BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In Re:)   DOCKET NO.   -000824-EL
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REBUTTAL TESTIMONY
OF
JAMES H. VANDER WEIDE, PH.D.

ON BEHALF OF
FLORIDA POWER CORPORATION

SUBJECT: COST OF EQUITY

February 11, 2002

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4   **I. INTRODUCTION**

5   **Q 1**   **What is your name and business address?**

6   A 1   My name is James H. Vander Weide. My business address is 3606

7   Stoneybrook Drive, Durham, North Carolina.

8   **Q 2**   **Are you the same James Vander Weide who previously provided**

9   **direct testimony filed on September 14, 2001?**

10   A 2   Yes, I am.

11   **Q 3.**   **What is the purpose of your Rebuttal Testimony?**

12   A 3.   I have been asked by Florida Power Corporation ("Florida Power") to

13   review the Direct Testimony of Mr. James A. Rothschild on behalf of the

14   Office of Public Counsel and to respond to his cost of equity

15   recommendations. I have also been asked to review the testimonies of

16   Mr. Michael Gorman on behalf of Florida Industrial Power Users Group,

17   Mr. Theodore J. Kury on behalf of Publix Super Markets, Inc., and Mr.

18   Andrew J. Maurey on behalf of the Staff, and to review their cost of

19   capital recommendations for Florida Power.

20   **II. REBUTTAL OF MR. ROTHSCHILD**

21   **Q 4.**   **How did Mr. Rothschild estimate Florida Power's cost of equity?**

1   A 4.   Mr. Rothschild applied four cost of equity methodologies to the Value Line

2   electric and natural gas companies I used in my direct testimony.[1] His

3   cost of equity methodologies include: (1) the DCF model; (2) the complex

4   DCF model; (3); the inflation risk premium method; and (4) the debt risk

5   premium method.

6   **A. Mr. Rothschild's Simple DCF Model**

7   Q 5.   **What DCF Model does Mr. Rothschild use to estimate Florida**

8   **Power's cost of equity?**

9   A 5.   Mr. Rothschild uses an Annual DCF Model of the form, $k = D(1+.5g)/P + $

10   g, to estimate Florida Power's cost of equity.

11   Q 6   **What is the basic assumption of the Annual DCF Model?**

12   A 6.   The Annual DCF Model is based on the assumption that companies only

13   pay dividends at the end of each year, rather than at the end of each

14   quarter.

15   Q. 7   **Does the Annual DCF Model provide accurate estimates of an**

16   **investor's required or expected rate of return from investing in a**

17   **firm's stock?**

18   A 7.   No. The Annual DCF Model of stock valuation produces correct

19   estimates of a firm's cost of equity capital only if the firm pays dividends

20   just once a year. Since Mr. Rothschild's proxy companies pay dividends

21   quarterly, the Annual DCF Model produces downwardly biased estimates

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[1] Although Mr. Rothschild claims that he has adopted my group of Value Line electric companies,
Mr. Rothschild actually uses a slightly different group than I used in my direct testimony. In

1		of the cost of equity. Investors can expect to earn a higher annual
2		effective return on an investment in a firm that pays quarterly dividends
3		than in one that pays the same amount of dollar dividends once at the
4		end of each year.
5	Q. 8	**Notwithstanding your disagreement with Mr. Rothschild's decision**
6		**to use an Annual DCF Model, did Mr. Rothschild implement his**
7		**Annual Model correctly?**
8	A 8.	No. The basic assumption of the Annual DCF Model is that dividends
9		are received annually, and the first dividend is assumed to be received
10		one year from now. The first dividend must be obtained by taking the
11		current dividend and multiplying by one plus the growth rate, "g." Instead,
12		Mr. Rothschild obtained the first dividend by multiplying the current
13		dividend by only one plus one-half the growth rate.
14	Q 9.	**What method did Mr. Rothschild use to estimate investors' future**
15		**growth expectations, g, for his proxy companies?**
16	A 9.	Mr. Rothschild assumes that investors form their growth expectations for
17		the proxy companies by multiplying their average expected retention
18		ratio, b, by their average expected rate of return on book equity, r, and
19		then adding a term to account for external financing growth. Thus,
20		$g = b \times r + sv$, where g is the growth rate, b is the expected percentage
21		of earnings retained in the business, r is the expected rate of return on

(. . . continued)
particular, he used RGS Energy, even though this company was not included in my proxy group of
electric companies; and he failed to use Reliant Energy, even though it was in my proxy group.

1	book equity, and *sv* is a term that accounts for growth from the sale of
2	additional shares of stock. The *b x r* component of the growth rate is
3	called the internal growth component, and the *sv* component of the
4	growth rate is called the external financing component.
5	**Q 10. Why does Mr. Rothschild rely on the retention rate, or b x r method,**
6	**of estimating future internal growth in the DCF model?**
7	A 10. Mr. Rothschild argues that the b x r method is the only consistent
8	method of estimating long-run future internal growth in the DCF model.
9	**Q 11. Do you agree with Mr. Rothschild's claim that his b x r method is**
10	**the only consistent method of estimating future internal growth in**
11	**the DCF model?**
12	A 11. No. When applied to a regulated firm, the b x r method is, in fact,
13	logically inconsistent.
14	**Q 12. Why is the b x r method, as applied by Mr. Rothschild, logically**
15	**inconsistent?**
16	A 12. The b x r method, as applied by Mr. Rothschild, is logically inconsistent
17	because it incorporates information on the firm's expected rate of return
18	on book equity, r, in calculating the firm's cost of equity through the DCF
19	model. The firm's cost of equity, however, also determines the allowed
20	rate of return on book equity through rate of return regulation. Thus, the
21	cost of equity is based on knowledge of the allowed rate of return on
22	equity, and the allowed rate of return on equity is based on knowledge of
23	the cost of equity. The logical circularity, or inconsistency, in applying

1		the b x r approach to rate-of-return regulated firms cannot be resolved
2		because only one of the two variables can be known before the other is
3		calculated.
4	**Q 13.**	**Can you illustrate the logical inconsistency that results from the**
5		**application of Mr. Rothschild's b x r approach to his proxy**
6		**companies?**
7	A 13.	Yes. As noted on Schedule JAR 4, page 1, of his direct testimony, Mr.
8		Rothschild assumes that his comparable electric utilities will earn a rate
9		of return on book equity of 13.0 percent in all future years. Mr.
10		Rothschild uses his 13.0 percent projected rate of return on book equity
11		assumption to derive his 10.17 – 10.64 percent estimate of his proxy
12		companies' cost of equity using his DCF model. Mr. Rothschild's final
13		recommended cost of equity for his proxy companies is 10 percent. It is
14		logically inconsistent for Mr. Rothschild to project that his proxy
15		companies will earn 13 percent on book equity at the same time that he
16		is recommending a cost of equity of 10 percent. If rates were based on
17		a 10 percent cost of equity, regulated companies such as Mr.
18		Rothschild's proxy companies would have a difficult time earning a 13
19		percent rate of return on book equity.
20	**Q 14.**	**Can the logical inconsistency of the b x r approach be eliminated by**
21		**changing Mr. Rothschild's initial assumption about his proxy**
22		**companies' future earned rate of return on book equity from 13**
23		**percent to 10 percent?**

1 A 14. No. The basic circularity problem with Mr. Rothschild's internal growth

2 method is logical, not numerical. There are at least three problems with

3 changing the initial earned rate of return on book equity from 13 percent

4 to 10 percent. First, in Mr. Rothschild's rate-of-return regulated world,

5 his proxy companies will only earn 10 percent in the future if regulators

6 set these companies' rates to allow them to earn 10 percent on book

7 equity. However, under rate of return regulation, regulators set the

8 allowed rate of return equal to the regulated company's cost of equity.

9 Thus, Mr. Rothschild would have to somehow "know" what the regulated

10 company's cost of equity is before he estimates its cost of equity.

11

12 Second, if Mr. Rothschild were to assume initially that his proxy

13 companies would earn 10 percent on book equity, his own DCF

14 methodology would produce a cost of equity equal to 6.68 percent.

15 Thus, Mr. Rothschild would still be assuming that his proxy companies

16 would be able to earn 332 basis points more than the regulated allowed

17 rate of return on book equity.

18

19 Third, the 6.68 percent cost of equity that follows from an initial

20 assumption of a 10 percent earned rate of return on book equity is less

21 than the 7.5 percent yield on A-rated utility bonds at the time of his

22 study. No rational investor would make an equity investment in a

1		regulated company's stock if they could earn more by investing in A-
2		rated utility bonds.
3	Q 15.	On pages 52 - 53 of his testimony, Mr. Rothschild claims that the
4		argument regarding inconsistency ignores the difference between
5		"accounting rates of return" and "market required rates of return."
6		Do you agree with Mr. Rothschild's defense of his b x r method?
7	A 15.	No. Mr. Rothschild's error has nothing to do with accounting standards or
8		market returns. It is simply a matter of logic: the cost of equity cannot be
9		based on knowledge of the allowed rate of return on equity, at the same
10		time that the allowed rate of return on equity is based on knowledge of the
11		cost of equity. Only one of these two variables can be known before the
12		other is calculated. However, in the b x r method, a variable that the
13		analyst is attempting to calculate is assumed to be known at the outset of
14		the analysis. Neither variable is determined independently of the other.
15		Thus, the b x r approach cannot be used to calculate the cost of equity for
16		rate-of-return regulated companies.
17	Q 16.	Turning to Mr. Rothschild's data sources, where does
18		Mr. Rothschild obtain his data for the retention ratio and rate of
19		return on book equity values he uses in his b x r approach to
20		estimating the internal growth component of the DCF cost of
21		equity?
22	A 16.	Mr. Rothschild uses data from the Value Line Investment Survey.

1   Q 17.   What are Value Line's forecasts of the average retention ratios and

2   rates of return on book equity for Mr. Rothschild's proxy groups?

3   A 17.   Value Line's forecasts of the average retention ratios and rates of return

4   on book equity for Mr. Rothschild's proxy groups, along with the

5   corresponding growth rates, are shown in Table 1 below.

6   **Table 1**

7   Proxy Companies' Forecasted Retention Growth Rates

8

	Electric Companies	Progress Energy	Gas Companies
Rate of Return on Equity	14.0%	13.0%	13.8%
Retention Ratio	49.9%	50.0%	50.1%
Retention Growth Rate	7.0%	6.5%	6.9%

9

10   Q 18.   Table 1 shows Value Line average rates of return on book equity of

11   14 percent for the electric company group, 13 percent for Progress

12   Energy, and 13.8 percent for the gas proxy group. Does Mr.

13   Rothschild use the rates of return on book equity reported in Table

14   1 to estimate the internal growth term in his application of the DCF

15   model?

16   A 18.   No. Mr. Rothschild uses rates of return on book equity of 13 percent for

17   the electric group, and 12.5 percent for both Progress Energy and the

18   gas company group.

19   Q 19.   Why does Mr. Rothschild use rates of return on book equity in his b

20   x r formula that are less than Value Line's forecasted rates of return

21   on book equity for his proxy companies?

1 A 19. Based on his review of historical data, Mr. Rothschild claims that

2   investors would surely recognize that the Value Line forecasted rates of

3   return on book equity are too high. He also claims that future earned

4   rates of return on book equity for these regulated companies are likely to

5   be lower because allowed rates of return will surely decline as interest

6   rates decline.

7 Q 20. **Is it fair to say that Mr. Rothschild's method for estimating future**

8   **rates of return on book equity for his proxy companies is highly**

9   **subjective?**

10 A 20. Yes. For example, Mr. Rothschild reports four values of rates of return

11   on book equity on his Schedule JAR 4, page 1: (1) a 14.02 percent

12   Value Line expectation; (2) a 15.33 percent expectation derived from

13   Zack's consensus growth rate; (3) a 12.76 percent earned return on

14   equity in 2000; and (4) a 13.12 percent earned return on equity for 1999.

15   He then arbitrarily picks 13 percent as his estimate of the expected rate

16   of return on book equity in his b x r calculations.

17 Q 21. **Mr. Rothschild uses an expected rate of return on book equity in his**

18   **b x r calculations that is approximately equal to the historical rates**

19   **of return on book equity of his proxy companies, and significantly**

20   **less than the forecasted rates of return on book equity for his proxy**

21   **companies. Is there any problem with Mr. Rothschild's heavy**

22   **reliance on historical rates of return on book equity?**

1   A 21.   Yes. Historical rates of return on book equity can be significantly

2   affected by one-time write-offs and other non-recurring items that affect

3   the historical numbers in previous accounting periods. In preparing their

4   growth forecasts, financial analysts normalize the earnings figures of

5   previous years. Thus, future allowed rates of return are more indicative

6   of investors' expectations than historical rates of return.

7   Q 22.   **Do you agree with Mr. Rothschild's assertion that investors would**

8   **surely recognize that Value Line's forecasts of future returns on**

9   **book equity are too high?**

10   A 22.   No. It is more reasonable to think that investors would accept Value

11   Line's forecasted rates of return on equity than Mr. Rothschild's.

12   Q 23.   **Do you agree with Mr. Rothschild's assertion that allowed rates of**

13   **return on equity should come down as interest rates decline?**

14   A 23.   No. Although short-term interest rates have declined over the last

15   several years, allowed rates of return tend to be more highly correlated

16   with long-term interest rates than with short-term interest rates. In

17   addition, interest rates, both short and long term, are beginning to

18   increase as the economy recovers and the Federal Reserve makes more

19   liquidity available for the economy.

20   Q 24.   **Does Mr. Rothschild's assertion that the cost of capital should**

21   **reflect declining allowed rates of return in the future illustrate your**

22   **earlier criticism that Mr. Rothschild's b x r approach to estimating**

23   **internal growth is logically inconsistent?**

1   A 24.   Yes. Mr. Rothschild's assertion illustrates my basic criticism that his

2   approach requires knowledge of the allowed rate of return before the

3   cost of capital can be estimated. Unfortunately, since, under rate-of-

4   return regulation the allowed rate of return is set equal to the cost of

5   capital, the allowed rate of return can only be known after the cost of

6   capital is determined. Thus, Mr. Rothschild's b x r approach applied to

7   regulated companies is inherently contradictory.

8   **Q 25.**   **Table 1 also shows Value Line retention ratios equal to 49.9 percent**

9   **for the electric proxy group, 50 percent for Progress Energy, and**

10   **50.1 percent for the gas proxy group. Does Mr. Rothschild use**

11   **these retention ratio values in his application of the b x r approach**

12   **to estimating future growth in the DCF model?**

13   A 25.   No. Mr. Rothschild uses retention ratios in the range 29.3 to 31.5

14   percent for the electric group, 38 to 40 percent for Progress Energy, and

15   33 to 35.3 percent for the gas proxy group. Mr. Rothschild's use of

16   retention ratios that are significantly less than Value Line's forecasted

17   retention ratios for his proxy groups significantly reduces his DCF results

18   for his proxy groups.

19   **Q 26.**   **How does Mr. Rothschild attempt to justify his use of retention**

20   **ratios that are significantly less than Value Line's average**

21   **forecasted retention ratios for his proxy companies?**

22   A 26.   Mr. Rothschild attempts to justify his use of low retention ratios on the

23   ground that Value Line and other analysts have failed to recognize that

1   the forecasted retention ratio for a particular company must be

2   consistent with its actual retention ratio embodied in the current dividend.

3   The analysts' failure to recognize this need for consistency, according to

4   Mr. Rothschild, causes them to overestimate forecasted retention ratios,

5   and, hence, growth.

6   **Q 27. Do you agree with Mr. Rothschild's claim that the forecasted**

7   **retention ratio for a company must be "consistent with" the**

8   **company's actual retention ratio embodied in the current dividend?**

9   A 27. No. The retention ratio embodied in the current dividend depends on the

10   company's earnings in the previous year. Since future earnings are

11   likely to be different from the earnings of the previous year, there is no

12   reason why forecasted retention ratios must be "consistent with" the

13   retention ratio embodied in the firm's current dividend. In addition, Mr.

14   Rothschild fails to recognize that the current retention ratio can be

15   distorted by the inclusion of non-recurring items in the firm's previous

16   year's earnings. Analysts generally eliminate non-recurring items when

17   they forecast future earnings and retention ratios.

18   **Q 28. Do you agree with Mr. Rothschild's assertion that his retention ratio**

19   **formula is the only correct formula for estimating the retention ratio**

20   **in the DCF model?**

21   A 28. No. Mr. Rothschild has, in fact, used an incorrect formula to calculate

22   his proxy companies' retention ratios. The retention ratio is commonly

23   calculated as one minus the dividend payout ratio, where the dividend

1   payout ratio is simply dividends divided by earnings, or D/E.

2   Mr. Rothschild, however, calculated the retention ratio incorrectly, as:

3   one minus the ratio of the dividend yield on book value per share to the

4   rate of return on equity. Thus, Mr. Rothschild calculated the retention

5   ratio not as (1 - D/E), but rather, as [1 - (D/B÷E/B)]. This formula would

6   be correct only if Mr. Rothschild had divided both dividends and earnings

7   by the same book value per share, B. However, Mr. Rothschild divided

8   his dividends per share by last year's book value per share, and his

9   earnings per share by some unknown future book value per share. In

10   short, Mr. Rothschild's formula does not correctly measure the retention

11   ratio as one minus the dividend payout ratio.

12 **Q 29. Has Mr. Rothschild provided any evidence that investors use his**

13   **formula for the retention ratio, rather than the Value Line forecasted**

14   **retention ratio, in estimating future growth?**

15 A 29. No. Indeed, I have never seen another witness or professional use Mr.

16   Rothschild's method for estimating a company's retention ratio.

17 **Q 30. Are there other problems with Mr. Rothschild's DCF analysis?**

18 A 30. Yes. There are several additional problems with Mr. Rothschild's DCF

19   analysis. First, Mr. Rothschild's DCF methodology is extremely sensitive

20   to his estimates of each company's future return on equity. Yet,

21   Mr. Rothschild provides no objective method of obtaining his estimates

22   of the future return on equity. As a result of the sensitivity of his model

23   results to the choice of return on equity, and because of his lack of

1	objective standards for estimating the future rate of return on equity,
2	Mr. Rothschild can obtain virtually any result through his choice of return
3	on equity.
4	Second, Mr. Rothschild incorrectly uses the external financing rate (0.80
5	percent) of his electric proxy group in calculating the external financing
6	growth of Progress Energy and his natural gas proxy group. Since the
7	external financing rates for both Progress Energy and the natural gas
8	group are expected to be higher than the electric companies' external
9	financing rate, Mr. Rothschild has understated the external financing
10	growth rates for Progress Energy and the natural gas group, and thus,
11	underestimated the cost of equity for these groups.
12	Third, the growth estimates in Mr. Rothschild's DCF analysis are
13	inconsistent with financial research on the relationship between growth
14	rates and stock prices. Financial research shows that analysts' growth
15	forecasts are more closely related to stock prices than either historical
16	growth rates or $b \times r$ growth rates. This research provides strong
17	evidence that investors, in fact, use analysts' growth estimates and that
18	the analysts' growth estimates should be used in the DCF Model to
19	estimate the cost of common equity.
20	Fourth, Mr. Rothschild fails to include an allowance for flotation costs in
21	his DCF analysis. This failure causes him to further underestimate
22	Florida Power's cost of equity.

1	Q 31.	What DCF results would Mr. Rothschild have obtained if he had
2		correctly used the Value Line forecasted retention ratios, rates of
3		return on book equity, and external financing rates, rather than his
4		own values (or incorrect values) for these variables for calculating
5		the growth term in the DCF model?
6	A 31.	Mr. Rothschild would have obtained DCF estimates in the range 12.74
7		percent to 13.02 percent for his electric proxy group, 12.07 percent to
8		12.24 percent for Progress Energy, and 12.91 percent to 12.95 percent
9		for his natural gas company proxy group. See Vander Weide Rebuttal
10		Schedules 1, 2, and 3.
11	Q 32.	You note above that Mr. Rothschild's arbitrary and incorrect growth
12		estimates in his DCF analysis are inconsistent with financial
13		research on the relationship between growth rates and stock
14		prices. Can you provide examples of the financial research that
15		shows that analysts' growth forecasts are more closely related to
16		stock prices than historical or $b \times r$ growth estimates?
17	A 32.	Yes. The early research demonstrating the superiority of analysts'
18		growth estimates was published in the book, *Expectations and the*
19		*Structure of Share Prices* by John G. Cragg and Burton G. Malkiel.
20		Professor Willard Carleton and I did later research in a paper published
21		in the spring 1988 issue of *The Journal of Portfolio Management.*
22		Further research supporting the superiority of analysts' forecasts has
23		been published in the spring 1989 issue *of The Journal of Portfolio*

1 *Management* by Myron J. Gordon, David A. Gordon, and Lawrence I.

2 Gould.

3 **Q 33.** **On pages 77 - 80 of his direct testimony, Mr. Rothschild argues that**

4 **your study with Dr. Carleton is irrelevant to this proceeding,**

5 **because it did not directly test his application of the b x r approach**

6 **to estimating future growth. Do you agree with his assertion?**

7 A 33. No. My study with Dr. Carleton tested a b x r approach in which the b

8 and the r values were determined from the most recent historical values.

9 As noted above, Mr. Rothschild has chosen b and r values that are very

10 similar to the most recent historical b and r values for his proxy electric

11 companies. Thus, his method, in fact, is very similar to the b x r method

12 I tested in my paper with Dr. Carleton. Furthermore, Mr. Rothschild fails

13 to acknowledge that his growth estimation process is so subjective that

14 no one could possibly test his method precisely.

15   **B. Mr. Rothschild's Complex DCF Model**

16 **Q 34.** **How does Mr. Rothschild's complex DCF model differ from his**

17 **simplified DCF model?**

18 A 34. Mr. Rothschild's simplified DCF model assumes that each company's

19 dividends, earnings, and cash flow will grow at the same rate forever,

20 while his complex DCF model assumes that each company's dividends

21 will be equal to Value Line's forecasted dividends per share in each of

22 the next five years, and that dividend growth beyond year five is equal to

| 1 | retention growth plus external financing growth, just as in his simple DCF |
| 2 | model. |

Q 35. How do Mr. Rothschild's complex DCF results compare to his simplified results?

A 35. Mr. Rothschild's complex DCF results are approximately equal to the results he obtains from his simplified DCF model.

Q 36. Does Mr. Rothschild's complex DCF model provide an accurate estimate of the cost of equity for Florida Power?

A 36. No. Mr. Rothschild's complex DCF model is subject to all of the same criticisms as his simplified DCF model. His complex DCF model incorrectly uses: (1) Mr. Rothschild's inconsistent b x r approach to estimating future internal growth; (2) future rates of return on book equity that are less than Value Line's forecasted rates of return on book equity; and (3) future retention ratios that are significantly less than Value Line's forecasted retention ratios for his proxy companies. In addition, Mr. Rothschild's complex DCF model, like his simplified DCF model, ignores the quarterly payment of dividends and flotation costs. Given the similarities between Mr. Rothschild's complex and simplified DCF models, it is not surprising that he arrives at approximately the same estimate of the cost of equity using these two DCF models. For the reasons discussed above, the Commission should reject the results of Mr. Rothschild's complex and simplified DCF models.

1		**C. Mr. Rothschild's Inflation Risk Premium Method**
2	Q 37.	**How does Mr. Rothschild use what he calls the inflation risk**
3		**premium method to estimate Florida Power's cost of equity?**
4	A 37.	Mr. Rothschild begins with Dr. Siegel's estimate that stocks have earned
5		an average real (adjusted for inflation) rate of return over the period
6		1802 to 1997 in the range of 6.6 percent to 7.2 percent. He then
7		develops a calculation to support his opinion that investors expect long-
8		term inflation to be 2.0 percent per year. From this information, he
9		concludes that investors can expect to earn a nominal (not adjusted for
10		inflation) rate of return in the range of 8.60 percent to 9.20 percent on
11		stocks of average risk. Mr. Rothschild then reduces this estimate by
12		247 to 277 basis points to reflect his opinion that Florida Power has less
13		than average risk. He concludes that Florida Power's cost of equity is in
14		the range of 6.13 percent to 6.43 percent, with a midpoint of
15		6.28 percent (see Schedule JAR 9).
16	Q 38.	**Is 6.28 percent a reasonable estimate of Florida Power's cost of**
17		**equity?**
18	A 38.	No. Mr. Rothschild's 6.28 percent estimate of the cost of equity using
19		his inflation risk premium method is more than 100 basis points less than
20		the current yield on Moody's A-rated utility bonds. No reasonable
21		investor would invest in Florida Power's equity if they expected to earn a
22		rate of return of 6.28 percent, when they could earn more than 7.57
23		percent on Moody's A-rated utility bonds. Indeed, investors can currently

1   earn an equivalent rate of return exceeding 8.3 percent on AAA-rated,

2   fully insured municipal bonds.

3 **Q 39. Does Mr. Rothschild realize that 6.28 percent is an unreasonable**

4   **estimate of Florida Power's cost of equity?**

5 A 39. Apparently he does. On Schedule JAR 9, he reports a cost of equity

6   estimate of 6.28 percent for electric utilities using the inflation risk

7   premium approach. However, when Mr. Rothschild summarizes his

8   results on Schedule JAR 2, he does not report the 6.28 percent inflation

9   risk premium cost of equity. Rather, he reports the 8.90 percent inflation

10   risk premium cost of equity he obtains for the market as a whole, not his

11   result for the electric companies. I can only conclude that Mr. Rothschild

12   must have believed that a result of 6.28 percent was so low that it would

13   damage the credibility of his methodology.

14 **Q 40. You mention that Mr. Rothschild began with Dr. Siegel's estimate**

15   **that stocks have earned a real rate of return of 6.6 percent to**

16   **7.2 percent over the period 1802 to 1997. Are stock data for a**

17   **period beginning in 1802 reliable?**

18 A 40. No. During the 19th century, the stock market was comprised of very few

19   stocks, mainly the stocks of several banks, railroads, and insurance

20   companies, located in the Northeast. These stocks were thinly traded;

21   and, since no dividend data were available, a rough estimate had to be

22   made of the average dividends on these stocks. Furthermore, prices for

23   the period generally were based on averages of high and low bids, not

1   prices at which trades actually occurred. For these and many other

2   reasons, the historical returns on these stocks are simply not indicative

3   of returns investors expect to receive on stock investments in 2001.[2]

4   **Q 41.   Is Mr. Rothschild's inflation risk premium a widely used method for**

5   **estimating the cost of equity?**

6   A 41.   No. Indeed, this method of estimating the cost of equity is unique to

7   Mr. Rothschild. I am not aware of anyone else employing this method to

8   estimate the cost of equity, and Mr. Rothschild does not identify anyone

9   else using his "technique."

10   **Q 42.   Does Mr. Rothschild's inflation risk premium method for estimating**

11   **the cost of equity differ from the traditional Capital Asset Pricing**

12   **Model ("CAPM") for estimating the cost of equity?**

13   A 42.   Yes. As explained above, Mr. Rothschild's inflation risk premium method

14   begins with an estimate of the long-run real rate of return on common

15   stock investments, adjusts this estimate for the average beta of his proxy

16   companies, and adds an estimate of inflation. The traditional CAPM

17   begins with an estimate of the risk-free rate of interest and adds an

18   estimate of the risk premium on an investment in the target company

19   compared to the risk-free investment. According to the CAPM, the cost

20   of equity is equal to the risk-free rate plus beta times the expected return

21   on the market.

---

[2] Siegel's study relies on data obtained from G. William Schwert, "Indexes of U.S. Stock Prices from 1802 to 1987," *Journal of Business*, 1990. Vol. 63, no. 3. Schwert discusses the many problems with stock return data prior to 1926.

1 Q 43. **What is the effect of the differences between Mr. Rothschild's**

2 **inflation risk premium method and the traditional CAPM?**

3 A 43. Mr. Rothschild's inflation risk premium method produces a significantly

4 lower estimate of the cost of equity than the traditional CAPM method

5 would produce because Mr. Rothschild implicitly uses an extremely low

6 estimate of the market risk premium over the yield on 90-day Treasury

7 bills. Indeed, Mr. Rothschild uses a market risk premium of 5.09 percent

8 to 5.69 percent, rather than the 9.1 percent estimate of the market risk

9 premium over Treasury bills reported by Ibbotson Associates (obtained

10 from Ibbotson Associates' *2001 Yearbook*).

11 Q 44. **Do you agree with Mr. Rothschild's opinion that the market risk**

12 **premium has declined dramatically from 9.1 percent to an average**

13 **of just 5.39 percent?**

14 A 44. No. Ibbotson Associates, the most widely used source of risk premium

15 data, provides an extensive analysis of trends in the market risk

16 premium. Ibbotson Associates states unequivocally in its *2001*

17 *Yearbook* that there is no conclusive evidence that the equity risk

18 premium has declined. To the contrary:

19 Our own empirical evidence suggests that the yearly
20 difference between the stock market total return and the
21 U.S. Treasury bond income return in any particular year is
22 random. ... The best estimate of the expected value of a
23 variable that has behaved randomly in the past is the
24 average (or arithmetic mean) of its past values. [Ibbotson
25 Associates *2001 Yearbook*, pages 64 - 65.]

1   Q 45. You mentioned earlier that the traditional CAPM would produce a

2   higher result than Mr. Rothschild's Inflation Risk Premium method.

3   Is the traditional CAPM a reasonable method of estimating Florida

4   Power's cost of equity?

5   A 45. No. There are several problems in using the traditional CAPM to

6   estimate Florida Power's cost of equity at this time. First, it is well known

7   that the traditional CAPM underestimates the cost of equity for

8   companies that have betas less than 1.0 and overestimates the cost of

9   equity for companies that have betas greater than 1.0. Second, the

10   traditional CAPM ignores the extensive evidence that the investors'

11   required rate of return depends on more than the risk-free rate and the

12   expected return on the market.

13   Q 46. What evidence do you have that the traditional CAPM tends to

14   underestimate the cost of equity for companies whose equity betas

15   are less than 1.0 and to overestimate the cost of equity for

16   companies whose equity betas are greater than 1.0?

17   A 46. The original evidence that the traditional CAPM tends to underestimate

18   the cost of equity in those instances was presented in a paper by Black,

19   Jensen, and Nobel Laureate Scholes, "The Capital Asset Pricing Model:

20   Some Empirical Tests." Numerous subsequent papers have validated

1   the Black, Jensen, and Scholes findings, including those by Litzenberger

2   and Ramaswamy, Banz, Fama and French, and Fama and MacBeth.[3]

3 Q 47. **What evidence do you have that the market prices other sources of**

4   **systematic risk?**

5 A 47. There are many studies that demonstrate that stock returns cannot be

6   adequately explained by the risk-free rate and the return on the market

7   portfolio, as assumed by the CAPM. These studies demonstrate that

8   additional variables, such as interest rates, dividend yields, market

9   capitalization, and the market-to-book ratio, are required to explain the

10   variation in stock returns. (A sample of these studies is listed in

11   Footnote 3.)

12 Q 48. **What are the implications of the widespread evidence that the**

13   **market prices other sources of systematic risk?**

14 A 48. These studies provide evidence that the analyst must be careful in

15   interpreting the results of an application of the traditional CAPM. Since

16   investors generally recognize additional sources of systematic risk

17   besides that captured in the traditional CAPM, the traditional CAPM may

18   underestimate the investors' required rate of return on equity for

19   companies that are sensitive to these additional factors.

---

[3] Fischer Black, Michael C. Jensen, and Myron Scholes, "The Capital Asset Pricing Model: Some Empirical Tests," in *Studies in the Theory of Capital Markets*, M. Jensen, ed. New York: Praeger, 1972; Eugene Fama and James MacBeth, "Risk, Return, and Equilibrium: Empirical Tests," *Journal of Political Economy* 81 (1973), pp. 607—36; Robert Litzenberger and Krishna Ramaswamy, "The Effect of Personal Taxes and Dividends on Capital Asset Prices: Theory and Empirical Evidence." *Journal of Financial Economics* 7 (1979), pp. 163—95.; Rolf Banz, "The Relationship between Return and Market Value of Common Stocks," *Journal of Financial Economics* (March 1981), pp. 3—18; and Eugene Fama and Kenneth French, "The Cross-Section of Expected Returns," *Journal of Finance* (June 1992), pp. 427—465.

1	Q 49	**Do you have any other reservations about the use of the CAPM at**
2		**this time?**
3	A 49	Yes. The CAPM relates a company's cost of equity to the interest rates
4		on risk-free Treasury securities. For many years, the spread between
5		the yield on long-term Treasury securities and the yield on A-rated utility
6		bonds has been approximately 100 basis points. Since the summer of
7		1998, however, the spread between the yields on long-term Treasury
8		bonds and A-rated utility bonds has increased to more than 200 basis
9		points due to: (1) an increased demand for U.S. Treasury securities
10		resulting from international capital market uncertainty; and (2) the
11		Treasury's announced intention to significantly reduce the supply of
12		long-term Treasury bonds in response to government surpluses. The
13		increased spread between the yield on long-term Treasury bonds and
14		A-rated utility bonds has caused the CAPM cost of equity results to
15		decline at a time when the cost of money for utilities as measured by the
16		yield on A-rated utility bonds has remained relatively constant. Thus, in
17		addition to the tendency, as noted above, of the CAPM to underestimate
18		the cost of equity for companies whose betas are less than 1.0, the
19		unadjusted CAPM further underestimates the cost of equity at this time
20		because of the unusually large spread between the yields on long-term
21		Treasury bonds and utility bonds.

1   D. Mr. Rothschild's Debt Risk Premium Approach

2   Q 50. **How does Mr. Rothschild implement his debt risk premium method**

3   **to implement Florida Power's cost of equity?**

4   A 50. Mr. Rothschild implements his debt risk premium method in three steps.

5   First, he estimates a market risk premium for several classes of bonds.

6   Second, he multiplies his estimate of the market risk premium by the

7   average utility beta to obtain his estimate of the correct risk premium for

8   utility stocks. Third, he adds his utility stock risk premium to the current

9   yield on each category of bonds to obtain his debt risk premium estimate

10   of Florida Power's cost of equity. (See Schedule JAR 10.)

11   Q 51. **What cost of equity estimates does Mr. Rothschild obtain from his**

12   **debt risk premium method?**

13   A 51. As shown on Schedule JAR 10, using his debt risk premium method, Mr.

14   Rothschild obtains cost of equity estimates equal to 4.45 percent, 6.59

15   percent, 6.74 percent, 7.05 percent, and 8.12 percent.

16   Q 52. **Does Mr. Rothschild's debt risk premium method provide**

17   **reasonable estimates of Florida Power's cost of equity?**

18   A 52. No. Four of his five debt risk premium results lie below the current yield

19   on Moody's A-rated utility bonds; and the fifth result is below the current

20   equivalent yield on AAA-rated, fully insured municipal bonds. No

21   reasonable investor would invest in Florida Power's equity if they

22   expected to earn a return in the range 4.45 percent to 8.12 percent,

23   when they could earn returns above these rates on investments in either

1		Moody's A-rated utility bonds or AAA-rated, fully insured municipal
2		bonds.
3	Q 53.	**Why does Mr. Rothschild's debt risk premium method produce**
4		**such low cost of equity estimates?**
5	A 53.	Mr. Rothschild's debt risk premium method produces extremely low cost
6		of equity results for three reasons. First, his estimates of the market risk
7		premium are significantly below both the average historical market risk
8		premiums and the current required market risk premiums on investments
9		of average risk. Second, Mr. Rothschild's use of the CAPM beta fails to
10		recognize that the CAPM significantly underestimates the cost of equity
11		for companies with below average risk. Third, Mr. Rothschild
12		underestimates the current interest rate on corporate bonds. Moody's
13		interest rate on Aa-rated corporate bonds is currently 7.01 percent, not
14		the 6.32 percent reported by Mr. Rothschild on Schedule JAR 10,
15		page 1.
16	Q 54.	**Do you agree with Mr. Rothschild's opinion stated on pages 63 - 70**
17		**of his direct testimony that the market risk premium has declined**
18		**significantly in recent years?**
19	A 54.	No. As I note in my direct testimony, the Ibbotson historical risk
20		premium data that Mr. Rothschild relies on do not reveal a statistically
21		significant downward trend. Ibbotson Associates, the premiere provider
22		of risk premium data, continue to recommend the use of the average

1		arithmetic mean risk premium over the entire period, 1926 to the
2		present, to estimate the cost of equity.
3	**Q 55.**	**Have you reviewed Mr. Rothschild's 30-year moving average risk**
4		**premium data?**
5	A 55.	Yes. Mr. Rothschild's 30-year moving average risk premium data is
6		distorted by the unusual, highly negative risk premium results that
7		occurred in the years 1973 and 1974, a time when the U. S. economy
8		was experiencing distortion from an oil embargo, a government-
9		mandated price freeze, and high inflationary pressures.
10	**Q 56.**	**Do you have any evidence that the risk premium on utility stock**
11		**stocks may have actually increased in recent years?**
12	A 56.	Yes. As shown on Schedule 4 of my direct testimony, the ex ante risk
13		premium on natural gas distribution stocks increased from 5.10 percent
14		in June 1998 to 7.5 percent in June 2001.
15 16		**E. Response to Mr. Rothschild's Comments on Dr. Vander Weide's Testimony**
17	**Q 57.**	**What are Mr. Rothschild's criticisms of your cost of equity studies?**
18	A 57.	Mr. Rothschild has four criticisms of my cost of equity studies. First, he
19		argues that I incorrectly use a non-constant growth rate in the constant
20		growth version of the DCF model. Second, he argues that the historical
21		arithmetic average return I used in my historical risk premium study is an
22		upwardly-biased indicator of future expected returns. Third, he argues
23		that my use of the average risk premium over the period 1936 to the
24		present ignores the downward trend in historical risk premiums over the

1   last three or four decades. Fourth, he contends that I used a risk

2   premium based on the historic relationship between stocks and Treasury

3   bonds, and then incorrectly added this risk premium to the interest rate

4   on AAA-rated corporate bonds.

5   Q 58. **On page 76 of his direct testimony, Mr. Rothschild argues that your**

6   **DCF formula requires earnings, dividends, book value, and stock**

7   **price to all grow at the same rate in each future year. Is he correct?**

8   A 58. Although Mr. Rothschild is technically correct in stating that earnings,

9   dividends, book value, and stock price are all assumed to grow at the

10   same rate in the DCF model, he grossly misunderstands how the DCF

11   model is used in practice by investors. While investors recognize that

12   earnings, dividends, book value, and stock price rarely grow at the same

13   rate in every future year, they continue to use the simple constant growth

14   DCF model because it represents a reasonable approximation of reality.

15   As long as the growth term in the DCF model is a reasonable

16   representation of the *average* long-run growth, it is reasonable to use the

17   constant growth DCF model in valuing stocks.

18 Q 59. **On page 74 of his direct testimony, Mr. Rothschild argues that your**

19   **use of the five-year analysts' growth rate implies a continuous**

20   **increase in a company's earned rate of return on equity. Do you**

21   **agree?**

22 A 59. No. My use of the I/B/E/S growth rates is simply based on the

23   assumption that these rates accurately reflect investors' long-run

1   average growth expectations for earnings, dividends, book value, and

2   share price. An average growth rate, by implication, is a constant growth

3   rate, and does not imply a "continuous increase" in the earned return on

4   equity.

5   **Q 60. Do you agree with Mr. Rothschild's assertion that your use of the**

6   **I/B/E/S growth estimates implies an average earned rate of return**

7   **on equity and an average retention ratio that are higher than the**

8   **most recently reported rates of return on equity and retention ratios**

9   **for your proxy companies?**

10   A 60. Yes. However, my acceptance of this proposition does not imply that

11   investors expect the earned rate of return on equity and retention ratio to

12   increase forever. It only implies that the average forecasted earned rate

13   of return and retention ratios are higher than the most recent historical

14   earned rates of return and retention ratios for the proxy companies.

15   Given the changes in the energy industries I have studied, this is not an

16   unreasonable assumption.

17   **Q 61. Do you have any evidence that investors expect your proxy**

18   **companies' earned rates of return on equity and retention ratios to**

19   **be higher than their most recent historical levels?**

20   A 61. Yes. The analysts preparing Value Line reports for my proxy companies

21   clearly believe that the average future rate of return on equity and the

22   average future retention ratio for these companies are likely to be

23   greater than their most recent historical levels.

1 Q 62. **Do you agree with Mr. Rothschild's assertion that the arithmetic**

2   **average risk premium you used in your historical risk premium**

3   **study is an upwardly biased estimator of future expected risk**

4   **premiums?**

5 A 62. No. Mr. Rothschild fails to understand that the arithmetic average risk

6   premium is the best risk premium for the purpose of discounting

7   expected future cash flows. In particular, the arithmetic average risk

8   premium is the only risk premium, that, when used as a discount rate,

9   will equate the future expected value of an investment with its present

10   value. Since the cost of equity reflects the future, not the past, the

11   arithmetic average risk premium should be used in estimating the cost of

12   equity.

13 Q 63. **Can you illustrate how the arithmetic mean is the best measure for**

14   **estimating future returns on equity?**

15 A 63. Yes.[4] Suppose that the expected return on a stock is 10 percent per

16   year, and that the only possible outcomes in each of the next two years

17   is a return of plus 30 percent, or minus 10 percent, with equal probability.

18   If the investor invests one dollar at the beginning of year one, their

19   expected wealth at the end of year two will be equal to $1.21, calculated

20   as follows:

---

[4] This example is taken from *Stocks, Bonds, Bills, and Inflation Valuation Edition, 2001 Yearbook*,
Ibbotson Associates, pp. 62 – 63.

Table 2

Outcome	EOY 2 Wealth	Probability	Expected Value
(30,30)	$1.69	.25	0.4225
(30,-10)	1.17	.25	0.2925
(-10,30)	1.17	.25	0.2925
(-10,.-10)	0.81	.25	0.2025
		TOTAL	$1.21

The arithmetic mean return on the above investment over the two-year period is 10 percent, calculated as $(30 - 10)/2 = 10$ percent. The geometric mean return on this investment is 8.2 percent, calculated as follows:

$$[(1 + 0.30) \times (1 - 0.10)]^{1/2} - 1 = 0.082$$

That the arithmetic mean is the correct rate of return to use in discounting future cash flows can be seen by discounting the expected future value of $1.21 using the arithmetic mean return of 10 percent as the discount rate:

$$\$1 = \frac{1.21}{(1.10)^2}$$

That the geometric mean is the incorrect term to use as the discount rate of future cash flows can be seen by discounting the expected future value of $1.21 using the geometric mean return of 8.2 percent as the discount rate:

$$\$1.0335 = \frac{1.21}{(0.082)^2}$$

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1   Thus, the geometric mean return does not equate the expected future

2   value of the investment to its present value, and, hence, is not the

3   correct rate to use in discounting future cash flows.

4   Q 64. **You note that the above example comes from Ibbotson Associates.**

5   **Does Ibbotson Associates agree with your assertion that the**

6   **arithmetic average equity risk premium is the correct rate for**

7   **discounting future cash flows?**

8   A 64. Yes. They state on page 61:

9   The equity risk premium data presented in this book are
10   arithmetic average risk premia as opposed to geometric
11   average risk premia. The arithmetic average equity risk
12   premium can be demonstrated to be most appropriate when
13   discounting future cash flows. For use as the expected
14   equity risk premium in either the CAPM or the building block
15   approach, the arithmetic mean or the simple difference of
16   the arithmetic means of stock market returns and riskless
17   rates is the relevant number. This is because both the
18   CAPM and the building block approach are additive models,
19   in which the cost of capital is the sum of its parts. The
20   geometric average is more appropriate for reporting past
21   performance, since it represents the compound average
22   return.

23   Q 65. **Mr. Rothschild's third criticism is that your historical risk premium**

24   **study ignores the downward trend in risk premiums that has**

25   **occurred over the last three or four decades. Do you agree with his**

26   **assertion that risk premiums have trended downward over the last**

27   **three or four decades?**

28   A 65. No. I provided evidence in my direct testimony that there is no

29   statistically significant downward trend in historical risk premiums. The

30   absence of a downward trend in risk premiums is also evident from the

	1920s	1930s	1940s	1950s	1960s	1970s	1980s	1990s	2000	1991-2000
	17.6%	2.3%	8.0%	17.9%	4.2%	0.3%	7.9%	12.1%	-15.6%	11.6%

1   data on the average risk premium by decade provided by Ibbotson

2   Associates, reproduced below in Table 3. (Ibbotson Associates 2001

3   Yearbook, Valuation Edition, p. 65.)

4   **Table 3**

5

6   **Q 66. On page 65 of his testimony, Mr. Rothschild presents a graph of the**

7   **30-year moving average risk premium on stocks versus 30-year**

8   **Treasury bonds, which seems to indicate that the risk premium has,**

9   **in fact, declined in the last 30 years. Do you agree with Mr.**

10   **Rothschild's conclusion?**

11 A 66. No. Ibbotson Associates explains that the decline in the 30-year moving

12   average risk premium can be explained entirely by the very large

13   negative returns that were earned in 1973 and 1974 as a result of the oil

14   embargo during that period:

15   The key to understanding this result [the apparent downward
16   trend in the 30-year period] lies again in the years 1973 and
17   1974. The oil embargo during this period had a tremendous
18   effect on the market. The equity risk premium for these
19   years alone was -21 and -34 percent, respectively. If we
20   look at the last 30 years excluding 1973 and 1974, the 28-
21   year period results in an equity risk premium of 8.7 percent,
22   as opposed to 6.3 percent with these years included.[5]

---

[5] Ibbotson Associates, *op. cit.*, p. 70.

1		Ibbotson also explains that examining 20-year moving averages rather
2		than 30-year moving averages would reveal a large increase in the
3		equity risk premium in all 20-year periods subsequent to 1973 and 1974.
4	**Q 67.**	**Mr. Rothschild's last criticism is that you computed an historical**
5		**risk premium based on the relationship between stocks and**
6		**Treasury bonds, and then added this risk premium to the current**
7		**interest rate on AAA-rated corporate bonds. Is Mr. Rothschild**
8		**correct?**
9	A 67.	No. Neither of my two risk premium studies adds a risk premium
10		calculated from Treasury bonds to an interest rate on AAA-rated
11		corporate bonds. My historical risk premium study adds a risk premium
12		calculated from historical data on utility bonds to the yield on A-rated
13		utility bonds, and my ex ante risk premium study adds a risk premium
14		calculated from interest rates on Treasury bonds to the current yield on
15		Treasury bonds. Mr. Rothschild has simply misinterpreted the risk
16		premium studies I thoroughly and carefully describe in my direct
17		testimony.

18   **III. REBUTTAL OF MR. GORMAN**

19   **Q 68. How did Mr. Gorman estimate Florida Power's cost of equity?**

20   A 68. Mr. Gorman applied several cost of equity methodologies to a group of

21   ten electric companies. His cost of equity methodologies include: (1) a

22   constant growth DCF; (2) a non-constant growth DCF; (3) a bond yield

1   plus risk premium method; and (4) a Capital Asset Pricing Model

2   ("CAPM").

3   **A. Mr. Gorman's Risk Proxy Companies**

4 **Q 69. How did Mr. Gorman choose his proxy group for the purpose of**

5   **estimating Florida Power's cost of equity?**

6 A 69. As noted on pages 23 – 24 of his direct testimony, Mr. Gorman started

7   with the electric and combination electric and gas utilities followed by C.

8   A. Turner Utility Reports. He then included in his proxy group only those

9   companies that met the following criteria:

10   (a) had at least 80 percent of their revenues from the
11   provision of electric utility service; (b) an investment grade
12   bond rating from both Standard & Poor's and Moody's;
13   c) currently paying a dividend, and (d) utilities that have an
14   earnings growth rate published by IBES.

15 **Q 70. Do you agree with Mr. Gorman's criteria for selecting his group of**

16   **proxy companies?**

17 A 70. No. I have several criticisms of Mr. Gorman's criteria for selecting proxy

18   companies for the purpose of estimating Florida Power's cost of equity.

19   First, Mr. Gorman focused on one criteria, the percentage of revenues

20   from the sale of electricity, that rules out most of the companies that sell

21   both electricity and natural gas in the same energy market. From the

22   investor's point of view, Mr. Gorman's distinction between electric and

23   natural gas revenues is largely irrelevant. As I noted in my direct

24   testimony, both electric and natural gas companies: (1) employ a

25   capital-intensive physical network that connects each customer to the

1	source of energy; (2) procure energy for their customers; (3) sell energy
2	to customers whose energy demand is primarily dependent on the state
3	of the economy and the weather; and (4) are regulated by public utility
4	commissions that have traditionally viewed electric and natural gas
5	utilities as being comparable in risk. Thus, investors and regulators
6	recognize that electric and natural gas companies face similar risks.
7	
8	Second, Mr. Gorman focused entirely on the share of revenues from
9	electricity in the last fiscal year. Since the electric and natural gas
10	energy markets are rapidly converging, investors recognize that most of
11	Mr. Gorman's comparable companies are likely to enter the natural gas
12	sector of the energy market at some point in the not too distant future.
13	Thus, the current percentage of revenues from sales of electricity may
14	not be indicative of the future percentage of revenues from electricity.
15	
16	Third, Mr. Gorman offers no explanation for why he chose 80 percent of
17	revenues from electricity as a cutoff point for inclusion in his group.
18	Florida Power's parent, Florida Progress, currently receives 79 percent
19	of revenues from the sale of electricity. If Mr. Gorman wanted to focus
20	on the percentage of revenues from electricity, he should have chosen a
21	range that included Florida Power's percentage of electricity revenues as
22	a midpoint in the range.

1   Q 71. How do your criteria for selecting proxy companies differ from Mr.

2   Gorman's?

3   A 71. In contrast to Mr. Gorman's criteria, which eliminate all companies that

4   do not receive a very high percentage of revenues from the sale of

5   electricity, my criteria are designed to produce the largest possible

6   sample of electric and natural gas companies that are comparable in risk

7   and provide reliable DCF results. As noted in my direct testimony, I

8   selected all the companies in the Value Line electric and natural gas

9   company groups that: (1) paid dividends during every quarter of the last

10   five years; (2) did not decrease dividends during any quarter of the past

11   five years; (3) had at least three analysts included in the I/B/E/S

12   consensus growth forecast; and (4) have not announced mergers. All of

13   the companies that met these criteria also have a Value Line Safety

14   Rank of 1, 2, or 3. In total, my proxy group of electric companies

15   included 29 companies, and my proxy group of natural gas companies

16   included 14 companies, compared to Mr. Gorman's group of 10 electric

17   companies.

18   Q 72. Do you have any evidence that your group of electric and natural

19   gas energy companies are similar in risk to Mr. Gorman's group of

20   10 electric companies?

21   A 72. Yes. Value Line measures risk in terms of five risk indicators: safety

22   rank, beta, earnings predictability, price stability, and financial strength.

23   As shown in Vander Weide Rebuttal Schedule 4, the average Value Line

1		risk indicators for my comparable groups of electric and natural gas
2		companies are virtually identical to the average risk indicators for Mr.
3		Gorman's comparable group. In addition, as also shown in Vander
4		Weide Rebuttal Schedule 4, my group of electric companies have S&P
5		and Moody's bond ratings that are virtually identical to those of Mr.
6		Gorman's group.[6]
7	Q 73.	If your groups of electric and natural gas energy companies are
8		comparable in risk to Mr. Gorman's group of ten electric
9		companies, does it matter which proxy group the Commission
10		uses?
11	A 73.	Yes. There are at least two reasons why the Commission should use my
12		proxy groups rather than Mr. Gorman's. First, since there is always
13		some error in measuring the cost of equity for individual companies, it is
14		better to use a larger group of companies than a smaller group. As
15		noted above, I have examined 43 comparable companies, while Mr.
16		Gorman has looked at only 10. For larger groups, the statistical noise in
17		estimating the DCF results for individual companies can be significantly
18		reduced through the averaging process. Second, because my selection
19		criteria are designed to include the largest possible group of comparable
20		companies, I have avoided the temptation to bias the results through my
21		selection criteria.

---

[6] In making this comparison, I used data from Mr. Gorman's work papers. His work papers did not contain S&P and Moody's bond ratings for my natural gas group.

1   **B. Mr. Gorman's Constant Growth DCF Model**

2 **Q 74. What constant growth DCF model did Mr. Gorman use to estimate**

3   **Florida Power's cost of equity?**

4 A 74. Mr. Gorman used an annual constant growth DCF model without

5   flotation costs. His constant growth annual DCF model can be described

6   by the equation, $k = D_1/P_0 + g$, where k is the cost of equity, D_1 is the

7   expected next period dividend, P_0 is the current price, and g is the

8   expected growth rate.

9 **Q 75. Does Mr. Gorman's annual constant growth DCF model provide**

10   **accurate estimates of the cost of equity?**

11 A 75. No. Mr. Gorman's annual constant growth DCF model ignores the fact

12   that dividends are paid quarterly and fails to adjust for flotation costs.

13   For the reasons discussed in my direct testimony at pp. 16 – 17 and 21 -

14   24, quarterly dividends and flotation costs are important considerations

15   in the proper application of the DCF model. Inclusion of these

16   considerations would add approximately 50 basis points to Mr. Gorman's

17   annual constant growth DCF results.

18   **C. Mr. Gorman's Non-constant Growth DCF Model**

19 **Q 76. How does Mr. Gorman's non-constant growth DCF model differ**

20   **from his constant growth DCF model?**

21 A 76. In contrast to his constant growth DCF model, which assumes that the

22   proxy companies will grow at a constant rate forever, Mr. Gorman's non-

23   constant growth DCF model assumes that investors believe his proxy

1		companies will grow at the I/B/E/S growth rates for only five years, and
2		then grow at an estimate of the long-run growth in the U. S. economy
3		thereafter.

4 **Q 77. Does Mr. Gorman believe that his non-constant growth DCF model**

5 **provides a better representation of investor growth expectations**

6 **than his constant growth DCF model?**

7 A 77. Yes. On page 27 of his direct testimony, Mr. Gorman argues:

8	My constant growth DCF analysis is, in my judgment,
9	overstated because the current group average five-year
10	I/B/E/S projected growth rate is not a reasonable estimate of
11	sustainable growth. The comparable group average I/B/E/S
12	five-year growth rate is 6.82%. This growth rate is too high
13	to be sustainable over an indefinite period of time. The
14	growth rate cannot be sustained because it is exceeds the
15	growth rate of the overall U.S. economy. A company cannot
16	grow, indefinitely, at a faster rate than the market in which it
17	sells its products.

18 **Q 78. Do you agree with Mr. Gorman's statement that companies cannot**

19 **grow forever at a rate in excess of the expected growth in the U.S.**

20 **economy?**

21 A 78. Yes. As Mr. Gorman implies, if a company grew forever at a rate in

22 excess of the rate of growth of the U.S. economy, it would eventually

23 take over the economy. This is not a reasonable expectation.

24 **Q 79. Does the fact that a company cannot grow at a rate greater than the**

25 **rate of growth in the GNP forever preclude the use of a single-stage**

26 **DCF model?**

27 A 79. No. Mr. Gorman fails to recognize that (1) companies do not have to grow

28 at the same rate forever for the single-stage DCF Model to be a

1   reasonable approximation of how prices are determined in capital

2   markets; (2) it is common for companies to grow at rates significantly

3   greater than the rate of growth in GNP for long periods of time; and (3) the

4   average I/B/E/S growth rate for Mr. Gorman's proxy companies is certainly

5   achievable for a period longer than five years.

6   **Q 80. Why is the single-stage DCF Model a reasonable approximation of**

7   **reality even though firms cannot grow at rates in excess of GNP**

8   **growth forever?**

9   A 80. To understand why the single-stage DCF Model may be a reasonable

10   approximation of reality, even if firms cannot grow at rates exceeding the

11   GNP growth rate forever, recall that the DCF Model assumes that the

12   price of a company's stock is equal to the discounted value of its future

13   stream of dividends. Because future dividends are discounted at a rate,

14   k, that exceeds the growth rate, g, dividends beyond a specific finite

15   period, such as 40 or 50 years, have very little impact on the firm's stock

16   price. Thus, the validity of the single-stage DCF Model depends only on

17   whether firms can grow at a constant growth rate in excess of GNP for a

18   long period, not on whether firms can grow at a constant growth rate in

19   excess of GNP forever.

20   **Q 81. Does the fact that a company cannot grow at a rate of growth greater**

21   **than the growth in GNP forever imply that Mr. Gorman's growth**

22   **assumptions are correct?**

1   A 81. No. Mr. Gorman arbitrarily assumes that his proxy companies will grow at

2   the I/B/E/S growth rate for only five years. The statement that a

3   company's earnings cannot grow at a rate greater than the rate of growth

4   in the GNP forever, does not imply that companies can only grow faster

5   than the rate of growth in the economy for five years.

6   **Q 82. Does Mr. Gorman discuss why he assumed that his proxy**

7   **companies could only grow at the I/B/E/S growth rates for five**

8   **years?**

9   A 82. Yes. On page 29 of his testimony, Mr. Gorman states,

> 10   The use of a non-constant growth DCF analysis based on
> 11   today's market and company financial conditions is
> 12   problematic. The average dividend payout ratio of the
> 13   companies included in my comparable group in 2001 was
> 14   78%. The group payout ratio is projected to decline to 57%
> 15   in three to five years. At that time, the payout ratio will be in
> 16   line with the Value Line projected 55% industry payout ratio
> 17   projection.

18   **Q 83. Does the fact that Value Line projects Mr. Gorman's proxy group to**

19   **have a declining dividend payout for five years and a constant**

20   **dividend payout thereafter imply that the proxy companies must**

21   **grow at the forecasted economy-wide growth rate after five years?**

22   A 83. No. A constant dividend payout only implies that earnings and dividends

23   are projected to grow at the same rate—it does not imply that the growth

24   rate must be any specific value. Thus, use of the I/B/E/S growth rates

25   after five years is just as consistent with a projected constant dividend

26   payout ratio as is the forecasted economy-wide growth rate.

1   **Q 84.** **Recognizing your fundamental disagreement with Mr. Gorman's**

2   **use of a non-constant growth DCF model, are there any other**

3   **problems with Mr. Gorman's non-constant growth DCF result?**

4   A 84.   Yes. There are two problems with Mr. Gorman's non-constant growth

5   DCF result. First, Mr. Gorman uses an incorrect DCF formula in his non-

6   constant growth DCF model. Unlike his constant growth DCF model

7   formula, Mr. Gorman incorrectly raises the first growth factor in his non-

8   constant growth model to the ½ power. He should have raised it to the

9   first power. Second, in his single application of the non-constant growth

10   model, rather than applying the non-constant growth model to each

11   company individually with each company's specific price, dividend, and

12   growth values, Mr. Gorman incorrectly uses average price, dividend, and

13   growth values for the entire proxy group.

14   **Q 85.** **What non-constant DCF result would Mr. Gorman have obtained if**

15   **he had used the correct DCF formula in his non-constant growth**

16   **model?**

17   A 85.   Using the correct DCF formula in his non-constant growth model would

18   have increased Mr. Gorman's non-constant DCF result from 10.9

19   percent to 11.1 percent.

20   **Q 86.** **What non-constant DCF result would Mr. Gorman have obtained if,**

21   **in addition to using the correct formula, he had also applied this**

22   **formula to the individual company values?**

1 A 86. Mr. Gorman would have obtained an average DCF result of 11.24

2   percent if he had applied the correct non-constant growth DCF formula

3   to each company in his proxy group.

4 Q 87. **Do you have any evidence that the constant growth DCF model**

5   **provides a better representation of how investors value securities**

6   **than Mr. Gorman's non-constant DCF model?**

7 A 87. Yes. To test the relative ability of the constant and non-constant growth

8   DCF models to explain differences in how investors value securities, I

9   have examined whether there is a statistical relationship between a

10   company's price/earnings ratio and the growth rates used in both the

11   constant growth and non-constant growth DCF models. If investors use

12   the I/B/E/S growth rate in a constant growth DCF model in valuing

13   electric company stocks, rather than the average growth rate in Mr.

14   Gorman's non-constant growth DCF model, then the I/B/E/S growth rate

15   should be more highly correlated with company price/earnings ratios

16   than Mr. Gorman's average growth rate.

17

18   As shown in Tables 4 and 5 below, the I/B/E/S growth rates are

19   significantly more correlated with electric company price/earnings ratios

20   than are Mr. Gorman's average growth rates from his non-constant

21   model. The higher correlation of the I/B/E/S growth rates with

22   price/earnings ratios is demonstrated by: (1) the higher adjusted r

23   square in the equation containing the I/B/E/S growth rate, as opposed to

1   the equation containing the average growth rate in Mr. Gorman's non-

2   constant DCF model; and (2) the significantly higher t statistic on the

3   I/B/E/S growth rate compared to Mr. Gorman's average growth rate.

4   These results provide strong evidence that the constant growth DCF

5   model with the I/B/E/S growth rates is a reasonable approximation of

6   how investors value securities in the marketplace.

7
Table 4

8
9   Regression of P/E Ratios vs.
     I/B/E/S Growth Rate and Dividend Payout

10

	I/B/E/S Growth	Dividend Payout	Adjusted r square	F
Coefficient	0.417	0.094	**0.259**	6.070
T statistic	**2.588**	3.471		

11

12
Table 5

13
14   Regression of P/E Ratios vs.
      Non-Constant Growth Rate and Dividend Payout

15

	Non-Constant Growth	Dividend Payout	Adjusted r square	F
Coefficient	0.388	0.054	**0.083**	2.308
t statistic	**0.471**	1.946		

16
17
18   **D. Mr. Gorman's Bond Yield Plus Risk Premium Method**

19 Q 88. **What is the bond yield plus risk premium method for estimating the**

20   **cost of equity?**

21 A 88. The bond yield plus risk premium method assumes that the required rate

22   of return on a company's stock is equal to the interest rate on a

23   benchmark bond plus a required "risk premium" for accepting the greater

24   risk of investing in the company's stock as compared to the benchmark

1   bond. Thus, under the bond yield plus risk premium method, the cost of

2   equity is given by the following equation:

3   *Cost of equity = Interest rate on bond + Required risk premium*

4 **Q 89. How did Mr. Gorman estimate the required risk premium for**

5   **investing in his electric company proxy group?**

6 A 89. Mr. Gorman estimated the required risk premium for investing in electric

7   utility stocks from data on the average authorized electric utility rates of

8   return on equity for each year from 1986 to 2000. Mr. Gorman found

9   that the average authorized rates of return on equity for electric utilities

10   over this period was 4.75 percent higher than the yield on 30-year

11   Treasury bonds.

12 **Q 90. Do you agree with Mr. Gorman's method of estimating the required**

13   **risk premium on electric utility stocks?**

14 A 90. No. Mr. Gorman fails to recognize that the Florida Public Service

15   Commission has a responsibility to make an independent assessment of

16   the required return on equity for Florida Power in this proceeding. They

17   cannot simply rely on average authorized rates of return in other

18   jurisdictions. In addition, Mr. Gorman fails to recognize that the indicated

19   risk premium in his data base tends to increase as interest rates decline.

20   Indeed, in the last three years, his data show an average equity risk

21   premium of approximately 5.5 percent, 75 basis points higher than the

22   4.75 percent average of the entire period.

1   **E. Mr. Gorman's Capital Asset Pricing Model ("CAPM")**

2 **Q 91. How does Mr. Gorman use the CAPM to estimate the cost of equity**

3   **for his proxy companies?**

4 A 91. The CAPM requires an estimate of the risk-free rate, the company-

5   specific risk factor or beta, and the expected return on the market

6   portfolio. For his estimate of the risk-free rate, Mr. Gorman used the

7   forecasted yield to maturity on long-term Treasury bonds. For his

8   estimate of the company-specific risk, or beta, Mr. Gorman used the

9   average Value Line beta for his proxy companies. For his estimate of

10   the expected return on the market portfolio, Mr. Gorman used data on

11   the achieved return on the S&P 500 over the period 1926 to 2000

12   reported in Ibbotson Associates' 2000 Yearbook.

13 **Q 92. Do you agree with Mr. Gorman's use of the CAPM to estimate**

14   **Florida Power's cost of equity?**

15 A 92. No. Mr. Gorman fails to recognize that the CAPM significantly

16   underestimates the cost of equity for companies such as those in his

17   proxy group with betas less than 1.0. I provided extensive support for

18   this conclusion in my rebuttal of Mr. Rothschild.

19 **Q 93. Do you agree with the values Mr. Gorman used to estimate the risk**

20   **premium on the market portfolio in his CAPM approach?**

21 A 93. No. Mr. Gorman relies on data from Ibbotson Associates to estimate the

22   expected risk premium on the market portfolio. Ibbotson Associates

23   strongly recommend the use of the arithmetic mean risk premium equal

1   to 7.8 percent. However, Mr. Gorman has used a risk premium in the

2   range 6.7 percent to 7.3 percent, lowering his estimate of the cost of

3   equity even further.

4   **F. Response to Mr. Gorman's Comments on Dr.**
5   **Vander Weide's Testimony**

6   **Q 94. What criticisms does Mr. Gorman have of your cost of equity**

7   **estimate for Florida Power?**

8   A 94. Mr. Gorman's criticisms of my cost of equity estimate are summarized on

9   page 36 of his direct testimony, as follows:

10   The electric and gas utility samples are not reasonable risk
11   proxies for FPC.

12   His discounted cash flow analysis produces an overstated
13   result because the growth rate is too high to be a reasonable
14   estimate of sustainable growth rate, and his quarterly
15   compounding assumption produces a rate of return which is
16   too high for ratemaking purposes.

17   The risk premium analyses produce risk premium estimates
18   which overstate FPC's risk.

19   **Q 95. Why does Mr. Gorman believe that your electric and gas proxy**

20   **companies are not reasonable risk proxies for Florida Power?**

21   A 95. On page 36 of his testimony, Mr. Gorman claims that, since my

22   companies receive some portion of their revenues from natural gas and

23   other services, their business risk is not reasonably comparable to

24   Florida Power.

25   **Q 96. Is Mr. Gorman correct when he alleges that the risk of your proxy**

26   **companies is not comparable to the risk of Florida Power?**

1   A 96.   No. I demonstrated earlier in my rebuttal testimony that my proxy

2   companies on average have virtually identical risk indicators as Mr.

3   Gorman's own risk proxy group.

4   Q 97.   **Why does Mr. Gorman believe that your DCF results are**

5   **overstated?**

6   A 97.   On page 37 of his direct testimony, Mr. Gorman argues that the average

7   growth rate for my comparable companies is not sustainable because it

8   is higher than the average projected growth rate of the U.S. economy.

9   Q 98.   **Do you agree with Mr. Gorman's arguments about your DCF**

10   **results?**

11   A 98.   No. As I explained earlier in my rebuttal testimony, the single-stage DCF

12   model is a reasonable approximation of the process investors use in

13   valuing electric company stocks. First, it is not necessary for companies

14   to grow forever at the I/B/E/S growth rates for the single-stage DCF

15   model to be a reasonable representation of how securities are valued in

16   the marketplace. Second, the I/B/E/S growth rates used in my single-

17   stage DCF model are more highly correlated with the stock prices of

18   electric utilities than the average growth rates in Mr. Gorman's multi-

19   stage DCF model. Third, merely because a company cannot grow

20   forever at rates in excess of the U.S. economy does not mean that they

21   can only grow at five years at those rates, as Mr. Gorman assumes.

22   Q 99.   **Why does Mr. Gorman believe that your risk premium results**

23   **overstate a fair return for Florida Power?**

1   A 99.   Mr. Gorman has three objections to my risk premium results. First, he

2   argues that the natural gas companies used in my ex ante risk premium

3   study are not comparable in risk to electric companies such as Florida

4   Power. Second, he argues that the growth rate in my ex ante risk

5   premium analysis may be unreasonably high. Third, he argues that my

6   ex post risk premium results for the S&P 500 are not relevant in this

7   proceeding. (See Gorman at pp. 38 –39.)

8   **Q 100. Do you agree with Mr. Gorman's claim that your natural gas proxy**

9   **group is not comparable in risk to electric companies such as**

10   **Florida Power?**

11   A 100. No. I have provided convincing evidence that investors consider electric

12   and natural gas companies to be comparable in risk. Indeed, I explained

13   on page 28 of my direct testimony that the economic characteristics of

14   electric and natural gas companies are virtually identical, and I

15   demonstrated in Vander Weide Rebuttal Schedule 4 that both my

16   electric and natural gas proxy groups have approximately the same risk

17   profile.

18   **Q 101. Do you agree with Mr. Gorman's claim that the growth rates in your**

19   **ex ante risk premium study may be unreasonably high?**

20   A 101. No. I provided evidence in Tables 4 and 5 that investors use the I/B/E/S

21   growth rates rather than Mr. Gorman's average non-constant growth

22   rates in making stock buy and sell decisions.

1   Q 102. Do you agree with Mr. Gorman's claim that your ex post risk

2   premium results for the S&P 500 are not relevant in this

3   proceeding?

4   A 102. No. Mr. Gorman fails to note that I provided ex post risk premium results

5   for both the S&P 500 (Vander Weide Direct Schedule 5) and the S&P

6   Utilities (Vander Weide Direct Schedule 6) over the period 1937 to 2001.

7   The ex post risk premium for the S&P 500 was 6.29 percent and the ex

8   post risk premium for the S&P Utilities was 5.14 percent over the yield on

9   A-rated utility bonds. Since the S&P utility stocks faced little or no

10   competition over much of the period 1937 to 2001, I believe electric

11   utilities today face risks that are somewhere in between the average risk

12   of the S&P Utilities and the S&P 500 over the years 1937 to 2001. Thus,

13   taken in conjunction with my ex post risk premium studies on the S&P

14   Utilities, the risk premium on the S&P 500 is relevant in this proceeding.

15   **IV. REBUTTAL OF MR. KURY**

16 Q 103. How did Mr. Kury estimate Florida Power's cost of equity?

17 A 103. Mr. Kury uses what he calls a two-stage DCF model to estimate Florida

18   Power's cost of equity. Mr. Kury's two-stage DCF model differs from a

19   single-stage DCF model in that he assumes that his proxy companies

20   grow at one rate in the short-run, and at a second rate in the long run.

21   Mr. Kury then uses the average of his short-run and long-run growth

22   estimates in a single-stage DCF model to estimate Florida Power's cost

23   of equity. Mr. Kury's single-stage DCF model has the form, k =

1     $D(1+.5g)/P + g$, where D is the current dividend, P is the price, and g is

2   an average of Mr. Kury's short-run and long-run growth rates.

3   **A. Mr. Kury's Proxy Companies**

4   **Q 104. What risk proxy companies did Mr. Kury use to estimate Florida**

5   **Power's cost of equity?**

6   A 104. Mr. Kury uses two groups of proxy companies to estimate Florida

7   Power's cost of equity. On pages 12 and 13 of his testimony, he states:

8   The first group consisted of the companies that received the
9   Value Line safety rating of 1. The average cost of common
10   equity for these companies, as determined by the DCF
11   model, would be 10.38%. The second group consisted of
12   the companies that are rated B++ by Value Line for
13   Financial Strength. The average cost of common equity for
14   these companies, as determined by the DCF model, would
15   be 10.95%.

16   **Q 105. Does Mr. Kury in fact include in his proxy groups all Value Line**

17   **electric companies that have a safety rank of 1 or a Financial**

18   **Strength of B++?**

19   A 105. No. Mr. Kury includes only 8 of the 11 Value Line companies with a

20   safety rank of 1, and only 10 of the 21 Value Line companies with a

21   financial strength rating of B++ (see Mr. Kury's work papers, Exhibits 3

22   and 4).

23   **Q 106. Does Mr. Kury's testimony contain any explanation of why he**

24   **eliminated some companies with either a safety rank of 1 or a**

25   **financial strength rating of B++?**

26   A 106. No, it does not.

1   Q 107. Do Mr. Kury's work papers provide any explanation of why he

2   eliminated these companies?

3   A 107. Mr. Kury's work papers only contain some brief comments explaining

4   that he eliminated a few companies because of merger activity or a

5   dividend reduction. His work papers do not contain an explanation for

6   his elimination of several other companies with safety ranks of 1 or

7   financial strength ratings of B++. For example, Mr. Kury's work papers

8   do not explain why he eliminated Southern Company, which has a

9   financial strength rating of B++.

10   Q 108. Why did Mr. Kury use a risk proxy group with a Value Line safety

11   rank of 1?

12   A 108. Mr. Kury used a risk proxy group with a Value Line safety rank of 1

13   because Progress Energy's Value Line safety rank appears to be 1 in

14   the most recent edition of the Value Line Investment Survey.

15   Q 109. Is there any reason to believe that Progress Energy's safety rank

16   may, in fact, not be 1, as indicated by Value Line?

17   A 109. Yes. There are two reasons why Progress Energy's safety rank is

18   unlikely to be 1 at this time. First, Value Line states that it computes its

19   safety rank by calculating a simple average of its price stability index and

20   its financial strength rating for each company. (See *How to Invest in*

21   *Common Stocks: a Guide to Using the Value Line Investment Survey*,

22   p. 40.) However, Value Line also indicates that Progress Energy has no

23   price stability index at this time, presumably because of insufficient post-

1   merger price data. Thus, Value Line does not have sufficient data to

2   compute a safety rank for Progress Energy at this time. Second, a

3   simple glance at Mr. Kury's Exhibit No. __(TJK-4) reveals that all the

4   Value Line electric utilities in his proxy group with a financial strength

5   rating of B++ have safety ranks equal to 2. It is highly unlikely that

6   Progress Energy could have a safety rank of 1, when Value Line assigns

7   it a B++ financial strength rating.

8 **Q 110. What effect did Mr. Kury's use of a proxy group with a Value Line**

9 **safety rank of 1 have on his recommended cost of equity?**

10 A 110. Mr. Kury obtained an average DCF result of 10.38 percent for his

11   truncated proxy group with a safety rank of 1, and a DCF result of 10.95

12   percent for his truncated proxy group with a financial strength rating of

13   B++. If Mr. Kury had used only his second proxy group, he would have

14   recommended a cost of equity 10.95 percent, rather than the 10.66

15   percent average DCF result from his two proxy groups.

16 **Q 111. On page 14 of his testimony, Mr. Kury criticizes you for selecting a**

17 **proxy group of electric utilities with Value Line safety ranks in the**

18 **range 1 to 3, when Progress Energy's safety rank is 1. Do you**

19 **agree with this criticism?**

20 A 111. No. As I have demonstrated, it is highly unlikely that Progress Energy's

21   safety rank is actually 1 at this time. Since Value Line calculates its

22   safety rank as an average of its price stability index and its financial

23   strength rating, and Value Line currently does not have a price stability

1 index for Progress Energy, Value Line could not have calculated a safety

2 rank of 1 for Progress Energy. In addition, Progress Energy's financial

3 strength rating is B++, and all the other Value Line electric companies

4 with a financial strength rating of B++ have a safety rank of 2. (See Mr.

5 Kury's work papers for Exhibits 3 and 4.)

6 **B. Mr. Kury's Two-Stage DCF Model**

7 **Q 112. Please describe how Mr. Kury used his two-stage DCF model to**

8 **estimate Florida Power's cost of equity.**

9 A 112. As noted above, Mr. Kury's two-stage DCF model is actually a single-

10 stage DCF model, where the growth term is an average of Mr. Kury's

11 estimate of the short-run and long-run growth rates for each of his proxy

12 companies. As his estimate of the short-run growth rate for each of his

13 companies, Mr. Kury used an average of the Value Line forecasted

14 dividend and earnings growth rates for the period 1998 – 2000 to 2004 -

15 2006. As his estimate of the long-run growth rate for each company, Mr.

16 Kury states that he used the "long-term nominal GDP forecast of 6.1%

17 from the 2002 Annual Energy Outlook published by the Department of

18 Energy's Energy Information Administration." (Kury at p. 12.)

19 **Q 113. Do you agree with Mr. Kury's use of the average of Value Line's**

20 **forecasted dividend and earnings growth rates as his estimate of**

21 **short-run growth in his DCF model?**

22 A 113. No. Value Line's current average dividend growth forecast for Mr. Kury's

23 electric companies is based on its assumption that the electric

1   companies are in the process of adjusting to a lower target dividend

2   payout ratio. As shown below, dividends must grow at the same rate as

3   earnings once the companies have achieved their new target dividend

4   payout ratio. Thus, Value Line's forecasted earnings growth rate is a

5   better estimate of long-run dividend growth than its current forecasted

6   dividend growth rate.

7 **Q 114. Do you have any evidence that Value Line's dividend forecasts for**

8   **Mr. Kury's proxy companies are based on the assumption of a**

9   **declining dividend payout ratio?**

10 A 114. Yes. As shown in Exhibit No. ___(TJK-4), Value Line's earnings

11   forecasts for Mr. Kury's proxy companies are all larger than Value Line's

12   dividend forecasts for these companies. Whenever earnings are

13   expected to grow at a faster rate than dividends, the dividend payout

14   ratio will necessarily decline.

15 **Q 115. Suppose that analysts expect an electric company's dividends to**

16   **grow by less than its earnings over the next several years because**

17   **of the company's transition to a new, lower target dividend payout**

18   **ratio. Does this situation imply that analysts' earnings growth**

19   **projections for this company cannot be used to estimate the "g"**

20   **term in the DCF model?**

21 A 115. No. To illustrate, suppose that a company's current dividend payout ratio

22   is approximately 75 percent and that the company intends to adjust its

23   dividend payout ratio to 60 percent. Once the company achieves its new

1   dividend payout target, dividends will grow at the same rate as earnings.

2   As long as the transition is relatively short, the earnings growth forecast

3   would still be a good estimate of long-term dividend growth in the DCF

4   Model.[7]

5   **Q 116. What two-stage DCF model results would Mr. Kury have obtained**

6   **for his proxy companies if he had used only Value Line's earnings**

7   **growth forecasts to estimate the short-run growth component of**

8   **his two-stage DCF model?**

9   A 116. As shown on Vander Weide Rebuttal Schedule 5, Mr. Kury would have

10   obtained DCF results for his two proxy groups of 11.91 percent and

11   13.09 percent.

12 **Q 117. On page 13 of his testimony, lines 15 – 21, Mr. Kury argues that his**

13   **"two-stage growth rate better reflects investor expectations over**

14   **the time horizon of the DCF model" than your I/B/E/S growth rates.**

15   **Have you performed any tests of whether Mr. Kury's two-stage**

16   **growth rate better reflects investor expectations than your I/B/E/S**

17   **growth rates for his proxy group of electric companies?**

---

[7]For any one year period of time, a company's earnings growth rate is given by the equation:

$$g_E = \frac{E_t}{E_{t-1}}$$

Assuming that the company has achieved its new dividend payout ratio of 60%, their dividend growth rate is given by the equation:

$$g_D = \frac{D_t}{D_{t-1}} = \frac{.6E_t}{.6E_{t-1}} = \frac{E_t}{E_{t-1}}$$

Thus, once the company achieves its new dividend payout ratio, dividends must grow at the same rate as earnings.

1 A 117. Yes. Similar to the statistical analysis I describe in Tables 4 and 5 of my

2   rebuttal testimony, I calculated the statistical relationship between the

3   price/earnings ratios of Mr. Kury's proxy companies and both the I/B/E/S

4   growth rates and Mr. Kury's two-stage growth rates. As shown in Tables

5   6 and 7 below, the I/B/E/S growth rates better reflect investor

6   expectations, as reflected in stock prices, than Mr. Kury's two-stage

7   growth rates. The fact that the I/B/E/S growth rates better reflect

8   investor expectations is demonstrated by the higher adjusted r squares

9   and t statistics in the regression equation containing the I/B/E/S growth

10   rate (Table 6) than in the regression equation containing Mr. Kury's two-

11   stage growth rates (Table 7).

Table 6

Regression of P/E Ratios vs.
I/B/E/S Growth Rate and Dividend Payout

	Intercept	I/B/E/S Growth	Dividend Payout	Adjusted r square	F
Coefficient	-0.586	0.612	0.128	**0.445**	7.402
t statistic	-0.184	**3.140**	3.841		

Table 7

Regression of P/E Ratios vs.
Mr. Kury's Growth Rate and Dividend Payout

	Intercept	Mr. Kury's Growth	Dividend Payout	Adjusted r square	F
Coefficient	9.049	-0.045	0.044	**0.055**	1.468
t statistic	3.163	**-0.163**	1.442		

1   C. Flotation Costs

2   Q 118. Does Mr. Kury include an allowance for flotation costs in his DCF

3   analysis?

4   A 118. No, he does not.

5   Q 119. Why do you believe that flotation costs should be included in

6   estimating Florida Power's cost of equity?

7   A 119. My reasons for including flotation costs are explained in my direct

8   testimony on pages 21 – 24 and Appendix 2.

9   Q 120. On page 15 of his testimony, Mr. Kury claims that your flotation

10   cost adjustment "overstates the required return on equity for FPC,

11   and, if implemented, would result in unfairly enriching Progress

12   Energy at the expense of the Florida customer." Do you agree?

13   A 120. No. As noted in my direct testimony, Florida Progress incurred flotation

14   costs in the last year that approximate the five percent flotation cost

15   adjustment I have included in my cost of equity calculations. Without my

16   adjustment, Progress Energy would have no opportunity to recover these

17   and other flotation expenses.

18   V. REBUTTAL OF MR. MAUREY

19   Q 121. What methods does Mr. Maurey use to estimate Florida Power's

20   cost of equity?

21   A 121. Mr. Maurey uses both the DCF model and the CAPM to estimate Florida

22   Power's cost of equity.

1   Q 122. Do you agree with Mr. Maurey's use of the CAPM to estimate Florida

2   Power's cost of equity?

3   A 122. No. As I noted in my rebuttals of Mr. Rothschild and Mr. Gorman, there

4   is considerable evidence in the finance literature that the CAPM tends to

5   significantly understate the cost of equity for companies such as Mr.

6   Maurey's comparable group of electric companies that have betas less

7   than 1.0. Thus, the CAPM should not be used in this proceeding to

8   estimate Florida Power's cost of equity.

9   Q 123. Do you have any areas of agreement with Mr. Maurey in regard to

10   his DCF analysis?

11   A 123. Yes. I agree with Mr. Maurey's: (1) use of analyst's earnings growth

12   forecasts to estimate the growth component of his DCF model; (2) use of

13   a five percent flotation cost allowance; (3) use of a full-year's growth rate

14   to estimate the next year's dividend in his DCF model; (4) consideration

15   of the results of a quarterly DCF model; and (5) decision to begin his

16   analysis of proxy companies with my comparable group of electric

17   companies.

18   Q 124. Do you have any areas of disagreement in regard to Mr. Maurey's

19   cost of equity analyses?

20   A 124. Yes. I disagree with Mr. Maurey's decisions to: (1) eliminate companies

21   from my electric group that receive less than 75 percent of their

22   revenues from the sale of electricity; (2) eliminate companies from my

23   natural gas proxy group that receive less than 60 percent of their

1   revenues from the sale of natural gas; and (3) reject my ex post risk

2   premium analysis.

3 **Q 125. Why did Mr. Maurey eliminate companies from your electric proxy**

4   **group that receive less than 75 percent of their revenues from the**

5   **sale of electricity?**

6 A 125. Mr. Maurey states on page 12 of his testimony, lines 19 – 23, that:

7   Since the Commission is only interested in the required
8   return associated with the provision of regulated electric
9   service, it stands to reason the most appropriate index to
10   rely on as a proxy for FPC would be an index of companies
11   that rely significantly on revenue generated from regulated
12   operations."

13 **Q 126. Do you agree with Mr. Maurey's argument that it is appropriate to**

14   **eliminate many of your proxy companies because they receive a**

15   **significant percentage of revenues from non-regulated operations?**

16 A 126. No. Because a company in the Value Line electric industry receives, for

17   example, 70 percent of its revenues from the sale of electricity, does not

18   mean that the company receives a high percentage of its revenues from

19   non-regulated operations. Indeed, since many of the Value Line electric

20   companies are combination electric and natural gas companies, it is

21   more likely that the remaining 30 percent of revenues come from the

22   sale of natural gas, which is still largely a regulated business.

23

24   In addition, I disagree with Mr. Maurey's claim that regulated operations

25   are always less risky than unregulated operations. The well-publicized

26   financial problems of the California electric utilities, for example, arise

1		primarily from their regulated electric operations, not their non-regulated
2		businesses.
3	Q 127.	Does the same argument apply to Mr. Maurey's decision to
4		eliminate companies from your natural gas proxy group that receive
5		less than 60 percent of their revenues from the sale of natural gas?
6	A 127.	Yes. Because a company receives less than 60 percent of its revenues
7		from the sale of natural gas does not mean that the company receives a
8		large percentage of revenues from non-regulated operations. Keyspan,
9		for example, receives a high percentage of revenues from both regulated
10		natural gas and electricity sales. For the reasons discussed in my direct
11		and rebuttal testimonies, the electric and natural gas businesses are
12		considered by investors to be similar in risk.
13	Q 128.	Why does Mr. Maurey reject your ex post risk premium analysis?
14	A 128.	Mr. Maurey argues on page 19 of his testimony that it is "generally
15		recognized that the ex post risk premium approach is unreliable for
16		purposes of estimating future expected returns."
17	Q 129.	Do you agree with Mr. Maurey's assessment that the ex post risk
18		premium approach is not a reliable approach for estimating the
19		cost of equity?
20	A 129.	No. The ex post risk premium approach is widely used in cost of equity
21		analyses. Indeed, Ibbotson Associates is a well known financial
22		research firm whose major product is reporting ex post risk premium
23		results for use in cost of capital analyses.

1   **Q 130. Does Mr. Maurey have any other criticisms of your ex post risk**

2   **premium approach?**

3   A 130. Yes. Mr. Maurey also claims on page 19 of his testimony that "[t]he

4   results of an ex post approach are extremely sensitive to the period

5   selected for measuring the risk premium."

6   **Q 131. Do you agree with Mr. Maurey's assessment that the ex post risk**

7   **premium approach should be abandoned because it is sensitive to**

8   **the time period used to measure the risk premium?**

9   A 131. No. The ex post risk premium result is relatively stable over the long

10   time periods recommended by those who have studied ex post risk

11   premium results carefully. It is only over short time periods that the ex

12   post risk premium approach is sensitive to the time period chosen. I

13   have never recommended use of a short time period in my ex post risk

14   premium studies.

15   **Q 132. Does this conclude your rebuttal testimony?**

16   A 132. Yes, it does.

RECALCULATION OF ROTHSCHILD SCHEDULE JAR-4, PAGE 1
ELECTRIC COMPANIES
DISCOUNTED CASH FLOW (DCF) INDICATED COST OF EQUITY

	BASED ON AVERAGE MARKET PRICE FOR AVERAGE OF Year Ending 11/30/01	BASED UPON MARKET PRICE AS OF 11/30/01
Dividend Yield On Market Price	4.84%	5.26%
Retention Ratio:		
a) Market-to-book	1.90	1.69
b) Div. Yield on Book	9.19%	8.91%
c) Return on Equity	14.00%	14.00%
d) Retention Rate	50.00%	50.00%
Reinvestment Growth	7.00%	7.00%
New Financing Growth (sv)	0.72%	0.55%
Total Estimate of Investor Anticipated Growth	7.72%	7.55%
Increment to Dividend Yield for Growth to Next Year	0.19%	0.20%
Indicated Cost of Equity	12.74%	13.02%

Source of data: Mr. Rothschild's Schedule JAR-4 and The Value Line Investment Survey.

RECALCULATION OF ROTHSCHILD SCHEDULE JAR 4, PAGE 2
PROGRESS ENERGY
DISCOUNTED CASH FLOW (DCF) INDICATED COST OF EQUITY

	BASED ON AVERAGE MARKET PRICE FOR Year Ending 11/30/01	BASED UPON MARKET PRICE AS OF 11/30/01
Dividend Yield On Market Price	4.81%	5.11%
Retention Ratio:		
a) Market-to-book	1.61	1.46
b) Div. Yield on Book	7.76%	7.48%
c) Return on Equity	13.00%	13.00%
d) Retention Rate	50.00%	50.00%
Reinvestment Growth	6.50%	6.50%
New Financing Growth (sv)	0.59%	0.44%
Total Estimate of Investor Anticipated Growth	7.09%	6.94%
Increment to Dividend Yield for Growth to Next Year	0.17%	0.18%
Indicated Cost of Equity	12.07%	12.24%

Source of data: Mr. Rothschild's Schedule JAR-4 and The Value Line Investment Survey.

RECALCULATION OF ROTHSCHILD SCHEDULE JAR 4, PAGE 3
GAS COMPANIES
DISCOUNTED CASH FLOW (DCF) INDICATED COST OF EQUITY

	BASED ON AVERAGE MARKET PRICE FOR Year Ending 11/30/01	BASED UPON MARKET PRICE AS OF 11/30/01
Dividend Yield On Market Price	4.64%	4.89%
Retention Ratio:		
a) Market-to-book	1.80	1.65
b) Div. Yield on Book	8.37%	8.09%
c) Return on Equity	13.80%	13.80%
d) Retention Rate	50.10%	50.10%
Reinvestment Growth	6.91%	6.91%
New Financing Growth (sv)	1.17%	0.96%
Total Estimate of Investor Anticipated Growth	8.09%	7.87%
Increment to Dividend Yield for Growth to Next Year	0.19%	0.19%
Indicated Cost of Equity	12.91%	12.95%

Source of data: Mr. Rothschild's Schedule JAR-4 and The Value Line Investment Survey.

Vander Weide Rebuttal Schedule 4
Comparison of Value Line Risk Indicators and Bond Ratings
For Vander Weide and Gorman Proxy Groups
Page 1
Summary

Company	Safety Rank	Beta	Earnings Predictability	Price Stability Rank	Financial Strength		Bond Ratings S&P	Moody's
Vander Weide Electrics								
Market Weighted Average	1.8	0.54	75	97		3.5	A to A-	A2
Average	1.9	0.54	77	97	B++ to A	3.7		
Vander Weide LDCs								
Market Weighted Average	1.8	0.59	52	97		3.7		
Average	2.0	0.60	65	96	B++ to A	3.9		
Gorman Electrics								
Market Weighted Average	1.8	0.53	85	95		3.5	A to A-	A2
Average	1.8	0.55	74	92	B++ to A	3.7		

Vander Weide Rebuttal Schedule 4
Comparison of Value Line Risk Indicators and Bond Ratings
For Vander Weide and Gorman Proxy Groups
Page 2
Vander Weide Electric Group

Company	Mkt Cap $ (Mil)	Safety Rank	Beta	Earnings Predictability	Price Stability Rank	Financial Strength		Bond Rating S&P		Moody	
Allegheny Energy	4,407	1	0.60	65	95	A	3	A+	6	A1	7
ALLETE	2,035	2	0.50	95	100	B++	4	BBB+	9	Baa1	10
Ameren Corp.	5,907	1	0.55	85	100	A+	2	A+	6	AA2	5
American Elec. Power	14,135	2	0.55	60	100	B++	4	A-	8	A3	9
Cinergy Corp.	5,223	2	0.55	70	95	A	3	A-	8	Baa1	10
Cleco Corp.	953	2	0.60	90	100	B++	4	BBB+	9	A2	8
CMS Energy Corp.	3,125	3	0.55	85	90	B	6	BBB	10	Baa3	12
Dominion Resources	14,813	2	0.50	55	100	B++	4	A-	8	A2	8
DPL Inc.	3,037	2	0.65	95	95	B+	5	BBB+	9	A2	8
DQE	1,073	3	0.45	55	90	B++	4	BBB+	9	A3	9
DTE Energy	6,644	3	0.55	70	100	B+	5	A-	8	A2	8
Duke Energy	30,062	1	0.55	75	95	A+	2	A	7	A3	9
FPL Group	9,799	2	0.45	100	100	A	3	A	7	Aa3	6
G't Plains Energy	1,523	2	0.55	50	100	B++	4	A	7	A1	7
Hawaiian Elec.	1,351	3	0.50	85	100	B+	5	BBB+	9	A3	9
IDACORP Inc.	1,471	2	0.55	80	100	B++	4	AA-	5	A2	8
MDU Resources	1,930	1	0.60	85	95	A+	2	A+	6	A2	8
NiSource Inc.	4,787	3	0.45	75	95	B+	5	BBB-	11	A2	8
NSTAR	2,365	1	0.55	90	100	A	3	A	7	A3	9
Pinnacle West Capital	3,547	1	0.45	90	95	A+	2	A-	8	A3	9
Progress Energy	9,778	1				B++	4	BBB+	9	A1	7
Public Serv. Enterprise	8,485	2	0.55	85	95	B++	4	A-	8	A3	9
Reliant Energy	7,588	2	0.60	60	90	B++	4	BBB+	9	A3	9
Southern Co.	17,022	2				B++	4	A+	6	A1	7
TECO Energy	3,576	1	0.50	80	100	A+	2	AA	4	Aa2	5
TXU Corp.	12,379	3	0.60	80	95	B+	5	BBB+	9	Baa1	10
UIL Holdings	733	2	0.50	75	100	B++	4	NR	NR	A3	9
Vectren Corp.	1,555	2				A	3	A	7	A1	7
Xcel Energy Inc.	9,634	2				B++	4	AA	4	A1	7
Market Weighted Ave.		1.83	0.54	75	97		3.5	A to A-	7.61	A2	8.17

Source of data: The Value Line Investment Survey; bond ratings from Mr. Gorman's work papers.

Vander Weide Natural Gas Group

Company	Market Cap $ (Mil)	Safety Rank	Beta	Earnings Predictability	Price Stability Rank	Financial Strength	
AGL Resources	1,202.9	2	0.60	55	100	B++	4
Atmos Energy	859.9	3	0.55	45	95	B+	5
Energen Corp.	726.9	2	0.75	75	80	B++	4
KeySpan Corp.	4,783.7	2	0.55	5	95	B++	4
Laclede Group	460.6	2	0.50	70	100	B++	4
New Jersey Resources	810.7	2	0.55	100	100	B++	4
NICOR Inc.	1,821.7	1	0.60	90	100	A+	2
Northwest Nat. Gas	658.3	2	0.60	60	95	B++	4
NUI Corp.	318.2	3	0.70	75	90	B+	5
Peoples Energy	1,295.6	1	0.70	65	100	A	3
Piedmont Natural Gas	1,110.9	2	0.60	90	100	B++	4
SEMCO Energy	197.6	3	0.65	45	85	B+	5
South Jersey Inds.	382.5	2	0.45	70	100	B++	4
WGL Holdings Inc.	1,333.4	1	0.60	70	100	A	3
Market Weighted Average		1.81	0.59	52	97		3.7

Gorman Electric Group

Company	Market Cap $ (Mil)	Safety Rank	Beta	Earnings Predictability	Price Stability Rank	Financial Strength		Bond Ratings S&P		Moody's	
Ameren Corp.	5,907	1	0.55	85	100	A+	2	A+	6	Aa2	5
DPL Inc.	3,037	2	0.65	95	95	B+	5	BBB+	9	A2	8
Empire Dist. Elec.	368	2	0.45	70	95	B++	4	A-	8	Baa1	10
Entergy Corp.	8,825	2	0.55	80	90	B++	4	BBB	10	Baa2	11
FPL Group	9,799	2	0.45	100	100	A	3	A	7	Aa3	6
G't Plains Energy	1,523	2	0.55	50	100	B++	4	A	7	A1	7
NSTAR	2,365	1	0.55	90	100	A	3	A	7	A3	9
Pinnacle West Capital	3,547	1	0.45	90	95	A+	2	A-	8	A3	9
Sierra Pacific Res.	1,571	3	0.75	10	55	B	6	A-	8	A3	9
Southern Co.	17,022	2				B++	4	A+	6	A1	7
Market Weighted Ave.		1.81	0.55	85	95		3.5	A to A-	7.6	A2	8.1

Source of data: Mr. Gorman's work papers.

Vander Weide Rebuttal Schedule 5
Discounted Cash Flow Analysis
Kury Proxy Group
Using Value Line Earnings Growth Forecasts

Company	3 Month Dividend Yield	Value Line Earnings	LT Growth Rate	2 Stage Growth Rate	Mr. Kury's DCF	Revised DCF
Con Edison	5.58%	2.50%	6.10%	4.30%	9.61%	10.00%
Ameren	6.33%	4.00%	6.10%	5.05%	10.64%	11.54%
CH Energy Group	5.18%	3.00%	6.10%	4.55%	9.08%	9.85%
Duke Energy	2.91%	15.00%	6.10%	10.55%	9.81%	13.61%
MDU Resources	3.65%	8.00%	6.10%	7.05%	9.94%	10.83%
Allegheny Energy	4.78%	14.00%	6.10%	10.05%	11.87%	15.07%
NStar	4.82%	6.50%	6.10%	6.30%	10.38%	11.27%
WPS Resources	6.11%	7.50%	6.10%	6.80%	11.70%	13.12%
Average					10.38%	11.91%
Dominion Resources	4.34%	19.00%	6.10%	12.55%	12.31%	17.16%
Entergy	3.35%	7.00%	6.10%	6.55%	8.87%	10.01%
Great Plains Energy	6.78%	4.50%	6.10%	5.30%	11.10%	12.26%
Idacorp	4.95%	2.50%	6.10%	4.30%	8.72%	9.36%
NiSource	5.26%	16.00%	6.10%	11.05%	14.93%	16.60%
OGE Energy	6.00%	2.50%	6.10%	4.30%	9.79%	10.43%
Public Service Enterprise Group	5.30%	6.50%	6.10%	6.30%	10.23%	11.77%
Reliant Energy	5.61%	9.50%	6.10%	7.80%	11.19%	13.63%
Sempra Energy	4.21%	12.00%	6.10%	9.05%	9.11%	13.45%
Xcel Energy	5.38%	15.00%	6.10%	10.55%	13.26%	16.21%
Average					10.95%	13.09%
Average Result Both Groups					10.66%	12.50%

Source of data: Mr. Kury's work papers Exhibits 3 and 4.