price increases. Using

2 a ratemaking methodology that codifies the allowance of equity returns that exceed investor

3 requirements will cause higher market value-to-book value ratios. As I noted above, this

4 would cause an untenable circular result of higher and higher allowed returns—absent any

5 change in the actual cost of equity capital.

6   Also, the use of market-value capital structures as a basis for ratemaking turns

7 the concept of depreciated original cost ratemaking on its head. From an economic point of

8 view, a market-value capital structure is more closely related to a "fair value" measure of the

9 utility plant. A market-value capital structure is, by definition, the value the market puts on

10 the capital invested in the firm, based on current market conditions and expectations. In that

11 way, it can be said to represent the "fair value" of the company's utility investments in

12 today's marketplace.

13   In response to a ratemaking proposal that considered market-value capital

14 structures, the West Virginia Public Service Commission strongly rejected the use of market

15 values to determine rates. That Commission saw a recommended adjustment to the cost of

16 equity based on market values as an attempt to supplant original cost rate base regulation with

17 fair value rate base regulation, which is illegal in that state.

18 "Additional examples of the Company witness raising his sights
19 above what a reasonable analysis produces can be found in the
20 market value adjustments that he makes. His water group DCF
21 analysis would be only 8.98%; however, he leverages this
22 number up by 54 basis points, or .54%, to reflect the fact that
23 stockholders pay market prices for stock and those market
24 prices may exceed the book value of a utility's rate base. Thus,
25 the Company asks us to effectively depart from our long-
26 standing use of an original cost rate base. We could do this by
27 simply applying the derived rate of return, before market price
28 leveraging, to an inflated rate base that exceeds book value or,
29 in the alternative chosen by the Company, we can continue to
30 use original cost rate base and apply an inflated rate of return to

1   that rate base." (W.V.P.S.C. Case No. 03-0353-W-42T, West

2   Virginia-American Water Works, January 2, 2004, p. 18.)

3   The Company's use of a market-based capital structure to produce a

4 ratemaking cost of equity, as noted by the West Virginia Commission, effectively asks this

5 Commission to set rates for AmerenUE on something other than depreciated original cost.

6   Q.   THE COMPANY WITNESSES CLAIM THAT WHEN MARKET-VALUE

7 COMMON EQUITY RATIOS ARE GREATER THAN BOOK-VALUE COMMON

8 EQUITY RATIOS, A FINANCIAL RISK DIFFERENCE EXISTS (i.e., THERE IS MORE

9 LEVERAGE AND MORE FINANCIAL RISK IN THE BOOK-VALUE CAPITAL

10 STRUCTURE), AND THAT FINANCIAL RISK DIFFERENCE MUST BE ADDRESSED

11 IN THE ALLOWED RETURN. IS THERE MORE FINANCIAL RISK?

12   A.   No. The Company is making a theoretically improper comparison between

13 market-value capital structures and book-value capital structures in order to claim that a

14 financial risk difference exists. When asked to provide support from the financial literature

15 that specifically discusses financial risk differences between market-value capital structures

16 and book-value capital structures, Company witnesses Vander Weide and McShane were

17 unable to do so. They provided references to theoretical discussions of market-value capital

18 structures, but were unable to provide finance literature to support their claim that differences

19 between market-value and book-value capital structures connote differences in financial risk.

20 (see Staff Data Request Nos. 194 and 213) There is no theoretical support for their position.

21   When utility common equity market prices are above book value, the capital

22 structure measured with market values will have a higher equity percentage and a lower debt

23 percentage than the capital structure measured with book value. That does not signify any

24 difference whatsoever in financial risk, as the Company witnesses would have this

25 Commission believe. In its use of market-value capital structures, the Company is claiming

1 that one firm or type of firm can have two levels of financial risk. This is not possible.

2 Q.   WHY IS IT IMPOSSIBLE FOR ONE TYPE OF COMPANY TO HAVE

3 TWO LEVELS OF FINANCIAL RISK?

4 A.   There can be no "difference" in financial risk for one company or one type of

5 company at one point in time, regardless of the relationship between market price and book

6 value. Yet, that is a basis for the Company's market-value capital structure adjustment.

7   Financial risk is created by the impact of interest payments on the volatility of

8 a firm's income stream. As the dollar amount of interest expense increases relative to the

9 operating income available to pay debt service, the volatility of the income available to

10 stockholders (a residual that flows to stockholders after interest payments are met) increases,

11 thus creating more risk for the stockholders. It is the additional interest expense that causes

12 the increase in the volatility of the income available to stockholders. This is a standard

13 description of financial risk that is found in textbooks.[4]

14   In other words, financial risk is a function of the amount of fixed charges or

15 debt expense incurred by the firm and the impact of those fixed charges on the variability of

16 the income available to the stockholder. Therefore, when the actual amount of borrowed

17 funds increases, causing the dollar amount of fixed charges to increase, financial risk

18 increases. On that issue, all parties agree.

19   However, there is no change in fixed charges when one compares market-value

20 capital structures and book-value capital structures. The genesis of financial risk—the actual

21 interest payment—is constant. Because of that fact, one company (or group of companies) at

22 one point in time cannot have two levels of financial risk, no matter how the capital structure

---

[4] See, for example, Brigham, E. F., Intermediate Financial Management, 5th Ed, 1996, Dryden Press, Fort Worth TX, pp. 361-364.

1   ratios are measured. That is because the amount of fixed charges (the debt costs) does not

2   change.

3   Market-value capital structure and book-value capital structure are different

4   ways to measure the capitalization of a company; they do not represent differences in the

5   level of fixed charges incurred. Differences in market-value and book-value capital structure

6   cannot, therefore, reflect differences in financial risk for one company or group of companies

7   at any one point in time. Therefore, the Company's position that their recommended upward

8   adjustment to the cost of equity capital is related to financial risk differences that exist

9   between market-value and book-value capital structures is simply incorrect.

10   Q.   CAN YOU PROVIDE AN EXAMPLE TO SHOW THAT THE FINANCIAL

11   RISK DOES NOT CHANGE WHEN THERE IS A DIFFERENCE BETWEEN MARKET

12   PRICE AND BOOK VALUE?

13   A.   Yes. Relying on the same hypothetical utility example cited above: a utility

14   with $100 of debt that has a 6% cost rate, and $100 of equity on its books, has a book-value

15   capital structure of 50% equity/50% debt. Also, our utility's market price is double its book

16   value. The market valuation would then be $200 equity and $100 debt (we assume here again

17   that the market value of debt is equal to book value). The market-value capital structure is

18   67% equity and 33% debt.

19   There is no difference in financial risk because, no matter how one measures

20   the capital structure, the income stream does not change (i.e., the volatility of the revenue

21   stream is unchanged), and our utility company has the same fixed charges to pay—$6 (6% x

22   $100 of debt capital). The fixed cost of the debt is what creates the financial risk and that

23   factor *cannot* be different unless the company adds or deletes debt capital. Thus, one company

24   (or one type of company) at one point in time cannot have two levels of financial risk. Yet,

1   that is the basis of the Company's market-value capital structure adjustment to the cost of

2   equity.

3   The Company's position on the measurement of a firm's capital structure is

4   tantamount to saying that 16 ounces is heavier than one pound because 16 is a larger number

5   than 1. However, there is no difference in the factor being measured—one pound weighs the

6   same no matter what units are used to measure it—ounces, grams, or tons. Similarly, there is

7   one level of financial risk inherent in the capital structure of any firm at one point in time, no

8   matter how that capital structure it is measured. The Company's claim that financial risk

9   differences exist because of market-to-book ratio differences is simply incorrect.

10   Q.   THE COMPANY WITNESSES TESTIFY THAT FINANCIAL THEORY

11   SUPPORTS THE USE OF MARKET-VALUE CAPITAL STRUCTURES. IS THAT TRUE?

12   A.   The Company's testimony regarding the existence of market-value capital

13   structure theory is correct. However, that does not mean that market-value capital structures

14   are appropriate in rate base rate of return regulation.

15   First, while there is certainly support in the financial literature for the use of

16   market-based capital structures, there is also support for the use of book-value capital

17   structures in the literature of corporate finance. For example, Michael Erhardt (The Search for

18   Value: Measuring the Company's Cost of Capital, Harvard Business School Press, Boston,

19   MA, 1994), himself a proponent of market-based capital structures, cites support by Elliot[5]

20   and Beranek[6] for the use of book-value weights in calculating the overall cost of capital for

21   capital budgeting purposes. Other financial authors who recommend the use of market-based

---

[5] Elliot, G. S., "Analyzing the Cost of Capital," *Management Accounting*, 62(6) (1980): 13-18.

[6] Beranek, W. "The Weighted Average Cost of Capital and Shareholder Wealth Maximization," *Journal of Financial and Quantitative Analysis*, 1977, 12(1), 17-31.

1 capital structure also recognize that book-value weights can be used to determine the overall

2 cost of capital:

3   "The weights [of the capital components] could be based
4   on the accounting values shown on the firm's balance sheet
5   (book values), on the market values of the different securities
6   shown on the balance sheet, or on management's estimation of
7   the firm's optimal capital structure." (Brigham, E. F., Gapenski,
8   L. C., Intermediate Financial Management, 5th Ed., Dryden
9   Press, Fort Worth, TX, 1996, p. 190).

10 Second, investors are exposed to book-value capital structure information, not

11 market-value capital structures. Book-value capitalization data is predominant in financial

12 reporting. In fact, in the financial data provided to investors, market-based capital structures

13 are rarely reported. In its reports to the Securities and Exchange Commission and the financial

14 community, Ameren provides book-value capital structures, not market-value capital

15 structures. Investor services such as Value Line and Standard & Poor's report book-value

16 capitalization figures for the companies they follow, they do not report market-value capital

17 structures. Bond rating agencies publish ratings benchmarks based on book-value debt/equity

18 ratios, not market-value debt/equity ratios.

19 Therefore, it is almost exclusively book-value capital structure information to

20 which investors are exposed during their assessment of equity investment opportunities, and,

21 if markets are informationally efficient (a fundamental assumption in cost of equity estimation

22 and modern financial economic theory), book-value capital structure data, not market-value

23 capital structures, are incorporated into the stock prices that investors are willing to provide.

24 Third, even if the Company were able to prove conclusively that market-value

25 capital structures were the only capital ratios considered by investors, the use of book-value

26 capital structures with original cost ratemaking is a long-standing paradigm of regulation.

27 Impounded in the market price investors are willing to provide for utility stocks is investors'

1 expectation that the regulatory construct that has existed for many decades (based on book-

2 value capital structures) will continue. Investors understand that when rates are set for utilities

3 the overall cost of capital will be determined using book values, and they base their

4 investment decisions (the price they are willing to provide for utility stock) on that basis—not

5 on the basis of market-value capital structures.

6 Fourth, and most damaging for both Dr. Vander Weide and Ms. McShane, the

7 theories regarding the use of market-value capital structures have been in place for roughly

8 50 years. Both witnesses have, until recently, ignored those theories and have based their

9 return recommendations in sworn testimony on book-value capital structures—the standard

10 regulatory procedure. Their insistence that regulators should, now, pay attention to theories

11 that they, themselves, have ignored until recently diminishes the credibility of their position.

12 Q. HAS DR. VANDER WEIDE ADMITTED THAT HE HAS RECENTLY

13 CHANGED HIS COST OF CAPITAL ESTIMATION METHODOLOGY?

14 A. Yes. In a deposition of Dr. Vander Weide in the 2004 Empire District Electric

15 proceeding, the following colloquy took place:

16 "Q. Now, we also asked you a data request to indicate when
17 you began doing this particular calculation and what cases, and
18 you gave us four cases all in '04. Do you recall that, the
19 Dominion Resources, the PG&E Company, Empire and Mid-
20 America Energy?
21 A. Right. Yes, I do recall that.
22 Q. And prior to your filing testimony with this method in those
23 cases, did you use another method?
24 A. I didn't -- I did everything up to the fair rate of return the
25 same. That is, I would do a DCF and a risk premium study, by I
26 did not take the final step of saying that cost of equity
27 determines why those risk -- why those DCF risk and premium
28 studies be sufficient to allow the company to earn returns that
29 are comparable to the returns investors expect of other
30 companies of comparable risk, and, thus, be able to attract
31 capital.

1   And so it's only recently that I took the final step of
2 asking, well, what is required in order to attract capital in the
3 marketplace?
4 Q.   And could you explain to me why you recently changed
5 your methodology for determining ROE and you just recently
6 started performing this leverage adjustment that you just
7 described?
8 A. Yes. Because I didn't believe that just looking at the results
9 of DCF and CAP-M and risk premium model would allow the
10 companies to attract capital in the marketplace, because the
11 marketplace looks at current interest rates and market value
12 capital structures. Applying cost of DCF models and risk
13 premium models and CAP-M models to the company's book
14 value capital structures will be insufficient to allow the
15 companies to attract capital in the marketplace.
16 Q. So for the previous 30 years when you weren't utilizing this
17 leverage adjustment, you were doing it incorrectly?
18 A. I was doing it partially. I was correctly applying the DCF.
19 I was correctly applying the risk premium and CAP-M. I did
20 not take the final test, which I believe is necessary to allow the
21 company to attract capital in the marketplace. I don't believe
22 it's incorrect. It just wasn't complete.
23 Q.   So for 30 years you thought it was appropriate to
24 recommend an incomplete DCF recommendation to public
25 utility commissions?
26 A.   I viewed my assignment in those -- during that time as
27 providing the results of cost-of-equity models, such as the DCF
28 and the CAP-M and risk premium. I did not view my
29 assignment as taking the further step of recommending the rate
30 of return that would allow a company to truly attract capital in
31 the marketplace. I knew that it was incomplete, but I didn't
32 view my assignment as taking that additional step.
33 Q. And when did your assignment change?
34 A. In the testimonies that I cited.
35 Q. And why did your assignment change?
36 A. Because I informed the companies that I was working with
37 that if we did things in the way we always have, they would not
38 be able to attract capital in the marketplace, and they agreed
39 that I ought to take the additional step to make sure they could
40 attract capital in the marketplace." (Deposition of James Vander
41 Weide, Case No. ER-2004-0570, Empire District Electric
42 Company, November 12, 2004, pp. 79-81)

43   In the Deposition cited above, Dr. Vander Weide admits that he has recently

44 changed his cost of capital methodology, giving up on the method he used for many, many

1 years.[7] His term for it is "changing his assignment." However, Dr. Vander Weide changed his

2 assignment on his own accord and then informed his clients the change would be appropriate.

3 Dr. Vander Weide claims he "knew that if we did things the way we always have"

4 (i.e., applying equity cost estimates to book-value capital structures) his clients "would not be

5 able to attract capital in the marketplace." However, Dr. Vander Weide has provided no

6 evidence that utilities have been unable to attract capital when their rates are set using book-

7 value capital structures.

8   If setting utility rates on book-value capital structures had not been providing

9 investors the returns they require, investors would not provide capital for that type of

10 investment, and the amount of capital invested in utilities would stagnate or decline.

11 However, the available evidence indicates that both the electric and gas utility industries have

12 been increasing their capital base at steady and substantial rates. For example, recently

13 available data regarding total capital for a group of gas distributors over the past ten years and

14 projected five years into the future is shown in the chart below.[8]

---

[7] When the questioner in the Deposition references a "leverage adjustment," what he is referring to is Dr. Vander Weide's use of a market-value capital structure. It is the use of a market-value capital structure to determine the rate-making overall cost of capital that Dr. Vander Weide refers to as the "additional step" in his cost of equity analysis.

[8] Data from Value Line *Ratings & Reports*, September 15, 2006, companies included: AGL Resources, Atmos Energy Corporation, Laclede Group, Nicor, Inc., Northwest Natural Gas, Piedmont Natural Gas Company, South Jersey Industries, Southwest Gas, and WGL Holdings.

1

GAS UTILITY CAPITAL FORMATION

All data from Value Line, September 15, 2006.

2

3
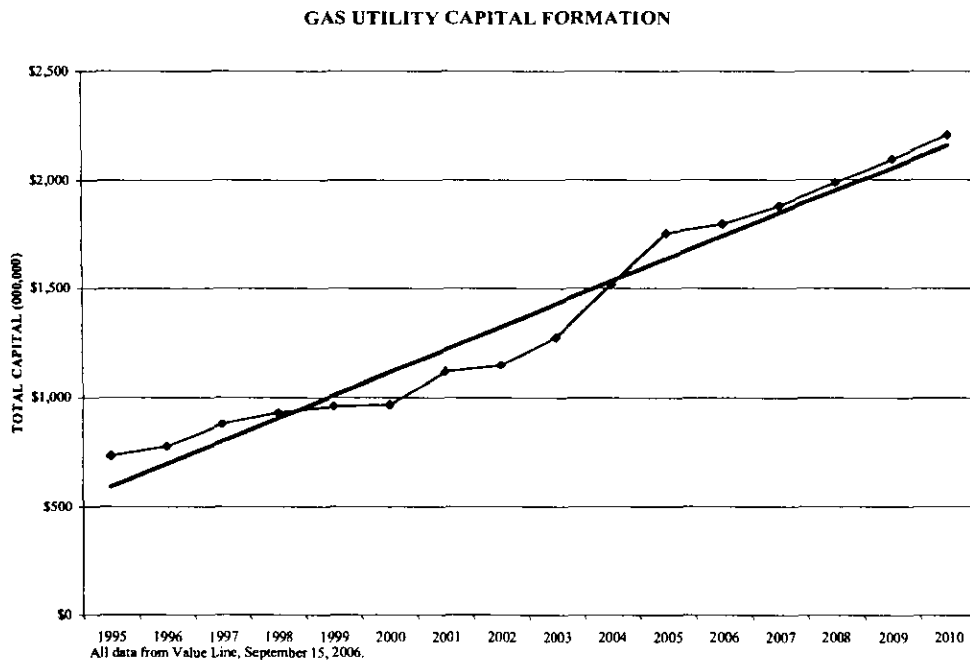
4   This chart shows that gas distributors over the past ten years have, on average,

5 added capital at a very strong and steady rate and are expected to continue to do so in the

6 future. In 1995 the average amount of total capital per company in a sample of gas

7 distributors was about $700 Million.[9] In 2005, that figure was about $1.5 Billion per

8 company, more than double the amount ten years earlier; and by 2010 (the mid-point of Value

9 Line's 2009-2011 projection period), the average gas distribution company is expected to

10 have about $2.07 Billion of total capital. This has happened under regulatory regimes that use

11 book-value capital structures to set rates, and clearly those utilities have been able to attract

12 substantial amounts of capital.

---

[9] The gas distributors are those included in Mr. Hill's gas distribution sample group.

1   Q.   HOW DOES DR. VANDER WEIDE RATIONALIZE HIS USE OF

2   MARKET-VALUE CAPITAL STRUCTURES IN THIS PROCEEDING?

3   A.   At page 9 of his Direct Testimony in this proceeding Dr. Vander Weide

4   testifies that "[e]conomists measure the percentages of debt and equity in a firm's capital

5   structure by first calculating the market value of the firm's debt and the market value of its

6   equity." However, the economic theory on which he now elects to rely is one that was in

7   existence during the previous 30 years when he "did things the way we always have"—i.e.,

8   applying equity cost estimates to book-value capital structures and embedded cost rates.

9   Dr. Vander Weide cannot reliably claim that theory now requires the use of market-value

10   capital structures, when the same theory (in place since the 1950s) did not require the use of

11   market-value capital structures in his testimony during the thirty-year period prior to 2004.

12   Dr. Vander Weide has attempted to deflect scrutiny regarding his fundamental

13   change in methodology by claiming that he either didn't know or didn't pay attention to the

14   type of capital structure used by his client utilities over the past thirty years. In a recent

15   telephone utility rate case in Maine in which Dr. Vander Weide and I were participants, when

16   he was asked how many of his prior rate case testimonies had used book-value capital

17   structures for rate-setting purposes, Dr. Vander Weide answered as follows:

18   "In traditional rates cases, Dr. Vander Weide has generally only
19   been asked to estimate a company's cost of equity, not its
20   capital structure. Hence, Dr. Vander Weide does not keep track
21   of what capital structure has been used to set rates. In some
22   instances, Dr. Vander Weide has provided a calculation of the
23   overall rate of return implied by his testimony of the cost of
24   equity and the company's recommended capital structure. In
25   those cases, Dr. Vander Weide does not provide a justification
26   for the company's recommended capital structure. Rather, he
27   has used the company's recommended capital structure for the
28   purpose of performing the required calculation."(Verizon
29   Maine, Docket No. 2005-155, OPA Data Request 19-5a)

1   This response is simply obfuscation. A cost of capital witness does not make

2   his or her recommendation in a vacuum. In order to know if any adjustments must be made to

3   the equity cost estimate, a financial analyst must first know the capital structure of the

4   applicant utility as well as the average capital structure of the sample group of similar-risk

5   utilities used to estimate the cost of equity. Dr. Vander Weide's attempt to deflect scrutiny

6   regarding the change in his capital structure methodology and his long history of

7   recommending that equity cost estimates be applied to book-value capital structures, by

8   claiming that the capital structures were supplied by others and, thus, his responsibility is

9   limited in the matter, is not credible.

10   The fact that, in the past, Dr. Vander Weide has based his cost of capital

11   estimates on book-value capital structures for rate-setting purposes is also confirmed in the

12   following recent cross-examination of Dr. Vander Weide in the State of Washington.

13   "Q. Well, let's go back to my original question, Dr. Vander
14   Weide, and that is that during a period from 1975 up through
15   2004, your cost of capital and capital structure testimony relied
16   on the use of book value capital structures, didn't it, through
17   2004?
18   A. I'm not entirely sure what you mean by the word relies. I've
19   just testified, I normally did not recommend a capital structure;
20   I recommend a cost of equity.
21   Q. All right. When – were the capital structures that were used
22   in those cases based on book value?
23   A. Yes." (Cross-examination of James Vander Weide,
24   Washington Utilities and Transportation Commission, Docket
25   No. UE-050684, PacifiCorp, Transcript Vol. XIII, February, 3,
26   2006, p. 1631, 1632)

27   Although he claimed that the use of market-value capital structures is

28   appropriate for rate-setting purposes, Dr. Vander Weide admitted in the Washington rate

29   proceeding cited above that the application of equity cost estimate to book-value capital

30   structures is a universal practice in regulation and utilities appropriately file their rate requests

31   based on book-value capital structures.

1   "Q. Isn't it true that standard regulatory practice with electric
2   utilities is to use book value capital structures for rate-setting
3   purposes?
4   A. Yes, it is, and that's why I suggest that when one is going to
5   use the parent's – make an adjustment to the parent's cost of
6   equity using a capital structure, one ought to also use a book
7   value capital structure there to be consistent.
8   Q. Okay. Now, PacifiCorp has filed its rate request based on its
9   book value capital structure in this case haven't they?
10   A. Yes.
11   Q. The company wasn't wrong to do that, were they?
12   A.   No."(Cross-examination   of   James   Vander   Weide,
13   Washington Utilities and Transportation Commission, Docket
14   No. UE-050684, PacifiCorp, Transcript Vol. XIII, February 3,
15   2006, p. 1629)

16   Q.   DO YOU HAVE SPECIFIC EVIDENCE THAT DR. VANDER WEIDE

17   FOLLOWED STANDARD REGULATORY PRACTICE AND UTILIZED BOOK-VALUE

18   CAPITAL STRUCTURES IN PRIOR TESTIMONY?

19   A.   Yes. In response to Staff Data Request No. 200, Dr. Vander Weide provided

20   copies of his prior testimonies, which show that he made no mention of the manner in which

21   "economists measure the percentages of debt and equity," and relied on book-value capital

22   structures in recommending overall returns.

23   For example, in a 2003 testimony at the Federal Energy Regulatory

24   Commission on behalf of San Diego Gas & Electric (Docket No. ER03-601-000), Dr. Vander

25   Weide presents an "Economic and Legal Principles" section which is, verbatim, the same as

26   that presented in his testimony in this case from page 7, line 9 through page 9, line 8. That

27   section of his testimony in this case diverges from what he provided in 2003 at the point

28   where he inserts the question, "[h]ow do economists measure the percentages of debt and

29   equity in a firm's capital structure?" That portion of his testimony in this case discussing

30   market-value capital structures, which begins at page 9, line 9, and goes through page 10,

31   line 20, does not exist in his 2003 FERC testimony. However, following that new section of

1   testimony, Dr. Vander Weide's testimony in this case, again, tracks verbatim with that he

2   filed at FERC in 2003, all the way through his discussion of the ratemaking principles in

3   Bluefield.[10]

4   In addition, in prior testimony on behalf of Southern Company in determining

5   the appropriate return to use in determining the price to be included in a unit power sale

6   agreement, Dr. Vander Weide relied on book-value capital structures, and confirms that a

7   determination of the cost of equity is inextricable from the determination of the capital

8   structure to which the equity cost is to be applied:

9   "...there is a fundamental relationship between the development
10   of a recommended return on equity and the capital structure to
11   which that return would be applied."(Vander Weide Direct,
12   Southern Company, FERC Docket No. ER-98-1096. p. 42, ll. 7-
13   9)

14   In other testimonies, such as his testimony in Virginia Natural Gas, V.C.C.

15   Case No. PUE940054 (pp. 36-41), Dr. Vander Weide relies on Value Line's published capital

16   structure ratios in determining the appropriate overall cost of capital. Value Line's published

17   capital structure ratios for utilities are book value ratios.

18   Finally in another testimony provided in response to Staff Data Request

19   No. 200, Dr. Vander Weide makes clear that, for rate base, rate-of-return regulation, the use

20   of book-value capital structures is appropriate.

21   "Book values are appropriate for regulatory purposes because
22   regulators measure the return on investments in terms of
23   accounting or book values of assets rather than the market value
24   of assets." (Vander Weide testimony, Public Service Electric &
25   Gas, Docket Nos. PUC-7347-97, PUC-7348-97, EO-07070461,
26   EO-97070462, p. 59, l. 23, through p. 60, l. 3)

---

[10] The same is true for Dr. Vander Weide's testimony in the following cases: Northern Natural Gas, FERC
Docket No. RP03-398-000; Pacific Gas & Electric Company, California PUC Docket No. A-02-05-022; Pacific
Gas & Electric, FERC Docket No. 03-660-000; Florida Power Corporation, F.P.S.C. Docket No. 000824-EI;
North Carolina Natural Gas Corporation, N.C.P.U.C. Docket No. G-21, Sub 424; Mid-American Energy
Company, I.U.B. Docket No. RPU-02-10.

1   Q.   HAS THERE BEEN ANY SORT OF REGULATORY SETTING WHERE

2   THE CONSIDERATION OF MARKET-VALUE CAPITAL STRUCTURES MIGHT HAVE

3   BEEN CONSIDERED?

4   A.   Yes. When the Federal Communications Commission created proceedings

5   designed to determine a cost for leasing local exchange telecommunications network loop

6   elements to competitors in order to promote competition, it did so under a framework called

7   Total Elemental Long Run Incremental Cost (TELRIC) pricing. Under that scenario, leasing

8   costs were estimated based on the costs of a telephone system projected into the future

9   (as opposed to rate base rate of return regulation which focuses on the depreciated original

10   cost of utility plant). The concept, I believe, was that network costs in the future would be

11   lower than current costs. Therefore, focusing on costs of future plant would provide

12   competitors lower loop leasing costs, allowing easier entry.

13   I have testified in TELRIC proceedings in the past and have, in those cases,

14   supported the consideration of both book-value capital structures as well as market-value

15   capital structures for the purpose of determining an overall cost of capital. The rationale for

16   the consideration of market-value capital structures in that special type of regulatory

17   proceeding was that the capital structure was supposed to represent the manner in which the

18   telephone company would most likely capitalize its plant in the future. The capital structure

19   represented by market values represented one possible means of capitalizing future telecom

20   loop operations. Of course, so did book-value capital structure, because there was no reason

21   to believe that the phone company would finance its future investments in a fundamentally

22   different manner than it had in the past. Also considered in the selection of an appropriate

23   future network capitalization was the incremental utilization of debt and equity financing

24   evidenced in telephone company cash flow statements. Nevertheless, in that specialized

1 regulatory framework—i.e., the pricing of unbundled network elements—the consideration of

2 market-value capital structures was reasonable as one of several capital structure options.

3 The other instance in which market-value capital structures are used is in the

4 quantification of financial risk, i.e., when comparing one market-value capital structure to

5 another market-value capital structure. The econometric analyses used to estimate the impact

6 of financial risk differences on the cost of equity rely on the original capital structure theory

7 work of Miller and Modigliani.[11] That theoretical work is based solely on market-value

8 capital structures. Therefore, the equity cost adjustment formulas extracted from that work are

9 applied using only market-value capitalization.

10 However, in this proceeding, neither one of those special cases exist. We are

11 charged here with the task of estimating what AmerenUE's rates should be under a standard

12 rate base/rate-of-return regulatory regime. The use of market-based capital structures in the

13 context of this rate case, or in the context of any base rate case, is simply not appropriate.

14 Q. HAS DR. VANDER WEIDE RECOMMENDED THE USE OF MARKET-

15 VALUE CAPITAL STRUCTURES IN TELECOMMUNICATIONS PROCEEDINGS?

16 A. Yes. More than half of Dr. Vander Weide's cost of capital testimonies have

17 been prepared on behalf of telephone companies, and he has, for several years, recommended

18 the use of market-value capital structures in those proceedings.

19 Q. DOES THE FACT THAT DR. VANDER WEIDE RECOMMENDED

20 MARKET-VALUE CAPITAL STRUCTURES FOR TELECOMMUNICATIONS

21 COMPANIES FOR SEVERAL YEARS, DIMINISH IN ANY WAY THE FUNDAMENTAL

22 INCONSISTENCY OF HIS POSITION REGARDING THE APPROPRIATE COST OF

23 CAPITAL IN RATE BASE-RATE OF RETURN CASES SUCH AS THIS?

1   A.   No. It is reasonable to believe that, because there has been very little rate case

2 activity in the telecommunications industry, the substantial portion of Dr. Vander Weide's

3 testimony in telecommunications cases in recent years has been in UNE-loop cost

4 proceedings or some other alternative regulation format. As I noted above, the consideration

5 of market-value capital structures in that specialized regulatory construct was one option.

6 However, it was not reasonable, even in that special setting, to rely solely on market-value

7 capitalization. Hence, the fundamental inconsistency in Dr. Vander Weide's testimony

8 regarding capital structure in this proceeding remains.

9   For a very long period of time, Dr. Vander Weide testified that utility rates

10 should be determined through the application of equity costs to book-value capital structures.

11 He took that position despite the fact that concurrent capital structure theory "required" the

12 use of market-value capital structures. At some point in the more recent past, Dr. Vander

13 Weide abandoned that position with regard only to telephone utilities, but continued to testify

14 that the appropriate cost of capital for energy utilities was based on book value. Then, a

15 couple of years ago, Dr. Vander Weide decided to "view his assignment differently," and now

16 insists that the use of market-value capital structures is appropriate in regulation of all types

17 of utilities.

18   Regardless of the fact that Dr. Vander Weide may have relied on market-value

19 capital structures in some telephone proceedings, his position regarding the proper capital

20 structure to use in base rate cases has been fundamentally inconsistent; and, in the current

21 environment of low capital costs and high market prices, his position has the result of

22 inflating his equity return recommendations. This Commission should not rely on Dr. Vander

23 Weide's testimony regarding the capital structure to be used in determining what

---

[11] Modigliani, F., Miller, M., "The Cost of Capital, Corporation Finance and the Theory of Investments,"

1 AmerenUE's rates would be under a standard rate base/rate-of-return regulatory regime, it

2 should use a reasonable book value proxy for the Company's capital structure.

3 Q.   HAS COMPANY WITNESS McSHANE ALSO RECENTLY CHANGED

4 HER POSITION ON THE APPROPRIATE CAPTIAL STRUCTURE TO USE IN SETTING

5 UTILITY RATES?

6 A.   Yes. Ms. McShane's response to Staff Data Request No. 177 indicates that all

7 the cases in which she utilized market-based capital structure occurred in 2005 and 2006. In

8 response to Staff Data Request No. 177.1, Ms. McShane indicates in all prior testimony in

9 Missouri prior to the instant case, she utilized book-value capital structures. As shown by her

10 testimony in AmerenUE's last rate case (provided in response to Staff Data Request No. 163,

11 Case No. EC-2002-1, Cross-Rebuttal Testimony, pp. 20-29), Ms. McShane testified that rates

12 should be based on AmerenUE's actual book-value capital structure.

13 Also, in a recent testimony filed in Canada, drawing a distinction between the

14 regulation of utilities and the regulation of automobile insurance companies, Ms. McShane

15 informed the Board of Public Utilities Commissioners of Newfoundland and Labrador that

16 book value capital structures were appropriate for setting utility rates, and rate base is

17 predicated on original costs.

18 "Rate base, as defined by the Board, consists of 'the amount of
19 investment on which a regulated utility is allowed to earn a fair
20 return. Rate base comprises primarily depreciated investment in
21 plant and equipment plus working capital as well as certain
22 deferred assets/costs attributable to future operations." The
23 public utility's rate base in Newfoundland and Labrador, as in
24 the preponderance of regulatory jurisdictions in Canada, is
25 measured on the basis of original (accounting) costs.
26
27 The Board also defines a just and reasonable allowed rate of
28 return on rate base as 'equivalent to the cost of capital

American Economic Review. June 1958, 261-297.

1   representing the sum of the weighted costs of both debt and

2   equity in the capital structure.'

3

4   The capital structure ratios, like the rate base, as also measured

5   on the basis of the book values (as contrasted with market

6   values) of debt, preferred stock and common equity." (Kathleen

7   McShane Testimony on behalf of the Insurance Bureau of

8   Canada, before the Board of Commissioners of Public Utilities,

9   Newfoundland and Labrador, November 8, 2004, p. 5)

10   Finally, as a point of reference, in the testimony cited above, Ms. McShane

11 also notes that the average equity return allowed investor-owned Canadian utilities in 2002

12 through 2004 was 9.5%, on an average common equity ratio of 37% (op cit, p. 7).

13   Q.   DO YOU HAVE ANY FINAL COMMENTS ON THE USE OF BOOK-

14 VALUE CAPITAL STRUCTURES FOR THE PURPOSE OF DETERMINING THE COST

15 OF CAPITAL AND RATES IN RATE BASE REGULATION?

16   A.   The use of a book-value capital structure to determine overall capital costs in

17 traditional utility rate proceedings does not have to be justified; it is a long-standing universal

18 practice—a fact which even Dr. Vander Wide acknowledges. Book-value capital structure has

19 long been used to determine the capital costs associated with a depreciated original-cost rate

20 base. Investors are aware of that regulatory practice and, through efficient markets,

21 incorporate it into the stock prices they provide for utility equities. Investors are also aware

22 that capital structure data—whether obtained through the Securities and Exchange

23 Commission, regulatory bodies such as FERC or the FCC, company annual reports, bond

24 rating agencies, or investor services available in hardcopy or on the internet—is universally

25 presented as book value, i.e., the capital values that appear on the books of the company.

26   While it is certainly true that the capital structure theory in textbooks refers to

27 market values, this has been the case since the 1950s. In the ensuing fifty years, regulated

28 utility rates have been based on book-value capital structures and during that time utilities

1   have been able to attract the capital necessary to provide the service required by the public.

2   The determination of AmerenUE's revenue requirement under traditional regulation in this

3   proceeding should be based on well-established, traditional regulatory methods. The use of

4   book-value capital structures to determine the overall cost of capital is the rate-making

5   methodology that should be used in this proceeding.

6   **COMPANY COST OF EQUITY ANALYSES**

7   Q.   HOW WILL THIS PORTION OF YOUR TESTIMONY BE STRUCTURED?

8   A.   Although Dr. Vander Weide offers one testimony in this proceeding and

9   Ms. McShane offers two testimonies, they both analyze electric and gas utilities. Also, both

10   witnesses use the same two types of analyses—the DCF, and risk premium analyses—

11   although they differ in some respects. In general, I will discuss Dr. Vander Weide's analysis

12   initially and then, to the extent that Ms. McShane's analysis is different from that of

13   Dr. Vander Weide, I will discuss that portion of her analysis. My analysis reveals that the

14   Company witnesses DCF cost of equity estimates are somewhat overstated, but their risk

15   premium analyses produce results that are substantially in excess of the current cost of equity

16   capital for utilities. Moreover, the Company witnesses' heavy reliance on less reliable risk

17   premium analyses causes their equity return recommendations in this proceeding to overstate

18   the Company's current cost of equity capital.

19   Prior to discussing the details of the Company's cost of capital analyses,

20   however, I will address another topic. Although both Company witnesses undertake

21   Discounted Cash Flow (DCF), they both tend to de-emphasize those results as "unreliable"

22   and, instead, rely more heavily on risk premium-type results. The rationale provided by the

23   Company against the DCF is not persuasive, and actually underscores the shortcomings of the

1 | particular type of DCF analysis undertaken by the Company witnesses, not the DCF itself.

2 | Moreover, I will show in the discussion below that it is the Company's risk-premium analyses

3 | that are unreliable and deserve to have their results de-emphasized, not the DCF.

4 | Evidence of the DCF's reliability is found in the fact that the DCF results of all

5 | of the cost of capital witnesses in this proceeding are remarkably similar. For example, Ms.

6 | McShane's Schedules KCM-E4, E5 and E6, show median (middle value) DCF results for her

7 | electric sample group of 10.4%, 9.2%, and 9.4%.[12] The average of which is 9.7%. For her gas

8 | companies, Schedules KCM-G4, G5, and G6, show median DCF results of 8.8%, 10.2% and

9 | 9.4% (average = 9.5%). Dr. Vander Weide's Schedule JVW-1 indicates a median cost of

10 | equity for his electric utilities of 9.43%, and his Schedule JVW-2 indicates a median cost of

11 | equity for his gas companies of 9.68%.[13] My own Schedule 7, attached to my Direct

12 | Testimony in this proceeding, shows median DCF equity cost estimates for the electric and

13 | gas sample groups of 9.13% and 9.18%, respectively.

14 | Therefore, the DCF results of the witnesses in this proceeding prescribe a cost

15 | of capital for AmerenUE ranging between 9.1% and 9.7%. My equity return recommendation

16 | in this proceeding, 9.25%, falls within that range. Therefore, while there is a substantial

17 | difference in the ultimate recommendations of the cost of capital witnesses in this proceeding,

18 | that difference is due to the Company witnesses' heavy reliance on over-stated, unreliable risk

19 | premium results, while the more-reliable DCF equity cost estimates before the Commission in

---

[12] The median is used to describe the centrality of the witnesses' results here because the average can be skewed by an outlier (a result that is very different from the others). For example, Ms. McShane's Schedule KCM-E5-1 shows a DCF result for TXU of 34%--nearly three times higher that any of the other results. Including that unrealistic result in the average results in an average DCF of 11%. However, the median value of those results (reported by Ms. McShane on Schedule KCM-E5-1) is 9.2%, which more accurately respresents the central nature of those results.

[13] Dr. Vander Weide uses a market-value average of his results, giving more weight to the DCF result of very large companies (some of which have significant unregulated operations), and reports a higher average value for his DCF results. The average of a set of values can be skewed by outliers, therefore, the median value is used as a means of comparison here.

1   this proceeding uniformly indicate a cost of equity capital well below 10%. As I noted in my

2   Direct Testimony, a cost of equity capital below 10% is supported by many indications in the

3   capital marketplace today—not the least of which is the Company's own retirement portfolio

4   return expectation.

5   Q.   WHAT RATIONALE HAS THE COMPANY PROVIDED FOR NOT

6   RELYING ON THE DCF COST OF EQUITY ESTIMATES IN THIS PROCEEDING?

7   A.   At page 26 of his Direct Testimony, Dr. Vander Weide testifies that the DCF is

8   unreliable because cost of equity results from that model have, "displayed considerable

9   volatility over the last several years." There are several reasons why Dr. Vander Weide's

10 rationale does not support his position that DCF results should be de-emphasized.

11   First, and most obvious, Dr. Vander Weide's study period (September, 1999-

12 April, 2006), encompasses the California/Enron/energy trading debacle that created one of the

13 biggest electric industry upheavals in recent memory. In addition, some of the companies in

14 Dr. Vander Weide's sample group (e.g., Duke Energy) were directly involved in the mess;

15 some companies had created energy trading operations or unregulated generation arms during

16 that time—all of which were affected by the demise of Enron (AEP, Reliant, Southern

17 Company) and which they have now shed; and some of the companies were not in existence

18 during the entire study period (Pepco Holdings, Exelon Corp.). Therefore, any conclusions

19 drawn about the volatility of DCF results during that period with those companies are simply

20 not reliable enough to be the basis for a generalized rejection of the DCF model.

21   Second, Dr. Vander Weide's DCF analysis is mechanistic, which can lead to

22 volatile results. In calculating a DCF cost of capital, Dr. Vander Weide simply plugs in the

23 average I/B/E/S projected 5-year earnings growth rate as the long-term sustainable growth. If

24 three analysts surveyed by I/B/E/S think that company XYZ will produce earnings growth of

1 5% over the next five years, then that is Dr. Vander Weide's DCF growth rate. If, in the next

2 month, a merger is announced and the analysts expect the earnings growth to be 10% over the

3 next five years, Dr. Vander Weide's DCF estimate for XYZ increases 500 basis points for that

4 month. Although DCF theory indicates that, over the long term, earnings, dividends and book

5 value will grow at the same rate—indicating that there is valuable information for investors in

6 projected dividend and book value growth—Dr. Vander Weide ignores any such data that

7 might temper changes in investors' long-term growth expectations. He simply assumes that

8 the only growth rate investors consider is the 5-year earnings growth rate published by

9 I/B/E/S. This mechanistic DCF calculation increases the volatility of Dr. Vander Weide's

10 DCF results and, therefore, the volatility that he measures in his own results is due in part to

11 his own analytical technique, not to any inherent shortcomings of the DCF model itself.

12 Third, Dr. Vander Weide's position on the reliability of the DCF in this case is

13 different from his position in other, recently filed, testimony. In his cost of capital testimony

14 before the Public Utilities Commission of Maine in Docket No. 2005-155 (Verizon Maine),

15 Dr. Vander Weide estimated the cost of equity using only a DCF model—no risk premium, no

16 CAPM, only the DCF. It is not reasonable to believe that the DCF can be so reliable as to be

17 the only method of estimating the cost of equity in one case and, then, be "too volatile" to be

18 accurate in another.

19 Q.   WHAT RATIONALE DOES COMPANY WITNESS McSHANE OFFER

20 FOR DE-EMPHASIZING DCF RESULTS?

21 A.   At pages 24 and 25 of her Direct Testimony, Company witness McShane sets

22 out two reasons for de-emphasizing DCF results: 1) her DCF estimates are "widely

23 dispersed," and 2) her DCF estimates have been volatile over time. Ms. McShane also notes

24 that her DCF results disagree with risk indications evident in published beta coefficients.

1   Ms. McShane's rationale is very similar to that of Dr. Vander Weide and fails to support her

2   thesis that the DCF is unreliable for similar reasons.

3   First, like Dr. Vander Weide, Ms. McShane performs a mechanistic DCF

4   analysis in which she inserts earnings growth projections as the long-term sustainable growth

5   expected by investors—without any examination of other published projected growth rates

6   available to investors. That mechanistic approach causes her to post a nonsensical DCF result

7   for TXU of 34% (Schedule KCM-E5-1). With untenable results like that, of course her DCF

8   results will be "widely dispersed," but that is a fault of her particular brand of DCF

9   methodology, not the model itself.

10   Second, in assessing volatility, like Dr. Vander Weide, Ms. McShane chooses

11 to rely on her mechanistic-method DCF results from 1998 through 2006—a time of turmoil in

12 the industry—turmoil that no longer exists. Again, any equity cost results gleaned from that

13 period of time cannot be generalized and attributed to "flaws" in the DCF model.

14   Third, Ms. McShane's reference to perceived differences in beta risk

15 indications also fails to support the Company's DCF unreliability thesis. It is beta that is an

16 unreliable risk indicator, not the DCF. As I noted in my Direct Testimony, beta has been

17 shown in the financial literature to be a poor indicator of relative risk and return, showing

18 very little difference between low-risk and high-risk stocks over time.[14] Also, beta

19 coefficients have very low correlation coefficients, indicating that, to the extent they are able

20 to explain any relationship between risk and return for individual stocks, they explain very

21 little of it.

22   The unreliability of beta is also shown in Ms. McShane's own Schedule

23 KCM-E3-2, which displays average Value Line betas for her electric utility sample group

1   from 1996 through 2005. Those data show that <u>as risks increased</u> when electric utilities

2   diversified, created energy trading desks, and became involved in the western energy crisis,

3   <u>beta coefficients declined</u>. Then, when utility investment <u>risk declines</u> as the California/Enron

4   crisis fades, the move toward de-regulation grinds to a halt, and utilities return to a back-to-

5   basics strategy by shedding unprofitable unregulated operations, <u>betas increase</u>. Here, the

6   Company offers evidence that beta has moved in the opposite direction from the investment

7   risk in the electric industry. The unreliability of beta is one reason why the CAPM (one of the

8   risk premium methods preferred by the Company witnesses) does not provide a reliable

9   estimate of the cost of equity capital.

10   Finally, it is important to understand that Value Line betas (the risk benchmark

11 Ms. McShane uses to "test" the DCF), are based on relative stock price volatility between a

12 particular stock and the market. In theory, that's all investors need to know to assess relative

13 risk. However, in reality that measure can lead to counter-intuitive results. As I show in my

14 Direct Testimony, at page 45, over the past five years (including California/Enron and the

15 "dot-com" stock market pull-back) utility stock prices have been more volatile than those of

16 the general stock market. However, that really is a result of the relatively low-risk, safe-haven

17 aspect of utilities in an uncertain market. Utility stock prices have increased more rapidly than

18 those of the general market because investors have sought the lower-risk utility investment.

19 However, the manner in which beta is measured shows an increase, not a decrease in the

20 relative risk of utilities over the past five years. Ms. McShane's reference to beta as a means

21 to support her contention that the DCF produces unreliable results does not provide any

22 indication whatsoever with regard to the veracity of the DCF and, instead, calls into question

23 the reliability of beta and, thus, CAPM cost of equity estimates.

---

[14] Fama, French, "The Cross-Section of Expected Stock Returns," *Journal of Finance*, Vol. 47, No. 2 (June

1   In summary, the Company witnesses' attempts to cast doubt on the reliability

2 of DCF equity cost estimates are not based on sound rationale, and ultimately fail to support

3 their position. Moreover, the similarity of the DCF results presented by three independent

4 experts in this proceeding also shows that DCF results are less volatile and less subject to

5 manipulation than risk premium-type equity cost estimates and, therefore, more reliable.

6 **DISCOUNTED CASH FLOW**

7   Q.   WHAT SPECIFIC COMMENTS DO YOU HAVE REGARDING THE

8 DETAILS OF THE COMPANY'S DCF ANALYSES?

9   A.   Dr. Vander Weide uses the following DCF formulation to estimate equity

10 capital costs:

11
$$k = [d_1(1+k)^{.75} + d_2(1+k)^{.50} + d_3(1+k)^{.25} + d_4]/P_0 + g \qquad (1)$$

12   This particular version of the DCF model produces cost of equity results that

13 are higher than the standard DCF model. Aside from the obvious mathematical complexity of

14 this model, which requires an iterative solution and makes it doubtful that the average

15 investor actually uses it, this version of the DCF model implicitly assumes that dividends

16 increase every quarter. However, that is not the manner in which dividends are actually paid

17 out by utilities. Usually, after dividends are raised, they are kept at a constant level for several

18 quarters. It would be very unusual if any of the companies analyzed by the Company witness

19 raised their dividend every quarter.

20   The rationale supporting a constantly increasing dividend is grounded on the

21 ability of investors to reinvest those dividends every quarter in equivalent risk/return

22 investments to earn the incremental "time value of money". That rationale may, or may not,

1992)

1   represent the actual actions of investors. Regardless, it is not the ratepayers' responsibility to

2   provide the investor the additional return he or she might receive by reinvesting the quarterly

3   dividend.

4   In addition, the Company's logic is circular. If, for example, this Commission

5   allowed a higher equity return based on that reinvestment logic, and the higher return

6   translated into a larger dividend, the investor could then take the higher return (in the form of

7   a larger dividend) and reinvest it — expecting a still higher return. Then, would it not be that

8   higher return — drawn from reinvesting those larger dividends — that he or she really

9   expects? Should rates not, therefore, be based on the expectation of compounding the new,

10 larger dividend? The Company's compounding treatment, if taken literally, would have

11 investors expecting, and regulators awarding, higher and higher rates of return to account for

12 larger and larger dividends. The logic is circular, would lead to over-earning, and is without

13 merit.

14 The Federal Energy Regulatory Commission (FERC), in its Generic Rate of

15 Return rulemaking proceedings held during the 1980s and early 1990s, considered and

16 rejected the use of a DCF model that compounds the quarterly dividend. The FERC held in

17 Order 461 (37 FERC ¶61,287) that if the allowed return were determined using a DCF model

18 that included the dividend compounding recommended by Dr. Vander Weide, the investors

19 would be compensated twice, "--once by the utility [through the allowed rate of return] and

20 once through the investors' reinvestment of the dividends in some other alterative

21 investment."

22 Company witness McShane does not include a quarterly compounding

23 adjustment in the DCF analysis.

1   Q.   WHAT GROWTH RATE DOES DR. VANDER WEIDE USE IN HIS DCF

2   ANALYSES?

3   A.   Dr. Vander Weide relies exclusively on earnings growth forecasts.

4   Q.   WHAT ARE YOUR COMMENTS ON THE EXCLUSIVE USE OF

5   PROJECTED EARNINGS GROWTH RATES IN A DCF ESTIMATE OF THE COST OF

6   EQUITY?

7   A.   In my view, earnings growth rate projections are widely available, are used by

8   investors and therefore deserve consideration in an informed, accurate assessment of the

9   investor expected growth rate to be included in a DCF model. I do not believe, however, that

10   projected earnings growth rates should be used as the *only* source of a DCF growth estimate

11   as witness Vander Weide has done in this case. In other words, projected earnings growth

12   rates are influential in, but not determinative of, investor expectations.

13   Q.   PLEASE EXPLAIN WHY EXCLUSIVE RELIANCE ON ANALYSTS'

14   PROJECTED EARNINGS GROWTH RATES CAN PRODUCE UNRELIABLE RESULTS.

15   A.   First, it is important to realize that, as I have previously noted in my Direct

16   Testimony in Appendix B, projected growth rates may over- or understate the growth that can

17   be sustained over time by the companies under review. This is important because sustainable

18   growth is required in an accurate DCF assessment of the cost of equity capital. The efficacy

19   of projected earnings growth rates in any specific DCF analysis can only be determined

20   through a study of the underlying fundamentals of growth—something that Dr. Vander Weide

21   fails to do by relying exclusively on analysts' earnings growth rate projections.

22   Second, there is often associated with the exclusive use of analysts' projected

23   earnings growth rates an erroneous notion of "consensus," i.e., that projected earnings growth

24   rates are what investors are using to estimate return requirements and that those estimates

1   closely agree. However, what is often called a "consensus" earnings growth expectation are,

2   in reality, quite divergent with earnings growth rate expectations showing wide variation.

3   A simple average of those projected growth estimates may or may not represent investors'

4   consensus expectations regarding the long-term growth. Nevertheless that is the assumption

5   that Dr. Vander Weide makes in his testimony.

6   Finally, as evidenced in headlines in the financial media in recent years, the

7   sell-side institutional analysts that are polled by I/B/E/S and similar services offer relatively

8   "rosy" expectations for the stock they follow—even when the analyst's actual expectations

9   for the stock are not so sanguine. Simply put, some analysts overstate growth expectations to

10   make the stocks look better. Although claims are often made that the opinions of sell-side

11   analysts are not affected by the profits made by the other parts of the business that actually

12   trade those securities, the recent events in the marketplace underscore that concern.

13   Therefore, while what is known as the "Cinderella effect" (analysts' overstating stock

14   expectations) is not a new phenomenon, the recent concern in the financial markets regarding

15   this issue underscores the need for caution in the use of earnings growth expectations in

16   estimating the cost of equity capital.

17   This concern regarding investors' use of analysts' growth estimates is

18   underscored by an investor's advisory service sponsored by the *Wall Street Journal*:

19   "You should be careful when looking at analyst
20   recommendations for several reasons. First of all, many analysts
21   suffer from a conflict of interest between the firm that employs
22   them and the company whose stock they track. Often times, an
23   analyst will be responsible for issuing reports on a company
24   that is a current or potential client of their employer (usually an
25   investment bank). Since they know that their employer would
26   like to keep the client's business, the analyst may be tempted to
27   issue a rosier outlook for the stock than what it really deserves."
28   (Investorguide.com, "University," Analysts and Earnings
29   Estimates, www.investorguide.com/igustockanalyst.html)

1   Ms. McShane, to her credit, recognizes the tendency of the sell-side analysts

2   polled by I/B/E/S to overstate earnings expectations (McShane Direct, p. 22), and elects to

3   rely on Value Line earnings growth projections in addition to those published by I/B/E/S.

4   However, while Ms. McShane relies on projected earnings growth published by Value Line,

5   she chooses to ignore Value Line's dividend and book value growth projections, which are

6   published right next to its earnings growth projections and are equally available to investors.

7   As shown on Schedule 5, pages 2 and 4, attached to my Direct Testimony in this proceeding,

8   the average of Value Line's earnings, dividend and book value growth rate projections for

9   electric and gas utilities is 4.38% and 4.52%, respectively. Value Line's earnings growth rate

10   projections for those companies are higher—5.53% and 5.67%, respectively. These data show

11   that by focusing only on earnings (only part of the projected growth rate data available to

12   investors), Ms. McShane has likely overstated investor expectations regarding long-term

13   sustainable growth and the DCF cost of equity capital.

14   Q.   DON'T COST OF CAPITAL EXPERTS THAT RELY EXCLUSIVELY ON

15   EARNINGS GROWTH PROJECTIONS REFER TO ACADEMIC STUDIES THAT SHOW

16   ANALYSTS' GROWTH RATE ESTIMATES TO BE "SUPERIOR" TO HISTORICAL

17   GROWTH RATES?

18   A.   Yes, and Dr. Vander Weide is the author of one of those studies. However,

19   while such studies do show that projected growth rates are superior to simple, mechanical

20   averages of historical growth rates, they do not suggest that projected earnings growth rates

21   are determinative of investor expectations. What those studies actually do is make a good case

22   for the consideration of analysts' growth rate forecasts in a reasoned examination of investor

23   growth rate expectations. I quite agree with that premise, and that is how I have elected to use

24   analysts forecasts in my DCF analysis, i.e., as part of a thorough analysis of growth rate

1   expectations. However, those studies do not provide a rationale for an *exclusive* reliance on

2   earnings growth rate projections. Certainly analysts' growth rate projections can influence

3   investor expectations, but it is unreasonable to conclude that they determine those

4   expectations exclusively.

5   On this point, both Dr. Vander Weide and Ms. McShane also cite a paper

6   published by Professor Myron Gordon (widely regarded as the "father" of the DCF),

7   regarding the usefulness of analysts' projected earnings growth rates. The Company witnesses

8   give the impression that Professor Gordon is an advocate of relying solely on that type of

9   growth. This is not the case.

10   It is true that, in the article cited, Professor Gordon opines that analysts'

11   projections are better DCF growth rate measures than earnings growth rates derived solely

12   from financial statements. A review of the entire article, however, reveals that the financial

13   statement data to which Professor Gordon refers is historical data over the past five years.

14   That is essentially the same result reached by Dr. Vander Weide's study. However, the fact

15   that analysts' growth rate projections outperform simple historical averages, again, is

16   unsurprising, and does not mean that analysts' earnings growth projections are the sole

17   determinant of investor expectations.

18   Finally, Professor Gordon, in the article cited by Dr. Vander Weide and

19   Ms. McShane, published his opinion regarding the rather unsurprising fact that analysts'

20   earnings growth rate estimates outperform simple historical growth rate averages, as well as

21   his opinion regarding the reliability of sustainable (retention) growth rates.

22   "...the superior performance by KFRG [analysts forecasts]
23   should come as no surprise. All four estimates of growth rely
24   upon past data, but in the case of KFRG [analysts forecasts] a
25   larger body of past data is used, filtered through a group of
26   security analysts who adjust for abnormalities that are not
27   considered relevant for future growth. We assume this is done

1 by any analyst who develops retention growth estimates of yield
2 for a firm. If we had done this for all seventy-five firms in our
3 utility sample, it is likely that the correlations would have been
4 as good or better than those obtained with the analyst forecasts
5 of growth." (Gordon, Gordon, Gould, "Choice among methods
6 of estimating share yield," *The Journal of Portfolio*
7 *Management,* Spring 1989, pp. 50-55)

8   The "retention growth" referenced in the above quote is the sustainable

9 growth rate (br + sv) that I use in my testimony as a starting point in determining investors'

10 long-term sustainable growth rate expectations. Therefore, Professor Gordon's actual

11 conclusion in the article cited by the Company witnesses is not that earnings growth is always

12 superior in the DCF. Rather, his conclusion is that a thorough sustainable growth rate analysis

13 (the type of growth rate analysis I employ) will produce results that are as good or better than

14 those obtained with the analyst forecasts of growth.

15   Q.   ARE THERE OTHER ISSUES RELATED TO THE COMPANY'S DCF

16 ANALYSES THAT YOU WISH TO BRING TO THE ATTENTION OF THE

17 COMMISSION?

18   A.   Yes. As I noted previously, in reporting the results of his DCF analysis,

19 Dr. Vander Weide has elected to weight those results based on the market valuation of

20 the companies in his sample group. For his electric companies, he reports a market

21 value-weighted average result of 10.6%. However, the simple arithmetic average of those

22 results is 10.06% and, as I discussed previously the middle value or median of his electric

23 utility DCF results is 9.43%.

24   If we look more closely at Dr. Vander Weide's sample group, we see that his

25 decision to weight his results based on market value causes the weighted average result to

26 overstate the actual central nature of those results. That is because the two largest companies

27 have DCF results that are more than two standard deviations higher than the arithmetic

1   average. Dr. Vander Weide's DCF methodology produces equity cost estimates of 14.81%

2   and 14.15% for Dominion Resources and TXU Corp., respectively, two of the largest

3   companies in his sample group.

4   In addition, Dr. Vander Weide did not screen the companies in his sample

5   group to determine how much of the firm's revenue was derived through utility operations.

6   The December 2006 edition of AUS Utility Reports indicates that regulated electric

7   operations accounted for 31% and 22% of Dominion Resources and TXU's revenues.

8   Therefore, unregulated operations account for the vast majority of those firm's revenues,

9   indicating that those companies would not provide reasonable proxies for AmerenUE, which

10   realizes all of its revenues from lower-risk regulated utility operations.

11   Removing Dominion Resources and TXU Corp. from Dr. Vander Weide's

12   sample group would result in a simple average DCF cost of equity of 9.75%. Even retaining

13   Dr. Vander Weide's market-value weighting methodology, removing those two largest

14   utilities, would result in a market-weighted average DCF cost of equity of 9.70%. In sum, the

15   DCF result Dr. Vander Weide reports in his testimony, 10.6%, even assuming the accuracy of

16   projected earnings growth rates, actually overstates the true central nature of those results,

17   which range from about 9.5% to 9.7%.

18   Unlike Dr. Vander Weide, Company witness McShane includes a sample

19   selection screening criterion related to percentage of utility operations (80% of assets devoted

20   to utility operations). However, that screening process does not recognize that unregulated

21   operations, like energy trading operations, can have relatively small capital investment and

22   relatively large revenues (with concomitantly high operating risk). As a result, TXU, Corp.,

23   with only 22% of revenues from regulated electric utility operations passed Ms. McShane's

24   screening process. In my view, TXU is not similar in risk to AmerenUE and should be

1 excluded from her sample group—just as it should be excluded from Dr. Vander Weide's

2 sample group. Eliminating TXU from Ms. McShane's electric sample would cause her DCF

3 results to average between 9.7% to 9.8% as shown in Table I, below. Again, that result

4 assumes the veracity of sole reliance on projected earnings growth, which as I noted above,

5 would tend to overstate investor-expected long-term growth.

6 <div align="center">Table I.</div>
7 <div align="center">McShane DCF Results Without TXU</div>

Company	DCF I/B/E/S Earn.	DCF V.L. Earns.	DCF 2-stage	
AEP	7.5%	7.1%	9.4%	
Ameren	10.4%	7.7%	10.5%	
Edison	10.4%	9.9%	8.1%	
Entergy	11.8%	8.3%	8.8%	
Exelon	13.3%	9.1%	8.9%	
FirstEnergy	8.3%	12.3%	8.7%	
FPL	10.6%	13.7%	9.4%	
Gt Plains	8.7%	5.9%	10.7%	
PG&E	11.3%	9.0%	9.0%	
Pinnacle W	11.5%	11.3%	10.7%	
PNM	13.8%	9.2%	9.6%	
PPL	13.2%	12.0%	9.8%	
Sempra	8.7%	8.3%	7.8%	
Southern	9.8%	10.1%	10.2%	
Wisconsin E	10.1%	7.4%	7.6%	
Xcel	9.1%	10.9%	9.8%	
				OVERALL
Average	10.5%	9.5%	9.3%	9.8%
Median	10.4%	9.2%	9.4%	9.7%

8

9 Q.   DOES THIS CONCLUDE YOUR COMMENTS REGARDING THE

10 COMPANY'S DCF ANALYSES?

11 A.   Yes, except to say that while there are aspects of the Company's DCF analyses

12 that cause them to be overstated to some degree, the central nature of the DCF results of both

1   Dr. Vander Weide and Ms. McShane indicate that the cost of common equity for AmerenUE

2   is below 10%.

3   **RISK PREMIUM METHODS**

4   **A. BOND YIELD-PLUS-RISK PREMIUM**

5   Q.   HOW HAVE THE COMPANY WITNESSES USED THE BOND YIELD

6   PLUS RISK PREMIUM METHODOLOGY TO ESTIMATE THE COST OF EQUITY IN

7   THIS PROCEEDING?

8   A.   Dr. Vander Weide has performed two bond yield plus risk premium methods:

9   1) the ex ante (forward-looking) method and 2) the ex post (historical) method. Dr. Vander

10 Weide's ex ante risk premium analyzes the monthly DCF cost of equity for a group of utilities

11 over a period of time and subtracts from that value the then-current yield on A-rated utility

12 bonds to estimate an average risk premium. In the ex post risk premium, Dr. Vander Weide

13 averages the historical differences in earned returns on utility stocks and bonds over time to

14 determine a risk premium. In both cases the risk premium estimates are added to projected

15 bond yields to provide estimates of the cost of equity.

16   In her testimony, Ms McShane also utilizes an historical risk premium based

17 on differences in annual earned stock and bond returns and a forward-looking risk premium,

18 which is based on a DCF estimate of the cost of equity for a group of utilities over a recent

19 period of time.

20   Q.   PRIOR TO DISCUSSING THE DETAILS OF EACH OF THOSE RISK

21 PREMIUM ANALYSES, DO YOU HAVE ANY COMMENTS OF A GENERAL NATURE

22 REGARDING RISK PREMIUM-TYPE ANALYSES?

1   A.   Yes. A fundamental precept on which the risk premium methodology is based

2 is that the higher risk of stocks over bonds requires an incrementally higher return for those

3 stocks in order for investors to be compensated for assuming the higher risk. Although that is

4 generally true, it is most important to realize that, given a current bond yield of about 6% for

5 BBB-rated utilities[15], an equity return of 8%, 10%, 13% or even 50% would fulfill the

6 requirement of providing a "premium" over debt costs. The real issue with a risk premium

7 analysis is determining that premium with any precision. It is not a directly observable

8 phenomenon.

9   There are two other fundamental tenets upon which historical risk premium-

10 type analyses are grounded which, when examined, indicate that that type of equity cost

11 estimation methodology should not be given primary consideration in setting allowed rates of

12 return. First, since risk premium analyses look backward in time, they assume "past is

13 prologue." In other words, the investors' expectations for the future are assumed to mirror

14 exactly the average results they have experienced in the past. As I have noted, current

15 research indicates that such is not the case—investors' current return expectations are lower

16 than what was achieved in the past. Second, implicit in the use of an average historical return

17 premium of equities over debt is the assumption that the risk premium is constant over time.

18 Neither of these assumptions upon which the risk premium analysis rests is true.

19   The fact that the risk premium varies significantly from period to period is

20 shown quite clearly in Dr. Vander Weide's Schedule JVW-6, which shows the data on which

21 his historical risk premium results are based. The utility common stock annual returns on

22 which Company witness Vander Weide relies have ranged from +58% to -37%, while utility

23 bond annual returns have ranged from +36% to –13%. Therefore, the assumption in the Risk

---

[15] Value Line *Selection and Opinion*, January 12, 2007, p. 4927.

1   Premium analysis that historical average results are constant, is not true and does not provide

2   a sound basis on which to estimate current equity capital cost rates.

3   The practical impact of the volatility of historical risk premium data is

4   that, with the selection of any particular period over which to average the historical data,

5   virtually any risk premium result can be produced.[16] In addition, the use of historical earned

6   return data to estimate current equity capital costs has been questioned in the financial

7   literature:

8   There are both conceptual and measurement problems with
9   using I&S [Ibbotson and Sinquefield] data for purposes of
10   estimating the cost of capital. Conceptually, there is no
11   compelling reason to think that investors expect the same
12   relative returns that were earned in the past. Indeed, evidence
13   presented in the following sections indicates that relative
14   expected returns should, and do, vary significantly over time.
15   Empirically, the measured historic premium is sensitive both to
16   the choice of estimation horizon and to the end points. These
17   choices are essentially arbitrary, yet they can result in
18   significant differences in the final outcome. ("The Risk
19   Premium Approach to Measuring a Utility's Cost of Equity,"
20   Brigham, Shome and Vinson, Financial Management, Spring
21   1985, p. 34)
22
23   **Other Methods.** Several other approaches have been used to
24   estimate the cost of common equity. Two of these should be
25   noted. First there is the risk premium method, which is based
26   upon the premise that common equity carries a higher risk than
27   debt. This approach is relatively straightforward: (1) determine
28   the historic spread between the return on debt and the return on
29   common equity, and (2) add this risk premium to the current
30   debt yield to derive an approximation of current equity return
31   requirements....
32   Like other methods, however, there are a number of specific
33   problems. Over what historic period of time should the spread
34   be established? Does the spread between the return on debt and
35   the return on equity remain constant over time and at all interest
36   levels? Should the spread be expressed on a before- or after-tax
37   basis to the investor? What debt instruments should be used

---

[16] Dr. Vander Weide recognizes, at page 34 of his Direct Testimony, that his risk premium results would be different if he used a different time period for the study.

1   (e.g., government securities versus corporate or utility bonds)?
2   What equity securities should be used? How should the
3   resulting return requirement be adjusted for the risk that
4   corresponds to a given utility? In light of these problems, many
5   use the risk premium approach as a subsidiary method to test
6   the results of other approaches." (Phillips, C. F., The Regulation
7   of Public Utilities, Public Utilities Reports, Arlington, VA,
8   1993, p. 399)

9   The type of data described in the quote above as both conceptually and

10   empirically problematic forms the basis of Dr. Vander Weide's historical Bond Yield-Plus

11   Risk Premium methodology.

12   Q.   WHAT ARE YOUR COMMENTS REGARDING THE HISTORICAL RISK

13   PREMIUM ANALYSES PRESENTED BY THE COMPANY WITNESSES?

14   A.   This form of the risk premium analysis measures the earned return on common

15   stocks and subtracts from that the yield on long-term bonds to produce a risk premium.

16   There have been fundamental changes in the nature of the relationship between

17   stock returns and bond returns over the past sixty or seventy years. The data in Dr. Vander

18   Weide's Schedule JVW-6, indicate that from 1937 through 2006 the standard deviation of

19   utility stock and bond returns was 17.0% and 11.2%, respectively. However, in more recent

20   years (since 1967), stocks have actually become less volatile while bonds have become more

21   volatile, showing wider swings in returns. Dr. Vander Weide's Schedule JVW-6 data show

22   that the standard deviation of utility stock and bond returns from 1967 forward was 15.6%

23   and 13.8%, respectively. Those data indicate that the current relationship between the returns

24   of bonds and stock is different than it has been over the longer time frame.

1   The table below, also taken from Dr. Vander Weide's Schedule JVW-6-1 data,

2   confirms that the return difference between bonds and stocks has declined from the long-term

3   average levels reported by Dr. Vander Weide.

4

Years	Risk Premium
37-06	4.45%
67-06	2.26%
77-06	2.86%
87-06	1.54%

5   These data indicate that over the most recent 30 years, risk premiums between electric utility

6   stock and bond returns have averaged about 2%-3% rather than the 4.45% Dr. Vander Weide

7   reports in his testimony. If current A-rated utility bond yields are 5.8%, these more recent

8   data indicate that an appropriate return on common equity for electric utilities would be 8.8%

9   (5.8% + 3% = 8.8%), rather than the 11.4% result produced in the Dr. Vander Weide's

10   analysis of the same data.

11   Also, Dr. Vander Weide provides other evidence in his testimony that

12   underscores the shrinking nature of risk premiums. His Schedule JVW-5 contains his analysis

13   of the return difference between the S&P 500 Industrial stock index and A-rated bonds.

14   That also begins in 1937. If we look at the total time period as well as the twenty, thirty and

15   forty-year time periods cited above, the results confirm that more current risk premium are

16   smaller. The table below shows the values for gas utility returns and bond returns extracted

17   from Dr. Vander Weide's Schedule JVW-5:

18

Years	Risk Premium
37-06	5.10%
67-06	2.52%
77-06	2.31%
87-06	1.89%

1   Finally, turning to the topic of reliability of the risk premium estimate, as

2   I noted above, the average risk premium between utility stocks and bonds shown in

3   Dr. Vander Weide's ex-post risk premium is 4.45%. The highest risk premium in any one

4   year was almost 49% and the lowest was –37.5%. The standard deviation of Dr. Vander

5   Weide's ex-post risk premium, therefore, is 14.9%. Establishing a two standard-deviation

6   range around the 4.45% risk premium, indicates that the Commission can be assured

7   (with 95% confidence) that the real risk premium used by investors (assuming investors'

8   expectations are based exactly on past averages) will lie somewhere in between –25.53% and

9   33.43% [4.45%±(2 x 14.9%)]. Given the extreme volatility of the historical information, this

10 average risk premium is simply not helpful information in determining with any accuracy the

11 current cost of equity capital.

12   The January 12, 2007 edition of Value Line's *Selection & Opinion*, p. 4927,

13 indicates that the current yield of A-rated utility bonds is 5.8%. Given a reliable range of risk

14 premiums from Dr. Vander Weide's historical return data (-25.53% to +33.43%), we can say

15 (again with 95% confidence) that the cost of equity for AmerenUE lies somewhere in the

16 range of –19.53% to 39.23%. While the 10.25% result produced by adding the Dr. Vander

17 Weide's historical average risk premium (4.45%) to the current A-rated bond yield (5.8%)

18 certainly falls within that range, that result should not be considered reliable and it should not

19 be given the same weight in determining the cost of equity as the DCF, as the Company

20 witnesses suggest.

21   Q.   MR. HILL, IN YOUR ESTIMATE OF THE CURRENT COST OF EQUITY

22 USING DR. VANDER WEIDE'S HISTORICAL RISK PREMIUM ANALYSIS, YOU

23 USED A COST RATE FOR A-RATED UTILITY BONDS OF 5.8%. DR. VANDER WEIDE

1   USES 6.64%—80 BASIS POINTS HIGHER. WHY IS THERE A DIFFERENCE IN THAT

2   PARAMETER?

3   A.   Dr. Vander Weide has elected to use projected bond yields instead of the

4   current yield. (Ms. McShane follows that methodology as well.) That methodological choice

5   tends to overstate a risk premium estimate of the current cost of equity capital. In Dr. Vander

6   Weide's analysis, the difference between current bond yields and the projected yields he uses

7   inflates his result by 80 basis points. The overstatement in Ms. McShane's historical bond

8   yield-plus risk premium analysis due to the use of projected rather than current bond yields is

9   approximately 70 basis points.[17]

10   Investors are aware of current projections regarding the expectations for the

11   economy and the level of interest rates and incorporate those expectations into the price they

12   are willing to provide for bonds, which determine the bond yield. One of the most widely

13   accepted tenets of modern finance—the efficient market hypothesis—holds that all publicly

14   available information is included in security prices. That includes interest rate forecasts.

15   Therefore, the current yield does not need to be adjusted again for the same expectations that

16   are already included by investors.

17   Basing risk premium estimates on projected bond yields would be similar

18   to basing DCF equity cost estimates on projected stock prices. Neither Company cost of

19   capital witness has attempted to base their DCF estimates on projected market prices, and

20   Dr. Vander Weide admits, in response to Staff Data Request No. 208, that using projected

21   stock prices in the DCF would constitute a miss-match between the stock price and current

22

---

[17] Ms. McShane uses a projected 10-year Treasury bond yield of 5.25% as the basis for her historical bond yield-plus risk premium analysis. The Federal Reserve Statistical Release H.15 (January 8, 2007) reports an average 10-year T-Bond yield of 4.56% in December, 2006. The difference between the current T-Bond yield and that used in Ms. McShane's analysis is 69 basis points.

1   available information. So, too would the use of projected bond yields in a risk premium

2   analysis. The Commission should not rely on equity cost estimates that rely on projected bond

3   yields.

4   Q.   WHAT COMMENTS DO YOU HAVE REGARDING COMPANY

5   WITNESS McSHANE'S HISTORICAL BOND YIELD-PLUS RISK PREMIUM

6   ANALYSIS?

7   A.   There are three points to note with regard to Company witness McShane's

8   historical risk premium analysis—all of which cause her results to be overstated. First,

9   Ms. McShane has elected to base her historical risk premium on a risk-free bond

10   yield (a practice usually reserved for the CAPM). She selects a 10-year T-bond as the risk

11   free rate, although the historical data she uses is based on a 20-year T-bond. Ms. McShane

12   adjusts her risk premiums upward by 50 basis points to "account" for an average historical

13   yield difference between the two series, however that adjustment is unnecessary because

14   20-year T-Bond yields are readily available and published daily by the Federal Reserve. With

15   her adjustment, the effective "risk-free" yield she uses is 5.75% (5.25% for the 10-year

16   T-bond and a 50 basis point "adjustment"). In December 2006, the average 20-year T-Bond

17   yield was 4.78%, according to the Federal Reserve (Statistical Release H.15, January 8,

18   2007). In the risk-free bond yield base portion of the analysis, Ms. McShane is overstating

19   her cost of capital estimate by almost 100 basis points. [5.75% effective yield of 20-year

20   T-Bond – 4.78% actual yield of 20-year T-bond = 0.97%]   On that basis alone,

21   Ms. McShane's historical bond yield-plus risk premium analysis indicates a cost of equity for

22   AmerenUE of 9.75%-10.75%, 100 basis points below the equity cost range she reports at

23   page 38 of her Direct Testimony (in the electric case).

1   Second, Ms. McShane utilizes the Ibbotson historical database to determine

2   her risk premiums between utilities and T-Bonds, and cites Ibbotson as authority on other

3   issues (e.g., McShane Direct, p. 32 (electric case)). However, she ignores Ibbotson's advice to

4   use the longest time period available when studying historical risk premiums, and elects,

5   instead, to focus on a period beginning in 1947. While, at first glance, this may seem

6   reasonable, it is important to recall that following World War II, the U.S. economy comprised

7   an enormous portion of the world economy (the other industrialized nations had been

8   devastated by the war). Therefore, from that point through the 1960s this country had an

9   unprecedented opportunity for economic growth, which is not likely to be repeated in the

10 future. This fact is confirmed in the financial literature:

11   "The large risk premia achieved during the second half of the
12   20th Century are attributable to two factors. First, there was
13   unprecedented growth in productivity and efficiency, as well as
14   improvements in management and corporate governance, and
15   there was also extensive technological change. As Europe,
16   North America and the Asia-Pacific region emerged from the
17   turmoil of World War II, expectations for improvement were
18   limited to what could be imagined. Reality exceeded investors'
19   expectations. Corporate cash flows grew faster than investors
20   had anticipated. This higher growth is now known to the
21   market, and build into today's higher stock prices.
22
23   Second, stock prices have almost certainly also risen because of
24   a fall in the required rate of return, due to diminished
25   investment risk. The economic and political lessons of the 20th
26   century have surely been learned, international trade and
27   investment flows have increased, and the Cold War has ended,
28   leading to a more secure business environment. A further factor
29   that may have lowered required returns is that investors now
30   have much more opportunity to diversify, both domestically and
31   internationally, than they had a century ago. Diversification
32   allows investors to lower their risk exposure without detriment
33   to expected return. Transaction costs are also lower now than a
34   century ago. Factors such as these, which have led to a
35   reduction in the required risk premium, have contributed further
36   to the upward re-rating of share prices.
37   ...

1
2   The above arguments all lean in one direction, namely that the
3   historical risk premium is likely to exaggerate investors' current
4   required equity risk premium." (Dimson, March, Staunton,
5   "Risk and Return in the 20th and 21st Centuries," *Business*
6   *Strategy Review*, 2000, Volume 11, Issue 2, pp. 1-18)

7   Third, in her historical risk premium analysis, Ms. McShane elects to rely on

8 the difference between the earned return of stocks and the yields of bonds (rather than the

9 historical earned return of bonds). The rationale for her methodology is that there have been

10 unanticipated gains with bond investments and the historical yields (which are lower) better

11 represent investor expectations. However, there is no analogue for stocks (i.e., there is no

12 readily available stock "yield" parameter that can be said to measure investor expectations).

13 The metric used by Ms. McShane for stock returns is the historical earned return on the S&P

14 utility index. Therefore, her analysis assumes that earned returns are representative of investor

15 expectations for stocks, but not for bonds. If bonds have achieved higher returns than

16 expected and risk premiums are constant (an assumption of this type of analysis), then it

17 stands to reason that stock returns might also have been higher than expected. However,

18 Ms. McShane's analysis does not attempt to measure that factor.

19   The historical return series is better matched and has more meaning for

20 determining investor expectations if earned returns are used for both series. As Ms. McShane

21 notes in Schedule KCM-E7-1 of her Direct Testimony, the difference between the earned

22 return of stocks and the yield on T-Bonds is 7.1%, as reported by Ibbotson. However, the

23 same Ibbotson publication shows that the difference between the earned returns of stock and

24 the earned returns of bonds (similar bases of measurement) is 6.5%—60 basis points lower.

25 Therefore, Ms. McShane's use of historical bond yields rather than bond returns also causes

26 her historical risk premium result to be overstated.

1   In sum, even Ms. McShane's historical risk premium range based on current

2   yields, 9.75%—10.75%, overstates current investor expectations. The lower end of that range,

3   9.75%, again points to a cost of equity capital for AmerenUE below 10%.

4   Q.   WHAT ARE YOUR COMMENTS REGARDING DR. VANDER WEIDE'S

5   OTHER RISK PREMIUM ANALYSIS—THE EX ANTE OR FORWARD-LOOKING RISK

6   PREMIUM?

7   A.   Dr. Vander Weide's other bond yield-plus risk premium analysis is one that

8   compares DCF equity cost estimates equity returns to annual average bond yields, examines

9   the statistical relationship between bond yields and the risk premium and, using projected

10   bond yields relies on that statistical relationship to estimate the cost of equity. There are also

11   several problems with this analysis, some of which I have discussed previously and some of

12   which I have not.

13   With regard to the aspects of this type of risk premium analysis discussed

14   previously, Dr. Vander Weide's ex-ante risk premium relies on projected rather than current

15   bond yields. According to the regression formula shown on Dr. Vander Weide's Appendix

16   JVW-2-3, a current A-rated bond yield of 5.8% would produce an ex-ante risk premium of

17   4.66%. Adding that risk premium to the current A-rated bond yield (5.8%) produces a cost of

18   capital indication of 10.46%. Dr. Vander Weide's use of a projected bond yield results in an

19   equity cost estimate from this method of 11%. However, there are other reasons to question

20   the reliability of even the lower, current-yield estimate.

21   Dr. Vander Weide's ex-ante risk premium analysis is based on a DCF analysis

22   of Moody's electric companies from 1999 through early 2006. As I've noted previously, that

23   was a particularly volatile time for the utility industry, centered around perhaps one of the

24   biggest corporate/energy trading frauds of all time. Using cost of equity estimates from that

1 period (even assuming they were accurate) is of questionable value when those results are

2 supposed to represent investors' current expectations. Also, I have previously discussed the

3 problems with Dr. Vander Weide's DCF analyses such as dividend compounding and the

4 mechanistic use of analysts' earnings growth rate projections—both of which tend to

5 overstate the cost of equity capital. In this type of risk premium analysis, an overstated DCF

6 estimate results in a risk premium and a cost of equity estimate that is too high to represent

7 investors' current return expectations.

8   Dr. Vander Weide's use of a regression analysis between risk premiums and

9 interest rates over his relatively short "ex-ante" study period (1999-2006), is logically

10 inconsistent with other regression evidence provided in his testimony. At page 35 of his

11 Direct Testimony, Dr. Vander Weide examines the historical data in his ex-post risk premium

12 analysis to determine if there has been any trend in the equity risk premium (purportedly to

13 support the position that the long-term historical average is a reasonable representation of

14 current expectations). He finds no trends in the risk premium, according to a statistical

15 regression. However, in the much shorter period studied in his ex-ante risk premium he

16 produces the opposite finding—a statistical relationship or trend that must be recognized.

17 That logical inconsistence casts doubt on the reliability of Dr. Vander Weide's risk premium

18 results.

19   Also, Dr. Vander Weide's electronic workpapers indicate that his original,

20 simple linear regression of the A-rated bond yield on the ex-ante risk premium from his study

21 period produced the following equation for the risk premium: 1.5% + 0.363(A-rated Bond

22 Yield). A 5.8% A-rated bond yield, with that equation, would produce a risk premium of

23 3.61% [1.5% + 0.363(5.8%) = 3.61%], and a cost of equity estimate of 9.41% [3.61% + 5.8%

24 = 9.41%].

1　　　　　　　However, Dr. Vander Weide adjusted his simple regression results using a

2　multiple regression with a "lag risk premium" (the risk premium from the prior month), the

3　actual bond yield, and a "lag bond yield" (the bond yield from the previous month) as

4　independent variables. From that multiple regression, Dr. Vander Weide produces "adjusted"

5　values for risk premium and bond yield and then undertakes another regression of those

6　adjusted values. This process provides the equation that appears on page 2 of his Appendix

7　JVW-2 and that produces his 11% ex-ante equity cost estimate (or 10.5% with a current bond

8　yield).

9　　　　　　　While Dr. Vander Weide's manipulation of his data is not unusual in statistical

10　time-series analysis, of concern is the "r-squared" value, or the proportion of explained

11　variation in the ultimate adjusted-value regression. The r-squared values with Dr. Vander

12　Weide's regression of adjusted bond yield onto adjusted risk premium (the last step in his

13　analysis) is only 8% for his electric sample and 2% for his gas sample. That means that the

14　current bond yield explains only a very small percent of the fluctuation in the risk premium.

15　Therefore, Dr. Vander Weide's statistical adjustments to account for changes in interest rates

16　appear to be of little explanatory value in estimating the current cost of equity capital.

17　　　　Q.　　HAS　COMPANY　WITNESS　McSHANE　ALSO　PRESENTED　A

18　FORWARD-LOOKING BOND YIELD-PLUS RISK PREMIUM ANALYSIS?

19　　　　A.　　Yes. While Ms. McShane refrained from the statistical analysis contained in

20　Dr. Vander Weide's analysis, her ex-ante risk premium analysis is very similar and suffers

21　from the same flaws. She calculates a DCF analysis for a group of electric utilities from 1998

22　through 2006, virtually the same period studied by Dr. Vander Weide. Ms. McShane also

23　relies only on sell-side analysts' earnings growth projections in her DCF calculations, despite

24　the fact that she recognizes that those estimates are often overstated (McShane Direct, p. 22

1 (electric testimony)). Those elements in her analysis cause Ms. McShane's ex-ante risk

2 premium result of 5.3% to be somewhat overstated. Nevertheless, adding that risk premium to

3 the current 4.6% yield on 10-year T-Bonds (her selected bond yield), Ms. McShane's ex-ante

4 risk premium result indicates a current cost of equity for AmerenUE of 9.9% [4.6% + 5.3%].

5 **B. CAPITAL ASSET PRICING MODEL**

6 Q.   DR. VANDER WEIDE PRESENTS A CAPITAL ASSET PRICING MODEL

7 (CAPM) ANALYSIS IN THIS PROCEEDING, HAS HE CONSISTENTLY USED THAT

8 MODEL IN ESTIMATING THE COST OF EQUITY?

9 A.   No. My review of the prior testimonies provided by Dr. Vander Weide in

10 response to Staff Data Request No. 200 indicates that he provided CAPM analyses in only

11 3 of those 17 testimonies. Dr. Vander Weide's CAPM analysis produces his highest equity

12 cost estimates in this proceeding. Without his CAPM results, Dr. Vander Weide's average

13 cost of equity estimate would be 11%, rather than the 11.5% he reports including the CAPM

14 results.

15 In addition, the testimonies provided in response to Staff Data Request

16 No. 200 show that Dr. Vander Weide utilized CAPM equity cost estimates in 1996, 1998 and

17 1999, but Dr. Vander Weide's later electric utility cost of capital testimonies (through 2003)

18 do not include CAPM analyses. Interestingly, before the Federal Energy Regulatory

19 Commission in 2003 (Pacific Gas & Electric, Docket ER-03-660-000), Dr. Vander Weide

20 testified that although he had previously applied the CAPM it was, at that time, "difficult to

21 apply" and he elected not to use that methodology. However, the CAPM is probably the least

22 difficult cost of equity estimation method to apply with the necessary factors being: 1) a long-

23 term T-Bond yield, 2) average betas and 3) a market risk premium.

1   The Federal Reserve on-line database indicates that the average 20-year

2   T-Bond yield in 2003 was 4.96%.[18] Ms. McShane's Schedule KCM-E3 indicates that a

3   median beta coefficient for electrics in 2003 was 0.70, and Ibbotson's arithmetic risk

4   premium was about 7.2% in 2003.[19] The CAPM combination of those 2003 parameters is a

5   cost of equity estimate of 10% [4.96% + 0.70 x 7.2% = 10.0%]—not a "difficult" calculation.

6   Dr. Vander Weide recommended a cost of equity of 12.6% for his proxy group of electric

7   companies in his 2003 testimony before FERC, substantially above the result a CAPM

8   analysis would have produced.

9   Q.   ARE THERE DIFFERENCES IN THE MANNER IN WHICH DR. VANDER

10   WEIDE CALCULATED A CAPM COST OF EQUITY IN THE PAST AND THE

11   MANNER IN WHICH HE APPLIES THE MODEL IN THIS CASE?

12   A.   Yes, and those differences in methodology work to increase the results of his

13   CAPM in this proceeding. In prior testimonies, when he did present a CAPM analysis,

14   Dr. Vander Weide used the then-current average long-term Treasury bond yield—a practice

15   I also utilize. Whereas, in this proceeding, Dr. Vander Weide elects to use a projected bond

16   yield, which overstates the cost of capital by approximately 60 basis points.[20]

17   Also, in prior applications of the CAPM, Dr. Vander Weide used only the

18   Ibbotson historical database as a source for his estimate of the market risk premium. He did

19   not use a DCF of unregulated companies, as he does in this case, to provide a larger market

20   risk premium estimate. In the instant proceeding, Dr. Vander Weide's DCF-based CAPM

21   estimate is 110 basis points higher than his estimate based on the historical Ibbotson data set.

---

[18] http://www.federalreserve.gov/releases/h15/update/

[19] Ibbotson Associates, *Stocks, Bonds, Bills and Inflation, 2004 Yearbook*, p. 28.

[20] Dr. Vander Weide uses a projected 20-year T-Bond yield of 5.39%. According to the Federal Reserve
Statistical Release H.15 (January 8, 2007), the average 20-year T-Bond yield in December 2006 was 4.78%,
61 basis points lower.

1   Finally, when using the CAPM in his prior testimony, in response to the

2   question "Are the Value Line betas good estimates of expected future risk for the electric

3   energy companies," Dr. Vander Weide provided a succinct, "No."[21] He then proceeded to

4   explain that Value Line betas, based on five years of historical data, did not anticipate the

5   move toward deregulation underway at the time (1998). He was right. One of the fundamental

6   problems with beta and the CAPM is that betas are measured using five years of historical

7   data and are decidedly not forward-looking.

8   In the very same way, the current Value Line betas do a fine job of capturing

9   the past five years of relative confusion in the energy industry, but do not represent a

10 reasonable picture of a back-to-basics utility industry that investors expect going forward. As

11 a result, current beta coefficients are unusually high, leading to CAPM results that

12 significantly overstate the cost of common equity and do not reflect investors' expectations

13 (I discuss this issue at pages 44 and 45 of my Direct Testimony). However, in his testimony in

14 this proceeding, with beta coefficients at unusually high levels, producing unusually high

15 equity cost estimates, Dr. Vander Weide is silent regarding the reliability of Value Line betas.

16 Q.   IS   THE   CAPM   ANALYSIS   OFFERED   BY   MS.   McSHANE

17 SUBSTANTIALLY DIFFERENT FROM THAT PROVIDED BY DR. VANDER WEIDE?

18 A.   No. Ms. McShane's CAPM analysis is overstated due to her reliance on

19 projected bond yields (and her election to use 10-year T-Bond yields and adjust them to

20 20-year T-Bond equivalents when 20-year T-Bond yields are readily available and published

21 every day by the Federal Reserve), and her use of a earnings-only DCF analysis of the S&P

22 500 Index as a basis for estimating a market risk premium. Ms. McShane's CAPM, indeed, all

---

[21] Company response to Staff Data Request No. 200, Vander Weide Direct Testimony before the New Jersey
Board of Public Utilities on Behalf of Public Service Electric and Gas Company, Docket Nos. PUC 7347-97N
and PUC-7348-97N, p. 49.

1 CAPM analyses in this proceeding, are also overstated because the unusually high betas

2 represent the past five years of stock price movements, not investors' current expectations.

3   As I noted in my discussion of her other risk premium studies (which also

4 relied on 10-year T-Bond yields), Ms. McShane overstates the current cost of equity capital

5 by almost 100 basis points due to her use of a projected bond yield and her adjustment to

6 10-year Bonds to estimate the 20-year T-Bond yield.

7 Q. YOU NOTED PREVIOUSLY THAT THE DCF-BASED CAPM ANALYSIS

8 PRODUCED THE HIGHEST EQUITY COST ESTIMATE FOR DR. VANDER WEIDE, IS

9 THE SAME TRUE FOR WITNESS McSHANE?

10 A. Yes. Ms. McShane's method of calculating a forward-looking market risk

11 premium involves estimating the DCF cost of equity of the S&P 500 Index. As before in the

12 DCF analyses of both Ms. McShane and Dr. Vander Weide, the only parameter considered in

13 determining long-term sustainable growth required in the DCF is projected earnings growth.

14 I have previously discussed the flaws in this approach, have noted that it causes the results to

15 be overstated and will not repeat that discussion here.

16   It is important to note that, using an earnings-only DCF analysis of the

17 S&P 500, Ms. McShane is able to estimate a market risk premium of 7.35% (mid-point), and

18 Dr. Vander Weide estimates a market risk premium of 8.36%. Both of those market risk

19 premium estimates are well above the long-term historical average market risk premium

20 (differences in stock and bond earned return) of 6.5% published by Ibbotson associates.

21 Moreover, as I noted in detail in my Direct Testimony, there has been considerable recent

22 research published regarding the historical market risk premium and whether or not historical

23 average returns provide reasonable return expectations for the future. The nearly universal

24 conclusion is that current return expectations are lower, and maybe much lower, than they

1 | have been in the past.

2 | That research shows, then, that if Ibbotson indicates that the return difference

3 | between stocks and bonds (the market risk premium) since 1926 has been about 6.5%, the

4 | market risk premium investors expect in the future will be below 6.5%. Both Ms. McShane

5 | and Dr. Vander Weide utilize market risk premiums (derived from their earnings-only DCF

6 | analyses of the S&P 500) that are substantially higher than historical averages. Those higher

7 | risk premium results are simply not representative of investors' forward-looking expectations

8 | and run counter to the current expectation for smaller market risk premiums in the future.

9 | Finally, as an additional measure of the overstatement of the Company's

10 | DCF-based CAPM it is worth noting that the Company cost of capital witnesses indicate that

11 | investor-expected return for the market proxied by the S&P 500 ranges from 12.7%

12 | (McShane) to 13.75% (Vander Weide). However, the Company-as-investor expects to earn a

13 | return on the equity portion of its retirement portfolio ranging from 8.4% to 10.6% (Staff Data

14 | Request No. 158).

15 | Q. DO YOU HAVE ANY SUMMARY COMMENTS REGARDING THE

16 | COMPANY'S COST OF EQUTIY ESTIMATION METHODS, MR. HILL?

17 | A. Yes. The Company has over-emphasized its risk premium methodologies,

18 | which are unreliable and have many flaws, are based on volatile data and include unnecessary

19 | overstatements of current capital costs. While the Company's DCF analyses are also

20 | somewhat overstated, they provide much more accurate estimates of AmerenUE's current

21 | cost of common equity capital and indicate, unanimously, that cost rate is currently below

22 | 10%.

23 | Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY, MR. HILL?

24 | A. Yes, it does.