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**BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION**

DOCKET NO 891345-EI

**REBUTTAL TESTIMONY
AND EXHIBITS
OF
R. A. MORIN**

Gulf Power



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1 A. Yes.

2 Counsel: We ask that Dr. Morin's Exhibit (RAM-2),
3 comprised of four schedules, be marked
4 for identification as Exhibit _____.

4 Q. How is your testimony organized?

5 A. My testimony is organized in two parts dealing with the
6 testimony of Messrs. Rothschild and Seery.

7

8 COMMENTS ON MR. ROTHSCHILD'S TESTIMONY

9

10 Q. Please summarize Mr. Rothschild's rate of return
11 recommendation.

12 A. In determining the cost of equity applicable to Gulf
13 Power's Florida operations, Mr. Rothschild applies DCF
14 analysis to The Southern Company, as a proxy for Gulf
15 Power, and to a group of non-nuclear electric utilities
16 drawn from Moody's 24 Electrics. As a check on the DCF
17 results, he performs a Comparable Earnings check using
18 the DOW Jones Industrials Index and an alleged
19 market-to-book ratio check. Based on the results of
20 these analyses, he recommends a return of 11.75 percent
21 on Gulf's common equity capital.

22

23 Q. Do you have any general comments on Mr. Rothschild's
24 testimony?

25 A. Yes. Before I engage in specific criticisms of

1 Mr. Rothschild's testimony, my general reaction to his
2 testimony is that it is extremely narrow in scope,
3 relying solely on the fragile sustainable growth DCF
4 model results applied to Southern Company and to
5 Moody's 24 Electrics and on a questionable Comparable
6 Earnings test applied to a composite of industrial
7 companies. His recommendation of 11.75 percent rests
8 entirely on one DCF variant. Using this particular
9 variant of the DCF method, Mr. Rothschild was forced to
10 assume the ROE answer before he even began his
11 determination of Gulf Power's equity costs using that
12 method.

13 No other DCF results are performed, including the
14 conventional historical growth DCF model, nor are
15 useful traditional cross-checks on the DCF results
16 implemented, such as Risk Premium or Capital Asset
17 Pricing Model methodologies. Mr. Rothschild has put
18 all his eggs in the DCF sustainable growth basket, and
19 thereby has set a very dangerous precedent for this
20 Commission. Moreover, not only is his recommendation
21 of 11.75 percent based on faulty premises and
22 methodologies, but it is also highly unreasonable,
23 since it is barely above, if at all, the current yield
24 on Gulf's bonds, which is about 10.25 percent. The
25 implied risk premium is far less than the risk premiums

1 found in the general academic finance literature and in
2 Mr. Rothschild's own testimony. I also show that his
3 divisional cost of capital allocation as between
4 industrial and residential customers is based on
5 erroneous conceptual premises, and is inconsistent with
6 modern financial theory.

7
8 Q. What fundamental objection do you have to the cost of
9 equity recommendation contained in Mr. Rothschild's
10 testimony?

11 A. My fundamental objection is that it is dangerous and
12 inappropriate to rely on only one variant of the DCF
13 model, as Mr. Rothschild has done. This variant is the
14 most fragile conceptually and the least valid
15 empirically. By relying solely on a single variant of
16 the DCF model, the Commission greatly limits its
17 flexibility and increases the results of authorizing
18 unreasonable rates of return. The results from one
19 method are likely to contain a high degree of
20 measurement error. The Commission's hands should not
21 be bound to one methodology of estimating equity costs,
22 nor should the Commission ignore relevant evidence and
23 back itself into a corner.

24 There are three broad generic methodologies
25 available to measure the cost of equity: DCF, Risk

1 Premium, which are market-oriented, and Comparable
2 Earnings, which is accounting-oriented. Each generic
3 market-based methodology in turn contains several
4 variants; for example, the CAPM and Empirical CAPM are
5 sub-species of the Risk Premium methodology.

6 Mr. Rothschild has chosen to rely on only one variant
7 of one method, namely the retention ratio version of
8 the DCF method, although he does perform a perfunctory
9 comparable earnings check on his DCF result.

10 I firmly believe that, when measuring equity
11 costs, which essentially deals with the measurement of
12 investor expectations, no one single methodology
13 provides a foolproof panacea. Each methodology
14 requires the exercise of considerable judgment on the
15 reasonableness of the assumptions underlying the
16 methodology and on the reasonableness of the proxies
17 used to validate the theory. The failure of the
18 traditional infinite growth DCF model to account for
19 changes in relative market valuation discussed in my
20 original testimony is a vivid example of the potential
21 shortcomings of the DCF model when applied to a given
22 company. It follows that more than one methodology
23 should be employed in arriving at a judgment on the
24 cost of equity and that these methodologies should be
25 applied across a series of comparable risk companies.

1 Each methodology possesses its own way of
2 examining investor behavior, its own premises, and its
3 own set of simplifications of reality. Each method
4 proceeds from different fundamental premises which
5 cannot be validated empirically. Investors do not
6 necessarily subscribe to any method, nor does the stock
7 price reflect the application of any one single method
8 by the price-setting investor. There is no monopoly as
9 to which method is used by investors. Absent any hard
10 evidence as to which method outdoes the other, all
11 relevant evidence should be used and weighted equally,
12 in order to minimize judgmental error, measurement
13 error, and conceptual infirmities. I submit that the
14 Commission should rely on the results of a variety of
15 methods applied to a variety of comparable groups, and
16 not, as Mr. Rothschild has done, on one variant or on
17 one subset of a particular method. There is no
18 guarantee that a single DCF result is necessarily the
19 ideal predictor of the stock price and of the cost of
20 equity reflected in that price, just as there is no
21 guarantee that a single CAPM result constitutes the
22 perfect explanation of that stock price.

23

24 Q. Why should you use more than one approach for estimating
25 the cost of equity?

1 A. Mr. Rothschild relies heavily and almost exclusively on
2 the fragile "retention growth" DCF model applied to
3 Southern Company and to a sample of non-nuclear
4 electric utilities. This is a very dangerous
5 procedure. As I stated in my original testimony, no
6 one individual method provides an exclusive foolproof
7 formula for determining a fair return, but each method
8 provides useful evidence so as to facilitate the
9 exercise of an informed judgment. Reliance on any
10 single method or preset formula is inappropriate when
11 dealing with investor expectations. Moreover, the
12 advantage of using several different approaches is that
13 the results of each one can be used to check the others.

14
15 Q. Do you have some reservations concerning the
16 applicability of the standard DCF model to utility
17 stocks at this time?

18 A. Yes. Notwithstanding my fundamental thesis that
19 several methods and/or variants of such methods should
20 be used in measuring equity costs, Mr. Rothschild has
21 selected a methodology which is particularly fragile at
22 this time. Moreover, the particular variant of that
23 methodology chosen by Mr. Rothschild is even more
24 fragile, as I will discuss later. Caution must be
25 exercised when implementing the standard DCF model in a

1 mechanistic fashion, for it may fail to recognize
2 changes in relative market valuations. The traditional
3 DCF model is not equipped to deal with surges in
4 market-to-book and price-earnings ratios. The standard
5 infinite growth DCF model assumes constancy in such
6 ratios.

7 As I stated in my original testimony, contrary to
8 the standard DCF assumption of a constant price/
9 earnings ratio, stock price may not necessarily be
10 expected to grow at the same rate as earnings and
11 dividends by investors. In other words, the constancy
12 of the price/earnings ratio required in the standard
13 DCF model may not be a perfectly accurate assumption in
14 a DCF analysis. To the extent that increases in
15 relative market valuation are anticipated by investors,
16 especially investors with short-term investment
17 horizons, the standard DCF model understates the cost
18 of equity. Of course, the converse is also true.

19 Several fundamental and structural changes are
20 transforming the utility industry from the times when
21 the standard DCF model and its assumptions were
22 developed by Professor Gordon. Increased competition
23 triggered by national policy, accounting rule changes,
24 represcription of capital recovery rates, changes in
25 customer attitudes regarding utility services, the

1 evolution of alternative energy sources, deregulation,
2 and mergers-acquisitions have all influenced stock
3 prices in ways vastly different from the early
4 assumptions of the DCF model. These changes suggest
5 that some of the raw assumptions underlying the
6 standard DCF model, particularly that of constant
7 growth, are of questionable pertinence at this point in
8 time, and that the DCF model should be at least
9 complemented by alternate methodologies to estimate the
10 cost of common equity.

11
12 Q. Please summarize your specific criticisms of
13 Mr. Rothschild's testimony.

14 A. The specific criticisms which I discuss include:

15 1. The quarterly timing of dividend payments.

16 Mr. Rothschild's application of the DCF model
17 ignores the time value of quarterly dividend
18 payments, and thus understates the expected return
19 on equity. His comments on the Quarterly DCF
20 model's lack of validity are erroneous.

21 2. The expected growth rate for utilities in the DCF
22 model. The evidence is that investors expect

23 substantially higher growth rates for electric
24 utilities than Mr. Rothschild has found. Moreover,
25 there are serious logical inconsistencies in his

1 sole technique employed to estimate growth, and he
2 conveniently omits the most relevant evidence
3 underlying investors' growth formulations. Of the
4 three available proxies for growth, Mr. Rothschild
5 has chosen the least empirically and theoretically
6 valid and has ignored the other two.

7 3. The proper allowance for flotation costs.

8 Although Mr. Rothschild allows for flotation
9 costs, his methodology produces a shortfall in the
10 amount recovered, understates the expected return
11 on equity, and a legitimate stockholder expense is
12 left partially unrecovered.

13 4. Unreasonably low risk premium. His final

14 recommendation of 11.75 percent return on equity
15 implies an unreasonably low risk premium over the
16 company's bond yield inconsistent with the
17 empirical financial literature and with his own
18 results.

19 5. Comparable Earnings analysis. Mr. Rothschild's

20 Comparable Earnings analysis is flawed for failure
21 to examine the earnings rate of industrial
22 companies with the same risk as Gulf, and the
23 expected ROE's of these companies are higher than
24 Mr. Rothschild's 11.75 percent recommendation.

25 6. Market-to-book ratio. Mr. Rothschild's views on

1 the role of market-to-book ratios in regulation
2 are flawed and assume irrational behavior on the
3 part of investors.

4 7. The Relative Risks of Customer Classes.

5 Mr. Rothschild argues that industrial customer
6 sales are more risky than residential sales,
7 because revenue variability is greater, and that,
8 therefore, a higher cost of equity capital rate
9 should be assigned to the industrial class. The
10 idea that differences in revenue variability cause
11 differences in capital costs misses the crucial
12 connection between revenue variability and
13 earnings variability and its critical role in
14 determining investor risk.

15 My comments will show that proper use of his
16 own Comparable Earnings data, recognition of
17 realistic growth rates in his DCF methodology, and
18 addition of an appropriate allowance for flotation
19 costs and quarterly timing of dividend payments
20 will produce a cost of equity recommendation which
21 is substantially higher than his recommended 11.75
22 percent. I also respond to several of
23 Mr. Rothschild's comments on my testimony, and
24 show that they are unfounded.

1 DCF MODEL

2 QUARTERLY TIMING

3

4 Q. Please discuss the quarterly timing adjustments to the
5 DCF model.

6 A. I disagree with Mr. Rothschild's dividend yield
7 calculation in his DCF analysis because he ignores the
8 quarterly nature of dividend payments.

9 The traditional DCF model which Mr. Rothschild
10 employs assumes that the dividends received by
11 investors are received annually, while in fact, most
12 utilities pay dividends on a quarterly basis.
13 Investors receive their cash flow (dividends) on a
14 quarterly basis, and not on an annual basis.

15 It is a rudimentary tenet of finance that when
16 determining investor return requirements, the cost of
17 equity is the discount rate which equates the present
18 value of future cash receipts, here a stream of
19 quarterly dividends, to the observed market price which
20 reflects the quarterly nature of dividend payments.
21 Clearly, given that dividends are paid quarterly and
22 given the observed stock price, the market required
23 return must recognize quarterly compounding, because
24 the investor receives dividend checks and reinvests the
25 proceeds on a quarterly schedule, and not annually as

1 Mr. Rothschild has assumed.

2 Since investors are aware of the quarterly timing
3 of dividend payments, this knowledge is reflected in
4 stock prices. Since the stock price already fully
5 reflects the quarterly payment of dividends, it is
6 essential that the DCF model used to estimate equity
7 costs also reflect the actual timing of quarterly
8 dividends. As I demonstrated in Exhibit ____ (RAM-1) of
9 my original testimony, the use of the annual version of
10 the DCF model understates the cost of equity by
11 approximately 30-40 basis points, depending on the
12 magnitude of the dividend yield component. By analogy,
13 a bank rate on deposits which does not take into
14 consideration the timing of the interest payments
15 understates the true yield if you receive the interest
16 payments more than once a year. The actual yield will
17 exceed the stated nominal rate.

18 It is precisely because the stock price reflects
19 the quarterly timing of dividend payments that the
20 quarterly adjustment must be made to the standard DCF
21 model, which assumes annual dividend payments. It is
22 inconsistent to use a stock price which reflects
23 quarterly dividends in a model which assumes annual
24 dividend payments. As both a practical and theoretical
25 matter, in the same way that bond yield calculations

1 are routinely adjusted for the receipts of semi-annual
2 interest payments, stock yield calculations must be
3 adjusted for the receipt of cash flows on a quarterly
4 basis, and not annually as Mr. Rothschild has done.
5

6 Q. Please comment on the validity of Mr. Rothschild's
7 objections to your quarterly DCF model.

8 A. Mr. Rothschild does not present any valid arguments for
9 rejecting the quarterly DCF model. Instead, he focuses
10 on two allegedly false contentions in my original
11 testimony. To the extent that these contentions are in
12 fact correct, I can only surmise that Mr. Rothschild
13 would otherwise endorse the quarterly DCF model.

14 My first false contention, according to
15 Mr. Rothschild, was that a stock that pays four
16 quarterly dividends of one dollar would command a
17 higher return than a stock that pays a four dollar
18 dividend a year hence. His conclusion is so obviously
19 transparent that it hardly warrants addressing. One
20 only has to think of what would happen to stock prices
21 if U.S. corporations were to announce that dividends
22 are paid only once a year from now on instead of
23 quarterly. Clearly, stock prices would fall because of
24 the lost time value of money to investors of receiving
25 money sooner. Mr. Rothschild argues that the company

1 paying the \$4 once a year instead of \$1 every quarter
2 would have the use of the funds for a longer period and
3 would thus benefit from higher earnings, experience
4 higher growth, and presumably would be more valuable.
5 The logical extension of Mr. Rothschild's argument is
6 that companies should never pay dividends so as to
7 maximize earnings and growth! This is absurd, and
8 contrary to logic and to the fundamental signaling and
9 value-enhancement aspects of dividends. The acid test
10 for the relevance of dividends is the impact on stock
11 price and shareholder value, not on earnings.

12 Second, Mr. Rothschild argues that my contention
13 that the stock price is higher for the company paying
14 quarterly dividends is flawed and that the very
15 opposite is the case. In other words, according to
16 Mr. Rothschild, a company paying a dividend of \$4 once
17 a year would command a higher price than a company
18 paying \$1 per quarter for four quarters. This is a
19 baffling statement, contrary to intuition, common
20 sense, and financial theory. This is analogous to
21 saying that investors would rather have their savings
22 account pay interest annually instead of quarterly.
23 Mr. Rothschild argues instead that the average stock
24 price of a company paying an annual dividend is higher
25 than the average stock price of a company paying the

1 same dividend in four quarterly installments because of
2 the "ex-dividend" behavior of stock prices. This
3 argument is totally without merit, for it ignores that
4 the stock price of the company paying the annual
5 dividend would start out at a lower level than the
6 stock price of the same company paying the same
7 dividend in four quarterly installments by an amount
8 equal to the lost time value of money to investors.

9 Moreover, a company's capital attraction ability
10 is diminished unless its investors are allowed the
11 quarterly DCF return. This is simply because investors
12 are able to earn a larger return from competing
13 comparable risk investments, and unless the company can
14 earn at the same market-based rate of return as its
15 investors can earn externally, the company's
16 capital-raising ability is endangered.

17
18 Q. Can you illustrate why the quarterly DCF model is
19 required?

20 A. Yes, I show below that the investor will not realize
21 the required rate of return, unless the quarterly
22 return is allowed.

23 Schedule 1 shows the numerical illustration.
24 page 1 shows the assumptions of the example. Page 2
25 of 3 shows what happens to the investor if the quarterly

1 DCF return is allowed, and page 3 shows what happens to
2 investors if the annual DCF return is allowed.

3 Page 2 shows that the utility should be allowed to
4 earn the quarterly rate of 14.04 percent on its equity
5 rate base if the company is to provide shareholders
6 with their 14.04 percent required rate of return. The
7 example shows that the shareholders would receive their
8 expected dividends of \$0.70 per quarter and that the
9 quantity of earnings over the year is \$4.19 but that
10 the allowed return must be the quarterly DCF return of
11 14.04 percent, or 1.10 percent per month. In the
12 example, the 14.04 percent market return is converted
13 to an equivalent monthly rate of return of 1.10
14 percent. The required earnings are obtained by
15 multiplying the equivalent monthly required equity
16 return by the beginning of the month equity book value
17 for the year. This produces earnings of \$4.19. The
18 investor receives dividends of \$2.80 for the year, that
19 is, a dividend yield of 9.08 percent, and a capital
20 appreciation from \$30.85 to \$32.24, that is, expected
21 4.50 percent growth rate. In other words, the
22 investor's 14.04 percent required return is fulfilled.

23 The annual DCF rate of 14.04 percent, $K_{mkt, ann}$,
24 is routinely converted to an equivalent monthly rate
25 $K_{mkt, 12}$ by the correct formula:

1
$$K_{\text{mkt}, 12} = [1 + K_{\text{mkt}, \text{ann}}]^{1/12} - 1$$

2 The monthly equivalent return of 14.04 percent is 1.10
3 percent.

4 Page 3 of my Schedule 1 shows that if the
5 traditional annual DCF model is used in setting rates
6 instead of the quarterly DCF model, the investor will
7 never realize his required return. The annual return
8 from the traditional DCF model (D/P + G) of 13.58
9 percent, or 1.07 percent on a monthly basis, produces a
10 shortfall. The total required earnings of \$4.05 are
11 insufficient to fulfill shareholders' return
12 requirement, as evidenced by the insufficient
13 appreciation in stock price from \$30.85 to \$32.10,
14 which is a gain of only 4.05 percent versus the 4.5
15 percent expected by investors.

16 Only if the quarterly DCF rate of 14.04 percent is
17 used in setting rates will the investor realize his
18 required return. Any further adjustment is unwarranted.

19
20

GROWTH

21

22 Q. Can you comment on Mr. Rothschild's growth estimates in
23 the DCF model?

24 A. There are three techniques to estimate expected growth
25 in the DCF model: (1) historical growth rates in

1 earnings per share, dividends per share, and book value
2 per share, (2) analysts' growth forecasts, and
3 (3) sustainable growth method, where the growth rate is
4 based on the equation $g = b(\text{ROE})$, where b is the
5 percentage of earnings retained and ROE is the expected
6 earned rate of return on book equity. In his DCF
7 analysis of The Southern Company and Moody's 24
8 Electrics, Mr. Rothschild estimates the growth
9 component using only the last method. He rejects the
10 customary alternatives of relying on analysts' growth
11 forecasts and on historical growth rate in earnings,
12 dividends, and book value.

13 By relying solely on a single growth-estimating
14 technique in the DCF model as Mr. Rothschild has done,
15 the Commission would set a very dangerous precedent for
16 future ratemaking procedures. A single technique to
17 estimate investor growth expectations is likely to
18 contain a high degree of measurement error and may be
19 distorted by short-term aberrations. The Commission's
20 hands should not be bound to one single estimate of
21 growth in the DCF determination of equity costs. The
22 advantage of using several different approaches in
23 estimating growth is that the results of each one can
24 be used to check the others.

25

1 SUSTAINABLE GROWTH RATE

2

3 Q. Do you have any objections to the sustainable growth
4 estimates used by Mr. Rothschild?

5 A. Since Mr. Rothschild's entire testimony and his 11.75
6 percent cost of equity recommendation hinge on the
7 sustainable growth cornerstone, it is important to
8 point out the dangers and flaws of this cornerstone
9 method. To apply the retention ratio growth in his DCF
10 analysis, Mr. Rothschild multiplies the utility's
11 retention ratio by the return on equity. The latter is
12 proxied by the actual 1988 and 1989 earned ROE and by
13 Value Line's forecast of ROE. To compute the former,
14 in a strange turnabout, rather than simply take the
15 actual retention ratio and the retention ratio forecast
16 by Value Line as he did for the ROE, Mr. Rothschild
17 computes the retention ratio indirectly, as one minus
18 the book dividend yield divided by the ROE, that is,
19 $(1 - D/rB)$. In other words, the two components of
20 growth, ROE and retention ratio, are determined
21 simultaneously and are functionally interdependent.
22 Thus, any error in one component is inherently
23 compounded when applied to the other component.

24 Mr. Rothschild correctly recognizes and adds to
25 his sustainable growth estimate any growth stemming

1 from external financing. The growth results are shown
2 on line 5 in his Schedules 2 and 3 for The Southern
3 Company and Moody's Non-Nuclear electrics, respectively.
4 The average growth rate range for The Southern Company
5 is 2.77 percent - 3.77 percent and 3.68 percent - 3.84
6 percent for the non-nuclear electrics.

7 There are two fundamental problems with
8 Mr. Rothschild's sustainable growth methodology:

9 (1) Mr. Rothschild's sustainable growth method
10 contains a fatal logical flaw: the method requires an
11 estimate of ROE to be implemented. In other words, his
12 method requires him to assume the ROE answer to start
13 with. But if the ROE input required by the model
14 differs from the recommended return on equity, a
15 fundamental contradiction in logic follows.

16 Mr. Rothschild's recommended 11.75 percent return on
17 equity is far removed from the ROE's he uses in the
18 sustainable growth method, both historically and
19 prospectively. On his Schedules 2 and 3, he uses an
20 expected return of 13.00 percent for The Southern
21 Company, and 13.9 percent for the non-nuclear
22 electrics, which are all above Mr. Rothschild's
23 recommended 11.75 percent range. The vast majority of
24 the historical and Value Line prospective ROE's for
25 each company reported on Schedules 2 and 3 and used in

1 Mr. Rothschild's sustainable growth computation exceeds
2 his recommended 11.75 percent and average 13.5 percent.

3 He is assuming, in effect, that the companies will
4 earn at a return rate exceeding his recommended equity
5 range forever, but he is recommending that a different
6 rate be granted by the Commission. While this scenario
7 may be imaginable for an unregulated company with
8 substantial market power, it is implausible for a
9 regulated company whose rates are set so that they will
10 earn a return equal to their cost of capital. I consider
11 this logical flaw extremely damaging and sufficient to
12 reject Mr. Rothschild's results produced by the method,
13 and hence the crux of his testimony. In essence,
14 Mr. Rothschild is using an ROE that differs from his
15 final recommended cost of equity, and is requesting the
16 Commission to adopt two different returns.

17 To quote from Mr. Rothschild's page 39, lines
18 15-18:

19 At this time, the majority of investors should be
20 expecting that a typical group of non-nuclear
21 electric utility should be able to sustain any
22 average earned return on equity of no more than
23 13.9 percent on equity in the future.

24 The only logical conclusion to be drawn from that
25 statement is that Gulf Power's cost of equity is 13.9
percent, since rates must be set to earn 13.9 percent.

I am extremely perplexed as to why Mr. Rothschild

1 assumes that non-nuclear electric utilities are expected to earn
2 13.9 percent forever, but yet he recommends 11.75
3 percent. The only way that electric utilities can earn
4 13.9 percent is that rates be set so that they will in
5 fact earn 13.9 percent. So, how can the cost of equity
6 be any different from 13.9 percent?

7 (2) The empirical finance literature demonstrates
8 that the sustainable growth method is a poor
9 explanatory variable of value, and is not significantly
10 correlated to measures of value, such as stock price
11 and price/earnings ratios. Mr. Rothschild's chronic
12 rejection of the use of both historical growth rates in
13 several parts of his testimony (page 15, lines 20-23;
14 page 16, lines 9-11; page 21, lines 16-23; page 66,
15 lines 15-16) and analysts' growth forecasts (page 22,
16 lines 1-9) in the DCF model is in flagrant
17 contradiction to the scholarly research and academic
18 literature on the subject.

19
20 HISTORICAL GROWTH

21
22 **Q. Can you comment on Mr. Rothschild's historic growth**
23 **rates?**

24 **A. On page 22, lines 5-9 of his testimony, Mr. Rothschild**
25 **dismisses the use of historical growth rates in**

1 dividends, earnings, and book value as proxies for
2 investor expectations on the general grounds that they
3 are not sustainable. This is a gratuitous statement,
4 not substantiated by Mr. Rothschild; he has not
5 performed or alluded to any empirical studies that
6 support such a claim. Surely, investor growth
7 expectations are influenced to some extent by
8 historical growth rates in formulating their future
9 growth expectations. It is not perfectly clear as to
10 why Mr. Rothschild ignored this relevant data.
11 Ironically, his own estimates of expected ROE when he
12 implements the sustainable growth method are partially
13 driven by historical ROE's.

14 On page 22 and elsewhere, he cautions the use of
15 historical growth rates on the grounds that earned
16 ROE's and dividend payout ratios were not constant and
17 that dividend growth rates cannot exceed earnings
18 growth rates forever. I share similar concerns,
19 especially when dealing with the data of a single
20 company. Yet, Mr. Rothschild himself forecasts an
21 earned ROE different (Schedule 2, page 1) from the
22 sample companies' and The Southern Company's current
23 ROE (page 42, lines 3 - 9). His use of the b x ROE
24 procedure to implement a single growth rate DCF model
25 is internally inconsistent. Whenever the ROE or the

1 retention ratio is expected to change as he has
2 inherently assumed, the intermediate-term growth rate
3 in dividends would not, in general, equal the long-term
4 growth rate. Intuitively, this follows from the fact
5 that dividend/earnings growth must adjust to the
6 changing ROE. Given Mr. Rothschild's assumptions
7 regarding changing ROE's and thus changing growth
8 rates, the inevitable conclusion is that a more
9 complete two-growth rate DCF model is required, and
10 that a single growth rate DCF model is deficient.

11 It is ironic that Mr. Rothschild criticizes my
12 historical growth DCF model for changing ROE's and
13 payout ratio, and that his own forward-looking
14 sustainable growth DCF model designed to circumvent
15 these problems is itself misspecified for the same
16 reasons.

17

18 Q. Do investors rely on historical data?

19 A. On page 15 of his testimony, Mr. Rothschild makes the
20 astounding statement that "sophisticated investors do
21 not compute historic five or ten year growth rates and
22 use that result to determine what growth rates are
23 probable..." (page 15, lines 21-23). This statement is
24 startling, counterintuitive and erroneous.

25 Historical indicators are widely used by analysts,

1 investors, and expert witnesses. Cohen, Zinbarg, and
2 Zeikel (Investment Analysis and Portfolio Management,
3 5th edition, Irwin, 1987, Part 4 Security Analysis,
4 pp. 537-538) which is a recommended textbook for CFA
5 (Chartered Financial Analyst) certification and
6 examination, suggest the calculation of historical
7 growth rates as a first step in security analysis.
8 Techniques of historical growth analysis for individual
9 companies are described in Chapter 12. Professional
10 certified financial analysts are certainly well versed
11 in the use of historical growth indicators.

12 A simple inventory of cost of capital testimonies
13 over a reasonable time period in a given jurisdiction
14 will reveal that DCF is widely used by academic and
15 staff witnesses and that historical indicators are in
16 wide usage in such testimonies. Such a survey appeared
17 in Appendix C "Summary of Rate of Return Methods in
18 Testimony and Decisions" in Methods Used to Estimate
19 the Cost of Equity Capital in Public Utility Rates
20 Cases: A Guide to Theory and Practice, Charles River
21 Associates Inc., CRA Report No. 607, prepared for the
22 California Public Utilities Commission. The use of
23 historical indicators was clearly indicated in this
24 survey.

25 Historical indicators are used extensively in

1 scholarly research. There exists a vast literature in
2 empirical finance designed to evaluate the use of
3 historical information as surrogates for expected
4 quantities. This literature is compiled in summary
5 form in Annotated Bibliography of Earnings Expectations
6 Research, Lynch, Jones & Ryan, 1988.

7
8 ANALYSTS' GROWTH FORECASTS

9
10 Q. Can you comment on Mr. Rothschild's growth forecasts?

11 A. Yes. Mr. Rothschild's laborious and convoluted
12 procedure for computing sustainable (b x ROE) growth
13 rates requires several subjective input forecasts:
14 expected ROE, market-to-book ratio, dividend yield on
15 book, and new financing growth. It would appear far
16 more economical and expeditious to use available growth
17 forecasts directly instead of relying on four
18 individual forecasts of the determinants of such
19 growth. It only seems logical that the measurement and
20 forecasting errors inherent in using four different
21 variables to predict growth far exceed the forecasting
22 error inherent in a direct forecast of growth itself.

23 It is also ironic that Mr. Rothschild employs
24 analysts' growth forecasts from Zacks, which he earlier
25 dismissed as inadequate, in order to derive his expected

1 ROE estimate in the sustainable growth method, which
2 itself provides a measure of expected growth. This
3 procedure is hopelessly circular; he uses "inadequate"
4 analysts' growth forecasts to obtain expected ROE to in-
5 turn obtain growth. Why not simply use the growth
6 forecast?

7 Mr. Rothschild conveniently rejects Value Line's
8 growth forecast in earnings/dividends, yet finds that
9 Value Line's growth forecast of ROE is adequate. His
10 reasoning is that Value Line's growth forecasts are not
11 the average constant growth rates which are required in
12 the simple DCF model. This is curious reasoning, for
13 the same argument applies to Value Line's ROE forecast;
14 the latter is a forecast for the specific period
15 1992-1994, and not necessarily the forecast required in
16 the DCF model.

17 Sustainable growth rates are poor surrogates for
18 the consensus growth expectations of investors. The
19 empirical finance literature demonstrates that the
20 sustainable growth method of determining growth is a
21 poor explanatory variable of market value, and is not
22 significantly correlated to measures of value, such as
23 stock price and price/earnings ratios. Averages of
24 analysts' growth forecasts are more reliable estimates
25 of the investors' consensus expectations. Studies in

1 the academic literature also demonstrate that the
2 consensus growth forecast made by security analysts is
3 a reasonable indicator of investor expectations, and
4 that investors rely on such analysts' forecasts. The
5 consensus long-term growth forecast of analysts
6 provides a good proxy for investors' growth
7 expectations when applying the DCF model.

8 Mr. Rothschild has chosen not to rely on analyst growth
9 forecasts in spite of the superiority of such forecasts
10 in representing investor growth expectations.

11 Both empirical research and common sense indicate
12 that investors rely heavily on analysts' growth rate
13 forecasts. It stands to reason that analysts produce
14 better forecasts than could be obtained using only
15 historical data, because analysts have available not
16 only past data but also a knowledge of such crucial
17 factors as current economic trends, rate case
18 decisions, construction programs, new products, cost
19 data, impending tax law changes, and so on. The
20 variations in historical ROE's and payout ratios which
21 concerned Mr. Rothschild and caused him to question the
22 relevance of historical growth rates in the DCF model
23 are known to investors, and are reflected in their
24 growth forecasts.

25 Although historical information provides a primary

1 foundation of expectations, investors use additional
2 information to supplement past growth rates in arriving
3 at their forecasts. Not only do analysts extrapolate
4 past history, but they also consider historical trends
5 and anticipated economic events before arriving at a
6 growth forecast.

7 In view of the above, my Schedule 2 shows Value
8 Line's historical and projected growth rates for
9 dividends and earnings for the electric utility
10 companies used by Mr. Rothschild in his DCF analysis.
11 The last column shows the consensus mean long-term
12 growth forecast obtained from IBES. For the
13 non-nuclear electrics used in Mr. Rothschild's
14 analysis, the average growth rates range from 3.5
15 percent to 5.5 percent with an average close to 4.5
16 percent. These growth substantially exceed Mr.
17 Rothschild's average sustainable growth estimates for
18 non-nuclear electrics by approximately 75 basis points.

19

20 Q. Can you summarize your comments on Mr. Rothschild's DCF
21 growth rates?

22 A. In summary, Mr. Rothschild has disregarded both
23 historical growth rates and analysts' growth forecasts,
24 two of the most widely used and empirically validated
25 sources of growth rates. He has ignored the empirical

1 findings of the finance literature, pointing to the
2 superiority of such forecasts. His sustainable growth
3 rate methodology contains serious theoretical,
4 conceptual, empirical, and methodological flaws, and
5 should be disregarded by the Commission.

6 My own recommendation to the Commission with
7 regards to DCF growth rates is that equal weight should
8 be accorded to DCF results based on history and those
9 based on analysts' forecasts, and that very little
10 weight should be accorded to sustainable growth
11 results, in view of the empirical evidence and the
12 conceptual justification discussed above. Each proxy
13 for expected growth brings information to the judgment
14 process from a different light. Neither proxy is
15 without blemish, each has advantages and shortcomings.
16 Historical growth rates are available and easily
17 verifiable but may no longer be applicable if
18 structural shifts have occurred. Analysts' growth
19 forecasts may be more relevant since they encompass
20 both history and current changes, but are nevertheless
21 imperfect proxies.

22
23 FLOTATION COST

24
25 Q. Please comment on Mr. Rothschild's flotation cost

1 adjustment.

2 A. Both Mr. Rothschild and I agree on the need to adjust
3 the cost of equity for flotation cost. But we disagree
4 on the size of the allowance and on the mode of
5 application of the adjustment. With respect to size,
6 he uses 3.5 percent compared to my 5 percent. I have
7 already enumerated and described the results of several
8 empirical studies on the magnitude of flotation cost
9 for utility stock offerings in my original testimony.
10 These studies indicate clearly that 5 percent is a
11 reasonable and conservative number. With respect to
12 implementation, Mr. Rothschild argues that it is only
13 necessary to apply the adjustment to the external
14 common equity component, and not to the retained
15 earnings portion. He, therefore, computes a weighted
16 average flotation cost, with a 3.5 percent cost applied
17 to external equity and a 0 percent cost applied to
18 retained earnings, with the weights based on historical
19 proportions of equity raised externally and internally.

20 I have two disagreements with this procedure.
21 First, the flotation cost allowance must be applied to
22 total equity capital and not to the external equity
23 component. The numerical examples in Appendix B of my
24 original testimony showed that not only is the
25 flotation adjustment always required each and every

1 year, whether or not new stock issues are sold in the
2 future, but that the allowed return on equity must be
3 earned on total equity, including retained earnings,
4 for investors to earn the cost of equity.

5 Mr. Rothschild's legitimate concern of not
6 applying a flotation cost allowance to retained
7 earnings is already implicitly embedded and recognized
8 in his formula adjustment. The flotation cost
9 adjustment formula used in my testimony and by
10 Mr. Rothschild deals with the fact that flotation costs
11 are incurred only when new stock is sold, and not when
12 earnings are retained. This is because the flotation
13 adjustment is only applied to the dividend yield of the
14 DCF formula, and not the growth component. Any growth
15 through the reinvestment of earnings, that is, the
16 larger the fraction of earnings retained, the higher
17 the growth rate, the lower the dividend yield
18 component, and the smaller the flotation cost adjust-
19 ment. Therefore, Mr. Rothschild's blended flotation
20 cost allowance double counts the internal financing
21 component at a zero weight, in effect, understanding
22 the cost of equity by about 10 basis points.

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MARKET-TO-BOOK RATIOS

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Q. Please comment on Mr. Rothschild's views regarding market-to-book ratios.

A. Mr. Rothschild argues that since current market-to-book (M/B) ratios for electric utilities are in excess of 1.00, "this is a clear sign that the company is expected by investors to be able to earn more than its cost of equity" (page 13, line 1 - 2), and that the regulating authority should lower the authorized return on equity so that "the stock price will decline to the proper level" (page 13, line 7 - 8). Mr. Rothschild would, therefore, find it plausible that stock prices drop from the current 1.20 times book to the desired M/B ratio range of 1.00 to 1.05 times book.

There are several reasons why M/B ratios are largely irrelevant and why I disagree with Mr. Rothschild's own view of the role of M/B in regulation.

1) Mr. Rothschild's inference that M/B ratios are relevant and that regulators should set an ROE so as to produce an M/B of 1.0 is erroneous. The stock price is set by the market, not by regulators. The M/B ratio is the result of regulation, not its starting point. The regime of regulation envisioned by Mr. Rothschild, that

1 is, that the Commission will set an allowed rate of
2 return so as to produce an M/B of close to 1.0,
3 presumes that investors are congenital masochists; they
4 commit capital to a utility with an M/B in excess of
5 1.0, knowing full well that they will be inflicted a
6 capital loss by regulators. This is not a realistic or
7 accurate view of regulation.

8 2) The condition that the M/B will gravitate
9 toward 1.00 if regulators set the allowed return equal
10 to capital costs will be met only if the actual return
11 expected to be earned by investors is at least equal to
12 the cost of capital on a consistent long-term basis.
13 The cost of capital of a company refers to the expected
14 long-run earnings level of other firms with similar
15 risk. If investors expect a utility to earn an ROE
16 equal to its cost of equity in each period, then its
17 M/B ratio would be approximately 1.00, or about 1.05
18 with the proper allowance for flotation cost.

19 But a company's achieved earnings in any given
20 year are likely to exceed or be less than their
21 long-run average. Depressed or inflated M/B ratios are
22 to a considerable degree a function of forces outside
23 the control of regulators, such as the general state of
24 the economy, or general economic or financial
25 circumstances which may affect the yields on securities

1 of unregulated as well as regulated enterprises. I
2 regard the achievement of a 1.05 M/B ratio as
3 appropriate, but only in a long-run sense. For
4 utilities to exhibit a long-run M/B ratio of 1.05, it
5 is clear that during economic upturns and more
6 favorable capital market conditions, the M/B ratio must
7 exceed its long-run average of 1.05 to compensate for
8 the periods during which the M/B ratio is less than its
9 long-run average under less favorable economic and
10 capital market conditions.

11 Historically, the M/B ratio for utilities has
12 fluctuated above and below 1.05. This indicates that
13 earnings below capital costs and M/B ratios below 1.05
14 during less favorable economic and capital market
15 conditions must necessarily be accompanied by earnings
16 in excess of capital costs and M/B ratios above 1.05
17 during more favorable economic and capital market
18 conditions.

19 It should also be pointed out that M/B ratios are
20 determined by the marketplace, and utilities cannot be
21 expected to attract capital in an environment where
22 industrials are commanding M/B ratios well in excess of
23 1.00. Moreover, if regulators were to currently set
24 rates so as to produce an M/B ratio of 1.05, not only
25 would the long-run target M/B ratio of 1.05 be

1 violated, but more importantly, the inevitable
2 consequence would be to inflict severe capital losses
3 on shareholders. Investors have not committed capital
4 to utilities with the expectation of incurring capital
5 losses from a misguided regulatory process.

6 The fundamental goal of regulation should be to
7 set the expected economic profit for a public utility
8 equal to the level of profits expected to be earned by
9 firms of comparable risk; in short, to emulate the
10 competitive result. For unregulated firms, the natural
11 forces of competition will ensure that in the long-run
12 the ratio of the market value of these firm's
13 securities equals the replacement cost of their
14 assets. This suggests that a fair and reasonable price
15 for a public utility's common stock is one that
16 produces equality between the market price of its
17 common equity and the replacement cost of its physical
18 assets. The latter circumstance will not necessarily
19 occur when the M/B ratio is 1.0; only when the book
20 value of the firm's common equity equals the value of
21 the firm's equity at replacement assets will equality
22 hold.

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COMPARABLE EARNINGS

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Q. Please discuss Mr. Rothschild's comparable earnings test.

A. In his implementation of the comparable earnings test, Mr. Rothschild looks to the realized returns on book equity (ROE) achieved by a broad group of industrials, namely the DOW Jones Industrial Index, made up of 30 companies, as a proper guide for setting Gulf Power's cost of common equity. Mr. Rothschild's Comparable Earnings analysis is flawed on three counts: (1) lack of proper risk differentiation, (2) logical inconsistency, and (3) investors are expecting substantially higher ROE's than Mr. Rothschild finds. I will now treat each of the three points in turn.

(1) Mr. Rothschild fails to examine the earnings rate of industrials with the same risk as Gulf Power. He simply looks at the overall achieved returns on book equity for a broad and diverse group of companies without further differentiation. The major problem with this approach is that investors do not disregard the relative riskiness of stocks within this broad group.

The inclusion of a broad market composite is inconsistent with the seminal Hope-Bluefield doctrine

1 of risk comparability. The sample of industrials
2 should be carefully censored statistically for risk
3 comparability. The rate of return standard, as
4 expounded in Hope and Bluefield, is to allow an equity
5 return commensurate with returns on investments in
6 other enterprises having corresponding risks. There is
7 no reason to believe that the 30 industrial companies
8 provided in Mr. Rothschild's sample are comparable in
9 all important respects relating to risk.

10 (2) Mr. Rothschild goes on to say that the firms
11 in the DOW Jones Industrial Index are riskier than Gulf
12 Power, as evidenced by their much higher average beta,
13 implying that his comparable earnings ROE drawn from
14 that index of companies is conservative. By relating
15 Gulf Power's book rate of return to that of firms of
16 comparable risk, Mr. Rothschild is assuming that there
17 is a fundamental theoretical relationship which exists
18 in financial theory between accounting return and risk
19 as a basis for making such an adjustment. There is no
20 theoretical or conceptual relationship in finance which
21 exists between accounting rates of return (ROE) and
22 risk.

23 (3) Finally, there is a fundamental disagreement
24 between Mr. Rothschild's estimate of actual earned
25 ROE's by these companies and the expected ROE reported

1 in Value Line, which Mr. Rothschild uses extensively in
2 his DCF analysis. Surely, the expected ROE data is
3 more relevant to the determination of cost of capital
4 than realized ROE data. My Schedule 3 reports Value
5 Line's estimate of expected ROE for the 30 companies in
6 the DOW Jones Index used by Mr. Rothschild. The
7 average expected ROE for the 30 companies judged to be
8 comparable to Gulf Power by Mr. Rothschild is 15.89
9 percent. Thus, the evidence is that investors expect
10 substantially higher ROE's than Mr. Rothschild has
11 found for these companies.

12 I have also shown on that same exhibit a rough DCF
13 calculation for the 30 industrials. Adding the spot
14 dividend yield of 3.3 percent to the expected growth in
15 dividends or earnings which lies in the 11 percent to
16 14 percent range produces DCF equity costs in the 14
17 percent to 17 percent range. It is not clear as to why
18 Mr. Rothschild chose not to report any DCF results at
19 all for those industrials which he considers comparable
20 to Gulf Power.

21 He correctly argues that these companies are
22 riskier than Gulf Power, as evidenced by their average
23 beta of approximately 1.00 compared to Gulf Power's
24 0.70. But since his comparable earnings analysis of
25 the DOW Jones Industrial Index companies indicates

1 earned ROE's in the 11 percent - 12 percent range, and
2 since these companies are substantially riskier than
3 Gulf Power, it logically follows from Mr. Rothschild's
4 analysis that Gulf Power's own return should be
5 considerably below the 11 percent - 12 percent range,
6 and even below the company's own yield. This is
7 clearly an absurd result, and demonstrates the
8 inadequacy of his so-called comparable earnings check.

9 Mr. Rothschild also alleges that he has checked
10 his equity cost recommendation for reasonableness by
11 reviewing the relationship between M/B ratios and the
12 earned return on equity (page 10, lines 14-17). I was
13 unable to locate such a formal empirical check or study
14 in his testimony. The only reference to M/B ratios in
15 his testimony is that the DOW Jones Industrials Index
16 companies have M/B ratios well above 1.00. No further
17 analysis or formal connection between these results and
18 his recommended 11.75 percent cost of equity are
19 offered.

20
21 RISK PREMIUM

22
23 **Q. Please discuss Mr. Rothschild's criticism of your risk**
24 **premium analysis.**

25 **A. Although Mr. Rothschild did not perform a specific risk**

1 premium study to estimate a specific cost of capital
2 estimate, he briefly discusses the limitations of my
3 risk premium approach on page 78, lines 13 - 20 of his
4 testimony. Mr. Rothschild argues that 1) my risk
5 premium study is unreliable to the extent that it is
6 based on DCF, which Mr. Rothschild claims is
7 unreliable, 2) the risk premium is unstable, and 3)
8 changes in tax laws have altered the debt-equity risk
9 premium relationship.

10 With regard to the first argument, I have already
11 shown that Mr. Rothschild's critique of my DCF analysis
12 is without foundation. My equity return estimates in
13 my risk premium study are based on the DCF model, which
14 Mr. Rothschild himself labels as the most accurate
15 method. While I certainly do not disagree that return
16 estimates are subject to error, the DCF estimates on
17 which my risk premium study is based contain far less
18 measurement error than Mr. Rothschild's own DCF
19 estimates, I have already shown that Mr. Rothschild's
20 critique of my DCF analysis is without foundation, and
21 have also discussed the serious limitations and
22 omissions of his own DCF estimates. My risk premium
23 study is a month-by-month study of the cost of equity
24 over the cost of debt. In contrast to the traditional
25 DCF, which is a point-in-time cross-sectional estimate,

1 the risk premium approach takes a time-series view.
2 Surely, the recent past relationship between equity
3 costs and debt costs is relevant as a cross-check of
4 the DCF estimate. If the DCF method which both
5 Mr. Rothschild and I use at a specific point in time is
6 a pertinent exercise, it is all the more so at several
7 points in time.

8 Mr. Rothschild's second criticism is that the risk
9 premium is unstable in time. I agree that the risk
10 premium is not constant in time. But surely this
11 criticism can be directed at any cost of equity
12 measurement technique, and is not endemic to the risk
13 premium methodology. Mr. Rothschild's DCF analysis is
14 marred by similar instabilities; for example, dividend
15 yields, ROE's, payout ratios, and DCF growth rates are
16 certainly not constant in time. This is not a
17 sufficient reason for rejection. I have indeed allowed
18 for the instability of the risk premium over the
19 business and interest rate cycle by statistically
20 relating the risk premium to interest rates in my risk
21 premium studies.

22 Mr. Rothschild's third comment revolved around the
23 effect of tax law changes on the risk premium.
24 Although investors maximize their after-tax returns on
25 a risk-adjusted basis, I have not adjusted the returns

1 for taxes for two reasons. First, it is important that
2 the cost of equity to Gulf Power not be confused with
3 the return to the equity investor. Only from a return
4 view is taxability a consideration. From a utility
5 cost of capital viewpoint, the investor's tax bracket
6 makes no difference in the cost of capital. The cost
7 of equity is viewed correctly from the market place.
8 Second, if a regulatory commission were to seek to
9 enable the utility to compensate investors for their
10 after-tax returns, we could have as many returns as
11 there are tax bracket variations, and they would defy
12 analysis. Several institutional investors such as
13 pension funds are tax-exempt, others are fully
14 taxable. Even if tax adjustments were warranted, it is
15 impractical to determine the constellation of tax
16 brackets for all the company's shareholders, and to
17 determine the identity and tax bracket of the marginal
18 price-setting investor.

19 One also has to be careful not to double-count any
20 tax effects. Security prices already reflect the
21 security's tax treatment. The returns implied in those
22 prices already allow for the taxation burden. This is
23 why, for example, tax-exempt municipal bonds are traded
24 on the basis of much lower returns compared to
25 risk-equivalent corporate bonds. Another example is

1 the lower return offered by preferred stock compared to
2 that of a corporate bond issued by the same company,
3 because of the more generous tax treatment of preferred
4 dividend income. Any further tax adjustment procedure
5 would result in double counting.

6
7 Q. What are your comments on Mr. Rothschild's Implied Risk
8 Premium?

9 A. Mr. Rothschild's final recommendation as to the cost of
10 common equity is 11.75 percent. I find this estimate
11 implausible, since it is barely above the current yield
12 on Gulf Power bonds, which is of the order of 10.25
13 percent currently. The risk premium between common
14 stocks and bonds implied in Mr. Rothschild's
15 recommendation is about 1.5 percent. The empirical risk
16 premium literature indicates much higher risk premiums.
17 His own risk premium results shown on Schedule 11
18 indicate risk premiums of 3.25 percent over Treasury
19 bonds, which would in turn imply equity costs above 12
20 percent for Gulf Power using current Treasury yields.
21 It is not clear why Mr. Rothschild has chosen to omit
22 these results from his analysis.

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24
25

1 CONCLUSION

2
3 Q. What do you conclude from Mr. Rothschild's DCF
4 analysis?

5 A. My general conclusions are: 1) his DCF analysis hinges
6 solely on the "sustainable growth" method, only one of
7 several methods traditionally used in regulatory
8 proceedings, and certainly the most fragile method, 2)
9 his application of the method is questionable and
10 contains a serious logical trap, 3) he has ignored
11 historical dividend/earnings growth rates and analysts'
12 growth forecasts for dubious reasons, and 4) I have
13 already alluded to the absence of a reasonable
14 stock-bond risk premium in his recommendation. It is
15 difficult not to conclude that Mr. Rothschild's cost of
16 capital testimony from which Risk Premium Tests,
17 historical Dividend/Earnings Growth DCF, and analysts'
18 growth forecasts DCF are absent is grossly incomplete.
19 It is also difficult to accept Mr. Rothschild's claim
20 that investors are expecting 11.75 percent when: 1)
21 his own data indicates that investors are expecting
22 more, 2) the company's bonds are yielding about 10.25
23 percent, implying a grossly deficient risk premium, and
24 3) Mr. Rothschild's recommended 11.75 percent is more
25 than one standard deviation away from the average

1 authorized equity return in 1989 for utilities.

2 My specific conclusions are that Mr. Rothschild
3 has committed several serious conceptual and
4 methodological errors in his DCF analysis:

5 (1) insufficient flotation cost adjustment, about 10
6 basis points error, (2) omission of quarterly timing of
7 dividend payments, 30 to 40 basis points error, and
8 (3) exclusive reliance on sustainable growth rates,
9 and failure to consider historical dividends/earnings
10 growth rates and the analysts' consensus growth
11 forecasts, at least 75 basis points. Any reasonable,
12 conservative quantification of these errors and
13 omissions easily increases his cost of equity estimate
14 by a minimum of 115 to 125 basis points, from the DCF
15 method alone, as shown below:

16	ITEM	SIZE OF ERROR (basis points)
17	INSUFFICIENT FLOTATION ADJUSTMENT	10
18	OMISSION OF QUARTERLY TIMING	30 - 40
19	DOWNWARD-BIASED GROWTH RATES	<u>minimum 75</u>
20	TOTAL	minimum 115 - 125

21 In a nutshell, Mr. Rothschild's 11.75 percent cost
22 of equity recommendation is well below a credible
23 level, and there are serious problems with his methods
24 and his concepts.

25

1 INDUSTRIAL CLASS RISK

2

3 Q. Do you agree with Mr. Rothschild's cost of capital and
4 risk adjustment for industrial class versus residential
5 class customers?

6 A. No. I do not. Starting on page 52, line 6 of his
7 testimony, Mr. Rothschild argues that his cost of
8 equity capital of 11.75 percent is not equally
9 applicable to each customer class served by Gulf
10 Power. He argues that serving industrial customers
11 entails a higher degree of risk than serving
12 residential or commercial customers.

13 Mr. Rothschild argues and shows empirically
14 (pages 54-58) that the industrial class is more risky
15 to serve than the other classes because of the higher
16 volatility of sales of the industrial class. If indeed
17 industrial sales volatility translates into net
18 income volatility, then the industrial class is indeed
19 riskier than the other classes and should be assigned a
20 higher return component.

21 The flaw in Mr. Rothschild's approach is that he
22 has not demonstrated that differences in sales
23 variability translate into differences in earnings
24 variability. He has ignored the critical link between
25 revenue variability and earnings variability, and the

1 crucial role of the latter in determining risk. It is
2 earnings variability rather than sales volatility which
3 is the determinant of risk and investor required
4 returns. Two classes of customers can have the same
5 sales variability yet vastly different earning
6 variability because of the variability in cost
7 structure, and more specifically the ratio of fixed to
8 variable costs. Mr. Rothschild has not addressed the
9 relative cost structure of the various customer
10 classes. It stands to reason that two customer classes
11 with the same sales variability can have vastly
12 different earnings variability if their cost structures
13 are different. It is therefore inappropriate to
14 connect capital costs to sales variability directly, as
15 Mr. Rothschild has done. It is crucial to examine the
16 relative underlying cost structures.

17
18 II. COMMENTS ON MR. SEERY'S TESTIMONY

19
20 Q. Please summarize Mr. Seery's rate of return
21 recommendation.

22 A. In determining the cost of equity applicable to Gulf
23 Power's Florida operations, Mr. Seery (1) applies DCF
24 analysis to a group of high-quality electric utilities,
25 and (2) applies a DCF-based risk premium analysis for

1 the same group of electric utilities over a 10-year
2 period. He derives an equity cost range of 11.00
3 percent to 11.50 percent based on the results of these
4 analyses. He then adds 60 basis points to the top of
5 the latter range in recognition of Gulf Power's higher
6 risk relative to the high-quality group and recommends
7 a cost of equity of 12.1 percent for Gulf Power.

8
9 Q. Please summarize your criticisms of Mr. Seery's
10 testimony.

11 A. Mr. Seery's recommended return of 12.1 percent
12 understates Gulf Power's cost of equity capital because:

13 1. The quarterly timing of dividend payments.

14 Mr. Seery does not use the correct quarterly
15 version of the DCF model. I have demonstrated
16 that the market-based DCF return prescribed by the
17 quarterly DCF model is the only measure of allowed
18 return which will allow investors to earn their
19 required return and which is consistent with the
20 capital attraction dictates of Bluefield and Hope.

21 2. The expected growth rate for utilities in the DCF

22 model. The evidence is that investors expect
23 higher growth rates for electric utilities than
24 Mr. Seery has found. Moreover, there is a logical
25 inconsistency in his implementation of the

1 two-growth rate DCF model, related to his use of
2 the sustainable growth rate method to calculate
3 long-term growth.

4 3. The proper allowance for flotation costs.

5 Although Mr. Seery allows for flotation costs, his
6 methodology produces a slight shortfall in the
7 amount recovered, understating the expected return
8 on equity, and a legitimate stockholder expense is
9 left partially unrecovered.

10 My comments will show that recognition of
11 realistic growth rates in his DCF methodology and
12 addition of an appropriate allowance for flotation
13 costs and for the quarterly nature of dividend payments
14 will produce a cost of equity recommendation which is
15 higher than his recommended 12.1 percent and close to
16 my own recommended return.

17

18

QUARTERLY DCF MODEL

19

20 Q. Please comment on Mr. Seery's annual DCF model results.

21 A. In sharp contrast to past Commission Staff practices in
22 recent years, Mr. Seery used the annual version of the
23 DCF model rather than the correct quarterly version.
24 The DCF model used by Mr. Seery assumes that dividend
25 payments are made annually at the end of the year,

1 while most utilities in fact pay dividends on a
2 quarterly basis. This understates the cost of equity
3 capital by about 40 basis points. Mr. Seery did not
4 perform the iterative solution techniques required by
5 the Quarterly DCF model, but relied instead on the
6 annual form of the DCF model.

7 Since the stock price fully reflects the quarterly
8 payment of dividends, it is essential that the DCF
9 model used to estimate equity costs also reflect the
10 actual timing of quarterly dividends, in the same way
11 that bond yield calculations are routinely adjusted to
12 reflect semiannual interest payments.

13 The traditional annual DCF model used by Mr. Seery
14 is based on the limiting assumptions that dividends are
15 paid annually, and that dividends increase once a year
16 starting exactly one year from the present. These
17 assumptions are unnecessarily restrictive. The
18 quarterly DCF model refines the annual model so as to
19 capture the exact timing of cash flows received by the
20 investor.

21 Mr. Seery justifies his omission of the quarterly
22 nature of dividend payments on the grounds that one
23 should not recognize the time value to investors of
24 receiving dividends quarterly rather than annually
25 because one does not recognize the time value to the

1 company of receiving revenues on a monthly basis. Two
2 wrongs make a right, according to Mr. Seery's
3 symmetrical treatment argument.

4 In other words, the utility itself enjoys the
5 reinvestment of its earnings more than once a year, and
6 the use of the quarterly DCF model, therefore, would
7 result in a double-counting effect. Not only is this
8 argument not peculiar to the quarterly DCF mode, for it
9 can be directed at any DCF model, but it is invalid for
10 several reasons. First, it confounds the investors'
11 market return with the company's earned return. Second,
12 the frequency of the company's reinvestment of earnings
13 is already embedded in investors' forecasts of earnings
14 and dividends, which drive the stock price and the DCF
15 estimate. Third, and most important, if a regulated
16 firm is only allowed to earn the annual DCF return on
17 the equity component of its rate base, it will be
18 unable to attract capital because investors can earn
19 higher return elsewhere.

20 I have shown earlier in my discussion of
21 Mr. Rothschild's testimony that the investor will not
22 realize the required rate of return, unless the
23 effective quarterly return is allowed. I also have
24 shown that the company's capital attraction is in
25 jeopardy unless the effective quarterly DCF return is

1 allowed.

2

3

DCF GROWTH RATES

4

5 **Q. Can you comment on Mr. Seery's growth estimates in the**
6 **DCF model?**

7 **A. In his DCF analysis, Mr. Seery estimates the**
8 intermediate growth term component of his two-growth
9 rate DCF model using Value Line's forecast dividends
10 for the next four years. He estimates the second stage
11 long-term growth component using the sustainable growth
12 method.

13

14

SUSTAINABLE GROWTH RATE

15

16 **Q. Do you have any objections to the sustainable growth**
17 **estimates used by Mr. Seery?**

18 **A. To apply the sustainable growth method, he multiplies**
19 the utility's expected retention ratio by the expected
20 earned return on equity, as forecast by Value Line for
21 the 1992-1994 period. It should be pointed out that
22 this sustainable growth estimate exerts a much stronger
23 influence on the final DCF result than the intermediate
24 growth rate assumed for the first four years, since it
25 captures the effects of growth from the fourth year

1 into perpetuity. It is, therefore, imperative that it
2 be estimated accurately if the DCF results are to be
3 reliable.

4 As was the case earlier in Mr. Rothschild's
5 testimony, Mr. Seery's sustainable growth method
6 contains a logical trap: the method requires an
7 estimate of ROE to be implemented. But if the ROE
8 input required by the model differs from the
9 recommended return on equity, a fundamental
10 contradiction in logic follows. Mr. Seery's
11 recommended 12.10 percent return on equity is lower
12 than the ROE's he uses in the sustainable growth
13 method. Column 6 of his Schedule 9 shows Value Line's
14 expected ROE's used in the sustainable growth
15 computation for AA-rated electric utilities; the average
16 expected ROE for the group is 13.62 percent, which is
17 in excess of his recommended return of 12.10 percent.
18 He is assuming in effect that the companies as a group
19 will earn at a return rate exceeding his recommended
20 equity range from year 4 forever, and that rates will
21 be set so that these companies earn 13.62 percent, but
22 he is recommending that a different rate be granted by
23 the Commission.

24 Moreover, as I stated earlier when discussing
25 Mr. Rothschild's testimony, the empirical finance

1 literature demonstrates that the sustainable growth
2 method of determining growth is a poor explanatory
3 variable of market value and is not significantly
4 correlated to measures of value, such as stock price
5 and price/earnings ratios.

6

7 Q. Do you agree that investors are expecting growth rates
8 in the range of 3.00 percent - 3.68 percent for
9 high-quality electric utilities?

10 A. No. The evidence shows that investors are expecting
11 growth rates above Mr. Seery's intermediate-term growth
12 estimate of 3.00 percent for the next four years and
13 his long-term growth estimate of 3.63 percent for
14 AA-rated electric utilities (see his Schedule 9). The
15 April 1990 issue of IBES provides consensus growth
16 forecasts for the AA-rated electric utilities employed
17 in Mr. Seery's comparable group; these are shown in
18 Schedule 4. The average consensus long-term growth
19 rate for the 13 companies in the group is 4.14 percent,
20 which is above Mr. Seery's estimate of 3.00 percent -
21 3.63 percent. Thus, the evidence indicates that
22 investors expect growth rates at least 50 basis points
23 higher than Mr. Seery's estimate.

24 One related point which Mr. Seery never clarifies
25 is why a two-stage two-growth rate DCF model was

1 selected throughout his testimony as opposed to the
2 constant growth rate DCF model. It is not at all clear
3 why Mr. Seery assumes that the electric utilities in
4 his sample will experience an intermediate growth rate
5 of 3 percent (see Seery's Schedule 9, average dividend
6 growth) over the next four years and an increase in
7 growth to 3.63 percent thereafter.

8
9 Q. Do you see any dangers in relying on Value Line as an
10 exclusive source of forecasts in applying the DCF
11 model?

12 A. Yes. Mr. Seery's exclusive reliance on Value Line as a
13 source of analysts' growth forecasts in both his DCF
14 and Risk Premium analyses runs the risk of being
15 unrepresentative of investors' consensus forecasts.
16 One would expect that averages of analysts' growth
17 forecasts such as those contained in IBES to be more
18 reliable estimates of the investors' consensus
19 expectations likely to be impounded in stock prices.
20 Moreover, the empirical finance literature has shown
21 that consensus analysts' growth forecasts are reflected
22 in stock prices, possess a high explanatory power of
23 equity values, and are used by investors.

24
25

1 FLOTATION COST

2

3 Q. Please comment on Mr. Seery's flotation cost
4 adjustment.

5 A. Both Mr. Seery and I agree on the need to adjust the
6 cost of equity for flotation cost, but we disagree
7 slightly on the size of the allowance. With respect to
8 size, he uses 3 percent, compared to my 5 percent. I
9 have already enumerated and described the results of
10 several empirical studies on the magnitude of flotation
11 cost for utility stock offerings in my original
12 testimony. These studies indicate clearly that 5
13 percent is a reasonable and conservative number. Mr.
14 Seery thus slightly underestimates the cost of equity
15 capital by about 15 basis points.

16

17 CONCLUSION

18

19 Q. What do you conclude from Mr. Seery's DCF Analysis?

20 A. My general conclusions are:

21 (1) His DCF analysis hinges solely on the "sustainable
22 growth" method, only one of several methods
23 traditionally used in regulatory proceedings, and
24 certainly the most fragile method.

25 (2) His application of the method is questionable and

1 contains a serious logical trap.

2 My specific conclusions are that Mr. Seery has omitted
3 the following elements in his DCF analysis: 1)
4 insufficient flotation cost adjustment, about 15 basis
5 points error, 2) omission of quarterly timing of dividend
6 payments, 30 to 40 basis points error, and 3) failure to
7 consider the analysts' consensus growth forecasts, about 50
8 basis points downward-bias. Any reasonable conservative
9 quantification of these errors and omissions easily
10 increases his cost of equity estimate by about 100 basis
11 points, from the DCF method alone, as shown below:

12	ITEM	SIZE OF ERROR (basis points)
13	INSUFFICIENT FLOTATION ADJUSTMENT	15
14	OMISSION OF QUARTERLY TIMING	30 - 40
15	DOWNWARD-BIASED GROWTH RATES	<u>50</u>
16	TOTAL	minimum 95 - 105

17 In a nutshell, Mr. Seery's 12.10 percent cost of
18 equity recommendation is downward-biased by about 100
19 basis points.

20 It should finally be pointed out that Mr. Seery's
21 risk premium analysis performed on the same companies,
22 using the same DCF approach for each year in the last
23 ten years, is vulnerable to the same criticism as his
24 DCF analysis. To the extent that his DCF analysis is
25 downward-biased by about 100 basis points, his risk

1 premium estimate of 3.2 percent, derived from the same
2 DCF analysis, is also downward-biased by 100 basis
3 points, and lies closer to 4.2 percent. Given current
4 Treasury bond yields of 9 percent this would suggest
5 equity costs of 13.2 percent for Gulf Power.

6
7 NON-UTILITY INVESTMENTS

8
9 Q. Mr. Seery recommends that all non-utility investments
10 should be removed directly from equity unless the
11 Company can show through competent evidence that to do
12 otherwise would result in a more equitable
13 determination of the cost of capital for regulatory
14 purposes. Do you agree?

15 A. No, I do not agree. Mr. Seery as well as all other
16 cost of capital witnesses have used proxies for
17 determining the cost of capital for Gulf Power, and
18 those proxies are based on utility investments and the
19 capital structure of Gulf Power. There has been no
20 evidence presented suggesting that the small investment
21 Gulf has in non-utility operation has impacted the cost
22 of capital calculation of any witness.

23 Besides, such exclusion would ignore the
24 risk-reducing benefits of diversification. Presumably,
25 Gulf Power's diversified activities into both utility

1 and non-utility operations reduces the risk to those
2 investors who are not diversified on their own.
3 Mr. Seery's exclusion of such activities, admittedly
4 very small, ignores the potential benefits of
5 diversification to the investor.

6 Mr. Seery appears to be asking the Company to
7 prove a negative, which is difficult if not impossible
8 to do. Gulf's negligible investment in non-utility
9 operation does not affect the cost of capital as
10 included in my recommendation or the recommendation of
11 any witness on the subject. Therefore, to allocate all
12 of this investment to equity would be punitive to the
13 Company and would require the non-utility business to
14 support the utility in an inequitable manner.

15
16 Q. Does this conclude your rebuttal testimony?

17 A. Yes, it does.

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19
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25

AFFIDAVIT

STATE OF FLORIDA)
)
COUNTY OF ESCAMBIA)

Docket No. 891345-EI

Before me the undersigned authority, personally appeared
Dr. Roger Morin, who being first duly sworn,
deposes and says that he/she is the Professor of Finance
for Regulated Industry for Gulf Power Company and that the
foregoing is true and correct to the best of his/her knowledge,
information and belief.

Roger A. Morin

Sworn to and subscribed before me this 14 day of
May, 1990.

Ann C. King
Notary Public, State of ~~Florida~~ at Large
Georgia

My Commission Expires:
Notary Public, Cherokee County, Georgia
My Commission Expires Aug 18, 1991

Florida Public Service Commission
Docket No. 891345-EI
GULF POWER COMPANY
Witness: R. A. Morin
Exhibit No. _____
Schedule 1
Page 1 of 3

QUARTERLY DCF MODEL

ASSUMPTIONS:

Stock Price =	\$ 30.85
Quarterly Dividend =	\$ 0.70
Annual Dividend =	\$ 2.80
Growth Rate =	4.50 percent

STEP 1: DETERMINE INVESTORS' REQUIRED RETURN

Dividend Yield = 9.08 percent
Growth = 4.50 percent

DCF Return = 14.04 percent

STEP 2: CONVERT ANNUAL RETURN TO MONTHLY RETURN

Monthly Market Required Return = 1.1009 percent

STEP 3: DETERMINE INVESTOR RETURN QUARTERLY DCF RATE IS ALLOWED

MONTH	BOOK EQUITY BOOK VALUE PER SHARE	MONTHLY EARNINGS PER SHARE	QUARTERLY DIVIDEND PER SHARE	EOM EQUITY BOOK VALUE PER SHARE
Jan-89	\$30.850	\$ 0.3396		\$31.1896
Feb-89	\$31.190	\$ 0.3434		\$31.5330
Mar-89	\$31.533	\$ 0.3472	\$0.7000	\$31.1802
Apr-89	\$31.180	\$ 0.3433		\$31.5234
May-89	\$31.523	\$ 0.3470		\$31.8705
Jun-89	\$31.870	\$ 0.3509	\$0.7000	\$31.5214
Jul-89	\$31.521	\$ 0.3470		\$31.8684
Aug-89	\$31.868	\$ 0.3508		\$32.2192
Sep-89	\$32.219	\$ 0.3547	\$0.7000	\$31.8739
Oct-89	\$31.874	\$ 0.3509		\$32.2248
Nov-89	\$32.225	\$ 0.3548		\$32.5796
Dec-89	\$32.580	\$ 0.3587	\$0.7000	\$32.2383
TOTAL		<u>\$4.1883</u>	<u>\$2.8000</u>	
STK PRICE AP GROWTH	4.50 percent	\$1.39		

STEP 1: DETERMINE INVESTORS' REQUIRED RETURN

Dividend Yield = 9.08 percent
Growth = 4.50 percent

DCF Return = 13.58 percent

STEP 2: CONVERT ANNUAL RETURN TO MONTHLY RETURN

Monthly Market Required Return = 1.0665 percent

STEP 3: DETERMINE INVESTOR RETURN ANNUAL DCF RATE IS ALLOWED

MONTH	BOOK EQUITY BOOK VALUE PER SHARE	MONTHLY EARNINGS PER SHARE	QUARTERLY DIVIDEND PER SHARE	EOM EQUITY BOOK VALUE PER SHARE
Jan-89	\$30.850	\$ 0.3290		\$31.1790
Feb-89	\$31.179	\$ 0.3325		\$31.5115
Mar-89	\$31.512	\$ 0.3361	\$0.7000	\$31.1476
Apr-89	\$31.148	\$ 0.3322		\$31.4798
May-89	\$31.480	\$ 0.3357		\$31.8155
Jun-89	\$31.816	\$ 0.3393	\$0.7000	\$31.4549
Jul-89	\$31.455	\$ 0.3355		\$31.7903
Aug-89	\$31.790	\$ 0.3390		\$32.1294
Sep-89	\$32.129	\$ 0.3427	\$0.7000	\$31.7720
Oct-89	\$31.772	\$ 0.3389		\$32.1109
Nov-89	\$32.111	\$ 0.3425		\$32.4534
Dec-89	\$32.453	\$ 0.3461	\$0.7000	\$32.0995
TOTAL		<u>\$4.0495</u>	<u>\$2.8000</u>	
STK PRICE AP GROWTH	4.05 percent	\$ 1.25		

MOODY'S 24 NON-NUCLEAR ELECTRICS:
GROWTH RATES HISTORICAL AND PROJECTED

<u>Company Name</u>	<u>5-Year Hist Div Growth</u>	<u>5-Year Hist Earn Growth</u>	<u>Prj Div Growth</u>	<u>Prj Earn Growth</u>	<u>IBES Analysts Forecast</u>
NON-NUCLEAR CONSTRUCTION COMPANIES					
1 Baltimore G&E	6.00%	10.50%	6.00%	3.50%	5.00%
2 Boston Edison	4.50%	5.00%	2.50%	1.00%	3.00%
3 Carolina P&L	3.00%	4.50%	3.00%	3.00%	3.00%
4 Cen Maine & Pwr	0.00%	0.00%	3.00%	2.00%	4.00%
5 Consol. Edison	12.00%	4.50%	6.00%	4.00%	4.00%
6 Delmarva P&L	6.00%	4.50%	3.00%	3.50%	3.00%
7 Detroit Edison	0.00%	6.00%	4.50%	3.00%	3.00%
8 Fla Progress	6.00%	7.50%	3.50%	4.00%	4.00%
9 Idaho Power	5.00%	0.00%	2.50%	8.00%	2.50%
10 Ipalco Ent	4.50%	5.00%	3.50%	2.00%	4.50%
11 Pennsylvania P&L	3.00%	3.00%	4.00%	5.00%	2.95%
12 Public Svc Colo	2.50%	4.50%	2.00%	2.00%	2.50%
13 SCE Corp	7.00%	4.50%	4.00%	3.50%	4.15%
14 TECO Energy	7.00%	6.50%	6.00%	5.50%	6.00%
	5.54%	5.50%	3.82%	3.57%	3.69%

SOURCE: IBES 4/19/90, VALUE LINE 3/2/90, 3/23/90, 4/20/90

DOW JONES INDUSTRIAL INDEX COMPANIES
PROJECTED RETURNS, YIELD, GROWTH RATES

<u>Company Name</u>	<u>Prj 3-5 Yr Ret</u>	<u>Current Yield</u>	<u>Price/ Bk Val</u>	<u>Prj Div Growth</u>	<u>Prj EPS Growth</u>
1. Allied Signal	15.00	4.90	1.56	0.00	11.00
2. Alum Co of Amer	16.00	4.50	1.14	17.50	12.00
3. Amer. Express	21.00	3.50	2.32	9.00	19.00
4. Bethlehem Steel	27.00	2.00	1.05	0.00	33.00
5. Boeing	10.00	1.90	2.74	14.00	21.50
6. Chevron Corp.	8.00	4.50	1.71	8.50	14.00
7. Coca-Cola	14.00	2.10	8.84	17.00	19.50
8. Du Pont	8.00	4.20	1.80	10.00	10.50
9. Eastman Kodak	34.00	5.10	1.87	9.50	16.00
10. Exxon Corp.	9.00	5.40	1.91	7.50	6.00
12. Gen'l Electric	14.00	3.00	3.17	14.00	14.50
13. Gen'l Motors	27.00	6.30	0.83	10.50	10.50
14. Goodyear Tire	22.00	4.90	0.99	4.50	5.50
15. IBM	18.00	4.60	1.58	8.00	9.50
16. Int'l Paper	19.00	3.20	1.26	10.50	13.50
17. McDonald's Corp	13.00	1.00	3.51	12.50	15.50
18. Merck & Co.	24.00	2.60	9.98	24.50	22.00
19. Minnesota Ming	13.00	3.50	3.40	12.50	12.00
20. Navistar Int'l	0.00	0.00	0.00	0.00	0.00
21. Phillip Morris	16.00	3.40	4.83	21.00	21.50
22. Primerica Corp	16.00	1.10	1.38	16.50	17.50
23. Proctor & Gamble	7.00	2.60	4.28	11.50	15.50
24. Sears, Roebuck	17.00	5.50	1.04	6.50	7.50
25. Texaco Inc.	10.00	5.30	1.95	10.50	13.00
27. Union Carbide	12.00	4.60	1.64	-5.50	1.00
28. United Techno	12.00	3.20	1.69	7.50	12.50
29. USX Corp	15.00	4.10	1.71	10.50	0.00
30. Woolworth Corp	12.00	3.40	2.24	14.00	12.00

MEAN	15.89	3.72	2.61	10.87	14.08
TRUNCATED MEAN	15.52	3.72	2.38	10.98	13.83

SOURCE: VALUE SCREEN II MAY 1990

HIGH-QUALITY ELECTRICS
GROWTH RATES

<u>Company</u> (1)	<u>Bond</u> <u>Rating</u> (2)	<u>IBES</u> <u>Growth</u> (3)
1. Allegheny Power	Aa/AA	3.20%
2. Baltimore Gas & Electric	Aa/AA	5.00%
3. Consolidated Edison NY	Aa/AA	4.00%
4. Duke Power Company	Aa/AA	5.00%
5. Iowa Ill. G & E	Aa/AA	4.00%
6. Ipalco Enterprises	Aa/AA	4.50%
7. Kansas P & L	Aa/AA	4.00%
8. Northern States	Aa/AA	3.50%
9. Oklahoma G & E	Aa/AA	4.00%
10. Orange & Rockland Util	Aa/AA	3.50%
11. SCE Corp	Aa/AA	4.15%
12. Southwestern PS	Aa/AA	3.00%
13. TECO Energy Inc.	Aa/AA	<u>6.00%</u>
Average		4.14%

SOURCE: COL. 1, 2 SEERY SCHEDULE 9
COL. 3 IBES 4/1990