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JACK SHREVE
PUBLIC COUNSEL

December 27, 2001

Ms. Blanca S. Bayó, Director
Division of the Commission Clerk
and Administrative Services
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0870

RE: Docket No. 010949-EI

Dear Ms. Bayó:

Enclosed are an original and fifteen copies of Direct Testimony of James A. Rothschild, Direct Testimony of Michael J. Majoras, Direct Testimony of William W. Zaetz, Direct Testimony of Kimberly H. Dismukes and Direct Testimony of Helmuth W. Schultz, III for filing in the above-referenced docket.

Please indicate receipt of filing by date-stamping the attached copy of this letter and returning it to this office. Thank you for your assistance in this matter.

Sincerely,

Stephen C. Burgess
Deputy Public Counsel

SCB/dsb
Enclosures

APP
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CTR
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LEG
OPC
PAI
RGO
SEC 1
SER

16124-01 thru 16128-01

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

DIRECT TESTIMONY OF JAMES A. ROTHSCHILD
DOCKET NUMBER 010949-EI

DECEMBER 27, 2001

Respectfully submitted,

Jack Shreve
Public Counsel

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GULF POWER

DOCKET NO. 010949-EI

Direct Testimony
of
James A. Rothschild

December 2001

GULF POWER

TESTIMONY OF JAMES A. ROTHSCHILD

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I. STATEMENT OF QUALIFICATIONS OF JAMES A. ROTHSCHILD

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is James A. Rothschild and my address is 115 Scarlet Oak Drive, Wilton Connecticut 06897.

Q. WHAT IS YOUR OCCUPATION?

A. I am a financial consultant specializing in utility regulation. I have experience in the regulation of electric, gas, telephone, sewer, and water utilities throughout the United States.

Q. PLEASE SUMMARIZE YOUR UTILITY REGULATORY EXPERIENCE.

A. I am President of Rothschild Financial Consulting and have been a consultant since 1972. From 1979 through January 1985, I was President of Georgetown Consulting Group, Inc. From 1976 to 1979, I was the President of J. Rothschild Associates. Both of these firms specialized in utility regulation. From 1972 through 1976, Touche Ross & Co., a major international accounting firm, employed me as a management consultant. Touche Ross & Co. later merged to form Deloitte Touche. Much of my consulting at Touche Ross was in the area of utility regulation. While associated with the above firms, I have worked for various state utility commissions, attorneys general, and public advocates on regulatory matters relating to regulatory and financial issues. These have included rate of return, financial issues, and accounting issues. (See Appendix A.)

Q. WHAT IS YOUR EDUCATIONAL BACKGROUND?

A. I received an MBA in Banking and Finance from Case Western University (1971) and a BS in Chemical Engineering from the University of Pittsburgh (1967).

II. PURPOSE

Q. WHAT IS THE PURPOSE OF THIS TESTIMONY?

A. The purpose of this testimony is to determine the cost of equity, capital structure, and overall cost of capital that is appropriate to apply to the rate base of the regulated electric utility operations of Gulf Power. Additionally, this testimony provides an evaluation of the testimony of Gulf Power's cost of equity witness, Mr. Benore.

III. SUMMARY OF FINDINGS AND RECOMMENDATIONS

Q. PLEASE SUMMARIZE YOUR FINDINGS AND RECOMMENDATIONS IN THIS CASE.

A. I have determined that the overall cost of capital that should be allowed to Gulf Power's regulated electric operations is 7.33%. This determination is based upon the capital structure proposed by Gulf Power, and a cost of equity of 10.00%. I have adopted the company's embedded cost of long-term debt, preferred stock, and customer deposits. I am aware that Florida regulatory policy has implemented numerous adjustment clauses which have the effect of reducing the risk experienced by Gulf Power's equity holders. These include a forward-looking fuel adjustment clause, a conservation adjustment clause, and an environmental adjustment clause. The aggregate impact of these clauses is likely to cause a reduction in risk beyond the level of risk reduction that exists on average by the comparative electric companies. I have not made a downward adjustment to my cost of equity recommendation to account for these lower risks. However, it would be reasonable for the Commission to make such a downward adjustment to the cost of equity to recognize the lower risk caused by these adjustment clauses. Equity reductions to reflect lower risks such as this have often been in the range of a 25 basis point (0.25%) reduction in the cost of equity.

The company's requested cost of equity is based upon the testimony of Mr. Benore. His testimony contains serious errors in the implementation of the

equity costing methods he has presented. These problems are explained in detail later in this testimony.

Summarizing, the major problem with his Discounted Cash Flow (DCF) cost of equity computation is that he applies the DCF Method as if investors not only expect short-term analyst forecasts to be accurate in the short-term, but also somehow applicable in the long-term. Mr. Benore's analysis implies that investors believe the average return on book equity (ROE) for his selected group of comparative electric companies will increase to 18% by 2024 and keep increasing forever. Ignoring his inappropriate stretching of short-term forecasts to the horizon, his DCF method would still be mathematically invalid because it is not indicative of the expected growth in dividends, stock price, or book value even over the next five years. The serious deficiencies in Mr. Bemore's DCF approach are repeated all over again in the portion of Mr. Benore's risk premium based methods that rely upon his DCF method.

For reasons shown later in this testimony, Mr. Benore's risk premium method introduces a substantial upward bias because he relies upon the historic quantification of the risk premium based upon the improper "arithmetic average" approach rather than the "geometric average". As will be shown later in this testimony, textbooks, the U.S. Securities and Exchange Commission (SEC) and even Value Line has found that using the arithmetic average rather than the geometric average results in an upwardly biased result.

As will be explained later in this testimony, my criticisms of Mr. Benore's approaches to determine the cost of equity are confirmed by many

sources, one of which is a recent analysis presented by Credit Suisse First Boston (CSFB). In this CSFB report, entitled "Global Strategy Perspectives"[1] they find that five-year analysts' consensus growth rates "... are unusually unreliable...", being high because of "... one-off reductions in interest rates and tax gains...". CSFB also states "(w)e remind readers that over the last 10 years I/B/E/S earnings numbers have on average been 6% too optimistic 12 months prior to a reporting date." CSFB finds that the equity risk premium over treasuries for an investment of average risk is 3.7%. The risk premium over Baa rated corporate bonds is 1.9%. These bond risk premiums are consistent with my cost of equity recommendation (see Schedule JAR 10, P. 1) and are much lower than the very excessive 6.62% equity risk premium over corporate bonds used by Mr. Benore. See page 32, line 9 of his direct testimony.

[1] An article in a publication entitled *Weekly Insights*, dated October 4, 2001. The article is contained on pages 55-64.

IV. CAPITAL STRUCTURE AND EMBEDDED COST RATES

Q. HOW HAVE YOU DETERMINED THE CAPITAL STRUCTURE AND EMBEDDED COST RATES IN THIS PROCEEDING?

A. I have adopted the capital structure and embedded cost rates as proposed by the company.

V. COST OF COMMON EQUITY

A. Introduction

Q. HOW DID YOU DETERMINE THE COST OF EQUITY, AND WHAT WERE YOUR FINDINGS?

A. I have determined the cost of equity by applying two different versions of the DCF method and two different versions of the Risk Premium/CAPM method. The DCF method was applied to the group of comparative electric distribution companies selected by company witness Mr. Benore. For additional comparative purposes, I also applied the DCF method directly to Southern Company, the parent of Gulf Power. I consider the results of all the methods to produce my final recommendation compare and contrast the results of each method with the results obtained from the other methods. I do not mechanically combine various results because it is preferable to compare and contrast the results and evaluate them in the context of current economic conditions. For example, the flight to quality in the market today causes a properly applied risk premium/CAPM model to understate the cost of equity. I gave this fact important consideration when interpreting the results. In more normal economic times, it may be appropriate to give the risk premium/CAPM result a higher weighting.

Q. One of the two versions of the DCF method I used is based upon the commonly used simplified, or constant growth, or single-stage version of the DCF model. This version determines the cost of equity by summing the dividend yield and a future expected growth rate. This constant growth version of the DCF model only produces a valid result if the value used for the growth rate is reasonably representative of investors' future expectation of a constant growth rate for earnings, dividends, book value, and stock price. As will be explained later in this testimony, should the growth rate used in this constant growth formula not be representative of the anticipated growth rate for any one of these factors, then this simplified version of the DCF method should not be used because it will produce a result that is not a valid indicator of the cost of equity.

In addition to presenting the constant growth form of the DCF model, I also have used the results of a complex, or multi-stage version of the DCF model. This multi-stage version of the DCF model separately discounts each future anticipated cash flow and therefore does not require the limitation of a constant growth rate in earnings, dividends, book value, and stock price to still be correct. Any combination of future levels of these factors can be used so long as the inputs are consistent with investors' future expectations. The multi-stage DCF model might seem more complicated because it requires separate estimates of the expected cash flow in each future year considered. In reality, however, the proper implementation of the single-stage DCF requires so much care in the selection of a growth rate that is equally applicable to dividends, earnings, book

value, and stock price that it actually takes an even greater level of sophistication to properly implement the single-stage DCF than the multi-stage DCF.

As shown on Schedule JAR 2, when applied to the comparative group of electric companies, the constant growth or single-stage DCF is indicating a cost of equity of 8.86% to 9.64% depending upon the time period and the companies used, and the multi-stage DCF is indicating a cost of equity of 9.25% to 10.36%, with an average result of 9.80%.

The risk premium/CAPM method was first applied by utilizing the actual historic difference between the earned total return on equity investments compared to the inflation rate. This method is helpful because the relationship between the inflation rate and the earned return on common stocks has been shown to be relatively stable in all major sub-periods from 1802 through 1997.[2] Furthermore, the U.S. Treasury Department now sells long-term U.S. treasury bonds that are indexed to inflation as well as selling U.S. treasury bonds that are not indexed to inflation. Therefore, it is possible to accurately quantify what future rate of inflation investors expect by comparing the yield on the two different forms of U.S. treasuries. By quantifying investors' expectations for the future inflation rate and adding a risk premium derived from the historically stable differential between the inflation rate and the return on common stocks, it is possible to develop an estimate of the current cost of equity. As shown on Schedule JAR 2, the cost of equity derived from this approach for the average

[2] Page 12 of *Stocks for the Long Run* by Jeremy J. Siegel, Professor of Finance- the Wharton School of the University of Pennsylvania, McGraw Hill, 1998.

equity is currently indicated to be 8.90%. The result would be lower than 8.90% if the lower risk of electric utilities was considered. While I normally have made a specific adjustment to lower the indicated cost of equity for risk specific reasons, in the current marketplace the yields on long-term bonds already reflect the flight to quality caused by uncertain economic times and the stimulating effects of the Federal Reserve Board. Therefore, I have not included the risk-adjusted results of the inflation premium method in my cost of equity summary.

The second approach to the risk premium/CAPM method was to add a risk premium to the cost of debt. This method has been commonly applied in utility rate proceedings by determining the historic difference between the actual total return earned by investors on common stocks (total return is dividends plus capital appreciation) and comparing that return to the total return earned on a bond investment. The difference between those two returns is the risk premium. That risk premium is then modified for the risk that is appropriate for the company or group of companies to which the method is being applied. In the past, I have applied this method by determining the appropriate risk premium between the cost of debt and the cost of equity for an average electric utility and the cost of various debt instruments. The debt instruments I used were a) long-term treasury bonds, b) long term high quality corporate bonds, c) intermediate term treasury bonds, and d) 90-day treasury bills. Again, due to current economic conditions, there are temporarily problems with using treasury securities in a risk premium analysis based upon

historic risk premium relationships. Therefore, I have only summarized the results of a risk premium analysis based upon long-term corporate bonds. The overall cost of equity based upon this method was 10.62% for a non-utility common stock of average risk. After using beta to adjust for the lower risk of the electric utility industry, the indicated cost became 8.94%. See Schedule JAR 2.

B. Summary of Conclusions on Cost of Equity

Q. WHAT IS THE COST OF EQUITY TO GULF POWER?

A. Based upon an analysis of all of the cost of equity results shown on Schedule JAR 2 and considering conditions in the current financial markets, I find that a conservatively high estimate of the cost of equity to Gulf Power is currently 10.00%.

Recognizing that the pending recession fears are causing the DCF method to overstate the cost of equity at this juncture, I noted that the constant growth version of the DCF method as applied to the comparative group of electric utilities is 8. 86% to 9.64%. I also found that the cost of equity indicated by the multi-stage version of the DCF method applied to the same group of electric distribution utilities varied between 9.25% to 10.36% depending upon whether the low end or the high end of the cost of equity range expected by investors is used in the second stage. For the first stage of the DCF method, I used the return on equity forecast by Value Line. To the extent that Value Line's forecast is more optimistic than actually anticipated by investors, this will make the multi-

stage approach overstate the cost of equity. The cost of equity indicated by the risk premium/CAPM method is 10.62% for an equity of average risk, and is 8.94% if consideration is given to the lower than average risk experienced by a regulated electric utility. See Schedule JAR 2. The results of the inflation premium method are difficult to interpret in the current environment because in times of recession, there us usually a "... flight to quality....". "Flight to quality" means that investors are more inclined to purchase low risk U.S. treasury securities in uncertain economic times than when they are more confident about the outlook for the economy. The inflation premium method is dependent upon U.S. treasury interest rates and is therefore is being temporarily impacted by this "flight to quality".

Based upon a review of the DCF and risk premium/CAPM results, I recommend that the cost of equity for an electric utility of average risk is no more than 10.0%. This result is conservatively high because it is slightly above the 9.80% average of the results of the complex, or multi-stage DCF. The results of the multi-stage DCF are higher than the results for either the constant growth DCF or the risk premium/CAPM results.

Since the percentage of common equity in the capital structure of Gulf Power is very similar to the percentage of common equity used by the comparative electric companies, no financial risk adjustment is required.

Q. HAVE YOU SEEN COST OF CAPITAL WITNESSES ARGUE THAT THE DCF METHOD UNDERSTATES THE COST OF EQUITY WHEN THE MARKET-TO-BOOK RATIOS ARE ABOVE 1.0?

A. Yes, I have seen company cost of capital witnesses, including Mr. Benore in this case, that have made such an argument even though such an argument is inaccurate. Both the FERC and the FCC have appropriately rejected such an argument, finding that applying the allowed rate of return to the utility's book value provides the return required by shareholders. As FERC has explained in detail:

> Specifically, they claim that when a utility's market-to-book ratio is above one, applying a DCF-based allowed rate of return to a book value rate base results in earnings that are too low. Conversely, when a utility's market-to-book ratio is below one, applying a DCF-based allowed rate of return to a book value rate base results in earnings that are too high. Both commenters argue that the allowed rate of return should be applied to a market value rate based rather than to book value.
>
> The following example demonstrates the circularity of their claim. Equity capital costs generally rise as interest rates rise. Conversely, equity capital cost rates generally fall as interest rates fall. During periods of risking equity costs, utilities generally file for rate increases to cover these higher costs. This action protects utility shareholders from declines in the value of the stock. The result is a tendency to maintain a utility's existing market-to-book ratio during periods of rising equity costs.
>
> During periods of falling capital costs, the revenue required to meet shareholder capital costs requirements also declines. Until a utility files for new rates at the lower capital cost, it continues to charge rates based on the higher

equity capital costs that existed when the current rates were set. The result is a tendency for the utility to earn more than its shareholders currently require and a concomitant increase in the price of the utility's common stock and market-to-book ratio.

When capital costs are below those of the previous filing, applying the allowed rate of return to a market value rate base would perpetuate the unnecessarily high revenues at the expense of utility's customers. **Applying the allowed rate of return to a book value rate base would reduce revenue to the level required by shareholders at the new lower cost of equity. These revenues will provide the utility with an opportunity to recover all costs including the cost of capital.**

> The argument over the application of an allowed rate of return to a market value rate base is an old one and the problem of circularity inherent in that approach has been long and widely recognized. **The Supreme Court's statement in Federal Power Commission v. Hope Natural Gas Co. that "rates cannot be dependent upon 'fair value' when the value of the going enterprise depends on earnings under whatever rates may be anticipated" reflects its recognition of that problem. The market value of an enterprise or its common stock depends upon its earnings or anticipated earnings, which in turn depends upon the rates allowed. Thus, market value is a result of the ratemaking process and may not properly be the beginning of the process as well.**

Docket RM87-35-000, P. 3348 of the Federal Register/ Vol. 53, No. 24, Friday Feb. 5, 1988. Emphasis added.

From the above quote, it is proper to conclude that the FERC recognizes good ratemaking should not try to set a cost of equity with the intent of maintaining a stock price that is in excess of book value. If the stock price exceeds book value, a reasonable result of the new rate determination could be for the stock price to decline. If the stock price is selling below book value, a reasonable outcome of the new rate determination could be for the stock price to increase. This meets the objective of allowing a reasonable rate of return on rate base.

Similarly, the Federal Communications Commission (FCC) responded to an argument made by Ameritech which suggested that the FCC was "... obligated to prescribe a rate of return that will ensure continuation of the carriers' current market-to-book ratios."[3] The FCC rejected Ameritech's argument for several reasons. The reasons stated were:

[3]Page 15 of decision FCC 90-315 dated September 19, 1990, in CC Docket No. 89-624.

... market-to-book ratios greater than one have been viewed traditionally as possible indicators that the company's return is greater than its required return.

...Ameritech places great reliance on its perception that unless this Commission applies the market-derived rate of return to its equity base, stockholders will see a massive decline in the value of their stock. It is true that prescription of a rate of return based on market data could lead to a decrease in the value of the stock if investors have been expecting continuation of a previously-authorized higher rate of return. On the other hand, a reduced rate of return might have no impact on stock price if, as often happens, the reduction had already been anticipated and discounted by the market. In any case, the requirement that we balance ratepayer and investor interests does not allow us to insulate investors from a diminution in the value of their stock (if in fact we could do so). **In any event, if we prescribed a rate of return above that which market data showed to be reasonable, investors would increase their expectations as to the carrier's rate of return, market value would increase, and the carrier would seek a higher rate of return authorization so that these higher expectations are not thwarted. We would be remiss in our responsibilities to balance ratepayers' and investors' interests if we implemented procedures that effectively insulated a carrier from experiencing a decrease in its authorized return. Thus, our current market-based rate of return procedures meet the Bluefield/Hope criteria notwithstanding that their application herein may adversely impact carriers' high market-to-book stock ratios.**

Moreover, market-to-book ratios greater than one have been viewed traditionally as possible indicators that the company's return is greater than its required return.

(Emphasis added)

(FCC-90-315, P. 15.)

C. Details of the Determination of the Cost of Equity

1. Definition of the Cost of Equity

Q. PLEASE DEFINE THE TERM COST OF EQUITY.

A. The cost of equity is the rate of return that must be offered to a common equity investor in order for that investor to be willing to buy the common stock. The rate of return is provided to investors in two parts. One part of the return is from a dividend. The other part of the return is through the change in the stock price. Investors buy stock to benefit from the total return. Total return is the sum of the dividend income and the profit (or loss) obtained from the change in the stock price. While it is uncommon in the utility industry, many companies do not pay a dividend at all. Yet, investors are willing to buy the stock if they feel that the likely capital appreciation will offset the lack of any dividend income.

Common equity investors do not know with certainty what the stock price or dividends will be in the future. Therefore, common equity investment always entails risk, but the risk can vary greatly from company to company.

Typically, public utility common stocks are among the least risky common equity investments because dividends are generally more secure, and because utility companies enjoy a territorial monopoly for at least a major part of their business. The territorial monopoly for a utility company is especially useful for risk reduction because utility companies provide a basic service that is needed by their customers both in good times and in bad times. Therefore, as long as it can prove cost justification, a utility company can (through the mechanism of a

rate case) increase its rates to the point where it can recover all of its reasonably incurred costs – including the cost of capital.

The above description of the cost of equity might sound to some like a description of the DCF method because it talks about dividend yield and stock price appreciation. Perhaps a major part of the reason that the DCF method has been so commonly used over the years is because, more than any other method, if properly applied, it directly examines these factors that provide the incentive for investors to buy common stock in the first place. The DCF method starts with the current dividend yield, and adds to that dividend yield an estimate of growth to arrive at the estimated cost of capital. This growth is really the estimate of the future capital appreciation that investors are expecting. Dividend growth, book value growth, and earnings growth, to the extent they may be used, are only relevant to the degree they can help estimate stock price appreciation.

The risk premium method, which includes the CAPM method, is also commonly used by witnesses in rate proceedings. The risk premium/CAPM method is really measuring the very same thing as the DCF method --- the total return expected by a common stock investor. Rather than determining this total return by directly estimating future dividends and capital appreciation, the risk premium/CAPM method is looking to either interest rates or the inflation rate to help estimate what total return common stock investors want.

These methods are appropriate to use because they measure the return investors care about, the return on market price. An investor who buys a common stock at $10.00 per share and sells it a year later for $10.90 will have

received a 9% return (plus dividends, if any) irrespective of whether or not the company earned any money, and irrespective of the return on book value.

However, the rate of return estimated by these methods is correctly applicable to book value. Investors are entitled to a reasonable return on RATE BASE, not a return on the current market value of the stock. Therefore, in the hypothetical example, the commission should set rates such that the return on the used and useful rate base is expected to be 9.0%. If the market price should happen to be below book value, this would NOT be justification for providing a lower return than the cost of equity demanded by investors. If the market price should happen to be above book value, this would NOT be justification for providing a higher return than the cost of equity demanded by investors. The FERC and the FCC both agree with this principle. See quote noted above. As the U. S. Supreme Court found in its decision in the Hope Natural Gas case (320 US 591-660), the stock price is "... the end product of the process of rate-making not the starting point..." and that "... the fact that the value is reduced does not mean that the regulation is invalid."

2. Implementation of the DCF Method

a) Introduction

Q. HOW IS THE DCF METHOD USUALLY IMPLEMENTED?

A. The DCF method is usually implemented in utility rate proceedings using the constant growth version. It is applied by implementing the following formula:

cost of equity = dividend yield + future expected growth

Growth of: dividends, earnings, book value and stock price.

Q. IS THE DCF MODEL WIDELY USED IN UTILITY RATE PROCEEDINGS?

A. Yes. The DCF model has been widely used for many years. From my experience, the constant growth form of the DCF model is more widely used than any other approach to determining the cost of equity.

Q. IS THE DCF MODEL COMMONLY IMPLEMENTED IN A CONSISTENT MANNER?

A. No. The DCF model is widely used and widely abused. Most implementations of the DCF model in utility rate proceedings start out with the same D/P +g, or dividend yield plus growth formula. Also, most generally agree that the growth rate "g" must be representative of the constant future growth rate anticipated by investors for dividends, earnings, book value, and stock price. However, all too often, this important principle is forgotten when it comes time to implement the constant growth DCF formula. Such carelessness causes substantial, unnecessary error when implementing the constant growth version of the DCF model.

Q. WHY IS IT SO IMPORTANT FOR THE GROWTH RATE USED IN THE CONSTANT GROWTH VERSION OF THE DCF MODEL TO BE

REPRESENTATIVE OF THE CONSTANT GROWTH RATE FOR DIVIDENDS, EARNINGS, BOOK VALUE AND STOCK PRICE?

A. The derivation of the constant growth formula is based upon the principle that investors buy stock solely for the right to future cash flows obtained as a result of that ownership. The cash flows are obtained through dividend payments and/or stock price appreciation. The constant growth version of the DCF formula will accurately quantify investors' expectations only if investors expect the dividend yield (defined as dividend payment divided by stock price) and the growth in dividends to best be estimated at one constant growth ratefor many years into the future. The dividend yield and growth rate that are used in the constant growth formula must be selected carefully. Consider what happens if the expected growth rates are not all equal:

1. DIFFERENT GROWTH RATE FOR EARNINGS AND FOR DIVIDENDS. Both dividends and the ability for a company to grow dividends in the future are directly derived from earnings. The dividend yield, or D/P, portion of the constant growth DCF formula quantifies the investor-derived value from the portion of earnings paid out as a dividend and the "g" portion of the constant growth DCF formula quantifies the value of the portion of earnings retained in the business. If dividends are quantified using the current dividend rate, but an earnings forecast is used to quantify "g" that is based upon a future environment in which earnings are expected to grow more rapidly than dividends, an ever-increasing

portion of the total return expected by investors will be attributable to growth and a smaller portion will be attributable to dividends. Under these conditions, other things being equal, the constant growth version of the DCF model would overstate the cost of equity because the decrease in the payout ratio that results from a more rapid earnings growth rate than dividend growth rate would shift a greater portion of the earnings from dividends to earnings growth. The result of this is that the higher future earnings growth rate would cause the portion of earnings available for dividends to be lower, and therefore the dividend yield would be lower. Conversely, if future earnings growth were expected to be less than dividend growth, the constant growth form of the DCF model would understate the cost of equity. Every time a dividend payment is scheduled, the board of directors of a company decides what portion of earnings to pay out as a dividend and what portion of earnings to re-invest, or "retain" in the business. It is this re-investment of earnings that causes sustainable growth. Both dividends and growth therefore compete for the same dollars of earnings. The higher the portion of earnings allocated to the payment of dividends, the smaller the amount of earnings left over for re-investment and therefore the lower the future growth rate. The relationship between the portion of earnings paid out as a dividend and the portion re-invested in the business is commonly referred to as either the dividend "payout" ratio (which is computed by dividing dividends by earnings), or the "retention rate" (which is computed by

dividing the portion of earnings re-invested in the business by earnings). The sum of the payout ratio and the retention rate is 1.0, or 100% because 100% of earnings are either paid out as a dividend or retained in the business. The constant growth version of the DCF formula uses a specific dividend rate to compute the "D/P" term of its formula. This specific dividend rate has specific earnings "retention rate" associated with it. This specific "retention rate" provides for one and only one percentage of earnings that remains to cause the growth that is quantified in the second term of the equation. This is because the portion of earnings paid out as a dividend and the portion not paid out as a dividend must remain equal to total earnings. Consider what happens if the dividend "payout ratio" or the earnings "retention" ratio are not constant. If they are not constant, the portion of earnings available for growth and the portion available for dividends will continue to shift over time, but under such conditions the constant growth formula produces an erroneous result because it is incapable of properly accounting for this change.

2. EARNINGS PER SHARE GROWTH RATE DIFFERENT FROM STOCK PRICE GROWTH RATE. When earnings per share growth rates are measured over a relatively short time period such as the five-year consensus growth rates compiled by services such as Zacks and I/B/E/S, it is likely that investors expect materially different growth rates in earnings per share and stock price. This is because the earnings per

share growth rate as reported in such services is simply the compound annual growth rate in the earnings per share from the most recently completed fiscal year to the earnings per share forecast for five years into the future. Presumably, an earnings per share forecast for five years into the future is sufficiently far off that analysts' forecasts for that time period must be based upon an expectation of normal conditions. Five years into the future is too far off to forecast abnormal economic conditions, abnormal weather conditions, or any abnormal operating problems that could impact earnings. However, the base year from which earnings are forecast is likely to contain some abnormalities that have an impact on earnings. To the extent this abnormality exists, the forecast of earnings per share growth from the base year to a period five years in the future will be equal to the sustainable growth rate plus or minus the impact of any abnormalities. Growth that is required to bring earnings up to or down to normally expected conditions is not sustainable growth and therefore it is not the kind of growth that would be mirrored in the stock price growth rate.

3. DIFFERENT GROWTH RATE FOR EARNINGS AND FOR BOOK VALUE. The return on book equity is computed by dividing earnings by book value. This is an important number for several reasons: a) for a regulated utility company, the allowed cost of equity is the return on book equity that a utility commission intends for a

company to earn on the regulated portion of its business, and b) unregulated companies attempt to earn the highest risk adjusted returns on equity that is possible. If earnings per share grow more rapidly than book value per share, the return on equity increases. Conversely, if earnings per share grow more slowly than book value per share, the return on equity decreases. While increases and/or decreases in the earned return on equity can and do occur, it is not credible to forecast a sustained change in the return on equity for the many years into the future that are required in the constant-growth DCF model. A forecasted continuation of a decrease in the earned return on equity would eventually drive the earned return on equity to near zero – a condition that is not credible for a regulated business providing a needed service. Similarly, a forecasted continuation of an increase in the earned return on equity would eventually drive the earned return on equity to an extremely high number – a condition that would not form the basis for a credible growth rate forecast for a regulated business because of the regulatory constraints on the authorized return. Similarly, an earnings per share growth rate higher than the book value per share growth rate is not credible for a competitive business because, as returns would go higher and higher, more and more competitors would be attracted. If a growth rate based upon an earning per share forecast higher than the forecast book value per share growth rate were used in a constant-growth form of the DCF model, then the constant-growth version of the DCF model

would contain an upward bias. Conversely, if an earnings per share forecast that is lower than the book value per share growth rate, then the constant-growth form of the DCF model would contain a downward bias.

Q. ARE FIVE-YEAR EARNINGS PER SHARE FORECASTS OF THE TYPE AVAILABLE FROM SOURCES SUCH AS ZACKS, I/B/E/S, AND VALUE LINE SUITABLE AS A PROXY FOR LONG-TERM SUSTAINABLE GROWTH IN THE CONSTANT-GROWTH FORM OF THE DCF MODEL?

A. No. For the above reasons, it is improper to directly use a five-year earnings per share forecast as a proxy for long-term sustainable growth in the constant-growth DCF model. No attempt is made for these earnings per share forecasts to be representative of the anticipated growth rate in dividends per share, book value per share, or stock price. Therefore, these sources can be used to develop a sustainable growth rate in the context of a constant-growth DCF model, but if used directly as a proxy for long-term growth they are no more accurate than it would be to forecast the height of a human at age 60 based upon a reasonable forecast of annual growth for the five years starting at age 12. These earnings per share forecasts are generally different from the anticipated growth in dividends, book value, and stock price because they include the often substantial impact of bringing earnings up or down to a normal earned return on equity from whatever return on equity was achieved

in the most recently completed fiscal year. Additionally, such analysts' growth rates tend to be overstated because of the well-documented propensity for analysts to be optimistic.[4] The combined effect of the habitual optimism and the required movement over a relatively short five-year time period to bring earnings per share up to the optimistic levels causes five-year analysts' growth rates to commonly overstate the future sustainable growth rate. As noted earlier, an October 4, 2001 report issued by Credit Suisse First Boston noted that analysts' estimates "... have on average been 6% too optimistic 12 months prior to a reporting date."[5] As a result, DCF approaches that rely upon the direct use of analysts' five-year growth rates repeatedly overstate the cost of equity.

Q. HOW IS IT POSSIBLE TO ENSURE THAT THE GROWTH RATE USED IN THE CONSTANT-GROWTH VERSION OF THE DCF MODEL WILL

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[4] While there are many sources that have shown this optimism to exist, one noteworthy source is a statement by Arthur Levitt, chairman of the U.S. Securities and Exchange Commission. The following appeared on page 4 of the 5/31/99 issue of Barrons:

> ARTHUR LEVITT MAY BE THE best chairman of the SEC since Joe Kennedy. And no accident, really: Like Kennedy, Levitt spent enough time in the Street to develop a fine nose for good stocks and bad people.
>
> Back in April, Levitt delivered some cogent remarks on analysts (in the sacred order of being, they're somewhat lower than angels) and their innate bullishness (solely the product of their sunny natures).
>
> As he observed, sell recommendations make up 1.4% of all analysts' recommendations, while buys represent 68%.
>
> By way of explanation for this strange imbalance, he offers the possibility of a "direct correlation between the content of an analyst's recommendation and the amount of business his firm does with the issuer."
>
> Analysts, he grouses are too eager to see every frog of a stock as a prince. What the world needs, he laments, are analysts who call a frog a frog.

RESULT IN A CONSTANT GROWTH RATE INDICATOR FOR DIVIDENDS, EARNINGS, BOOK VALUE, AND STOCK PRICE?

A. The most straight-forward and most accurate way to make this computation is to use the formula "b x r + sv" formula, where b= the earnings retention rate, r=the future expected return on book equity, and sv is a factor that accounts for sustainable growth caused by the sale of new shares of common stock. The mathematics in support of the derivation of the DCF model show that the "b x r + sv" formula should be used to quantify sustainable growth. Common mistakes with this formula include using historic values of "b x r" and/or of "sv" rather than future expected values, and most importantly by failing to realize that in order for the formula to be applied properly, the retention rate value, "b" must be determined in a manner that is consistent with the other values input into the DCF model. This is a critical step necessary to ensure that the portion of the future expected earnings that have been allocated to dividends is consistent with the future expected earnings level that is used to compute growth. This is the way to be sure that the retention rate used to compute the dividend yield portion of the constant-growth portion of the DCF model is the same as the retention rate used to compute growth. If the two are not equal, then the total amount of future expected earnings allocated in aggregate to dividends and to growth will be something other than 100% of

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[5] *Weekly Insights*, "Global Strategy Perspectives", October 4, 2001, page 58.

earnings. An approach that accounts for something other than 100% of earnings in the cost of equity computation will result in an invalid result.

The way to ensure the consistency necessary for a valid result from the implementation of the constant-growth form of the DCF model is to compute the retention rate "b" based upon the inputs used for the dividend rate "D" and the future expected return on equity, "r". This computation is straight-forward. By definition the retention rate "b" is equal to the portion of dividends not paid out as a dividend divided by earnings. The earnings consistent with the value used for "D" is computed by multiplying book value as of the time of the determination of "D" by the value of "r". The result is the future expected rate of earnings that is consistent with the value used for "D". By subtracting "D" from the future expected earnings consistent with the value used for "r" and dividing that amount by the earnings consistent with the value chosen for "r" results in a retention rate that contains the necessary consistency. If any other value for "b" is used, such as a forecasted value for "b" in some future time period, then the result from the constant-growth DCF computation would be invalid.

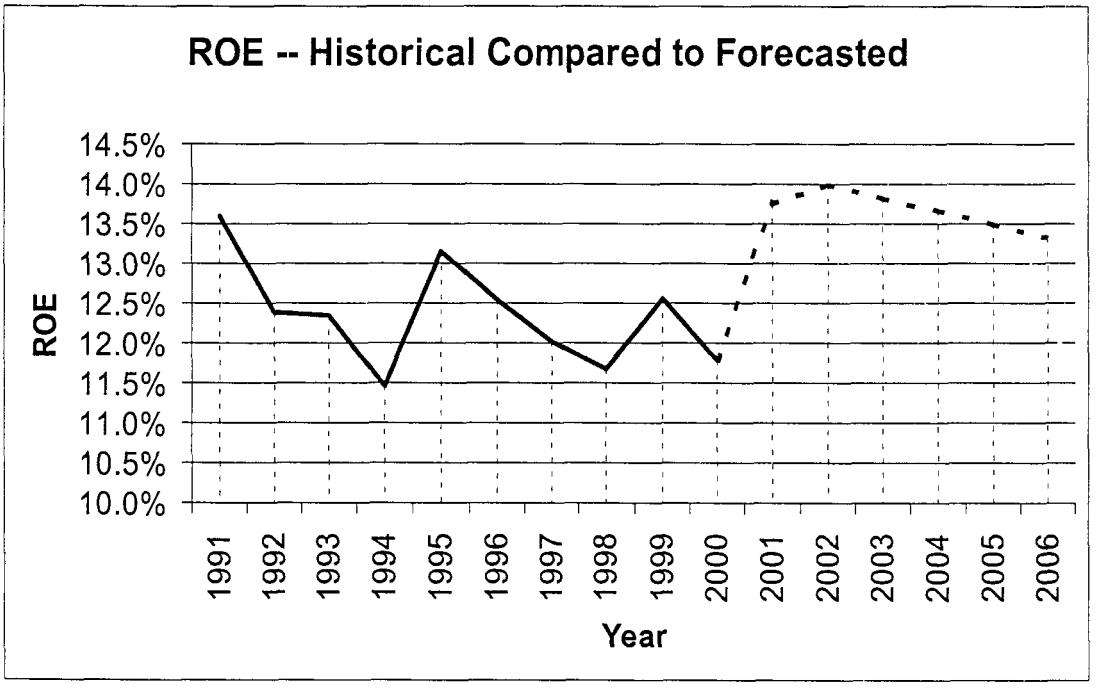
Q. HOW DID YOU APPLY THE DCF MODEL IN THIS CASE?

A. I applied the DCF method two different ways. One way is a single-stage, or constant growth DCF model in which I added a growth rate that was carefully constructed to meet the rigorous requirements of the constant growth formula. Both approaches to the DCF method are dependent upon an estimate of what common equity investors expect for future cash flow. Any company creates a

future cash flow for its equity investors by investing funds in assets that are needed by its business. The future cash flow rate is therefore dependent upon the rate at which the funds invested by the equity investors is able to earn. The rate at which they are able to earn is referred to as the return on book equity.

Q. HOW DID YOU DETERMINE THE FUTURE RETURN ON BOOK EQUITY ANTICIPATED BY INVESTORS?

A. I examined both the historic actual returns earned on average by the comparative group of electric companies and the future return on equity forecast by Value Line. The results of that analysis are illustrated on the graph below.



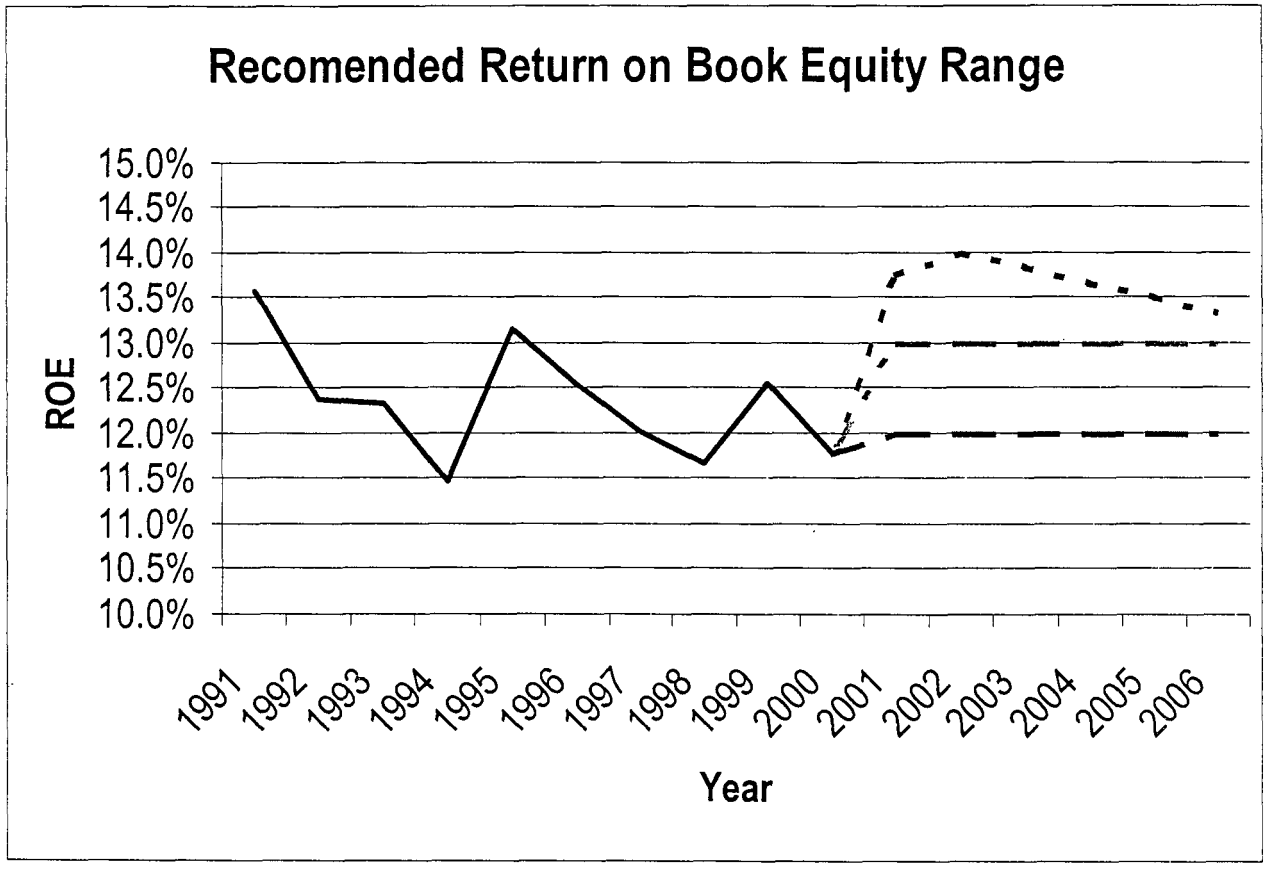
The data used to compile the above graph is shown on Schedule JAR 3, Page 4.

The above graph shows that historically earned returns have been in a relatively tight band, varying between 11.7% at the low and 13.6% at the high. Despite this history, Value Line forecasts a marked increase in the average earned

return on equity up to about 14.0% in 2002, followed by a gradual tapering off to 13.3% by 2006. To determine the future returns on equity, and therefore the future cash flows expected by investors, it is necessary to view the above as knowledgeable investors are likely to view it.

Q. HOW WOULD KNOWLDEGEABLE INVESTORS VIEW THE ABOVE DATA?

A. Knowledgeable investors would start by questioning the credibility of a forecast for a sudden increase in the earned return on equity in light of a long history of returns being within a relatively tight lower range. In view of the well documented and widely publicized view that analysts tend to be overly optimistic about future earnings, and the knowledge that lower interest rates are likely to mean lower allowed return on equity in the future than were allowed in the past, most knowledgeable investors would not find the forecasted increase in return on equity to be a credible estimate of the earned return on book equity level that is sustainable into the future. The graph shown below shows the historic actual earned returns on book equity, the returns on book equity forecast by Value Line, and a conservatively high estimate of the return on book equity range that likely encompasses what is expected by the majority of knowledgeable investors:



As shown on Schedule JAR 3 page 3, the median future expected return on book equity consistent with the analysts growth rate forecasts compiled by Zacks is 14.49%.

For the first stage of the multi-stage DCF model, which is the period from 2001 through 2006, I used the returns on equity as forecast by Value Line. Given the well-known upward bias in analysts' estimates, my use of Value Line's forecast produces a conservatively high result. Determining what return on equity for the second-stage that would be consistent with Value Line's projections is not clear-cut. The Value Line projection shows an initial increase in the forecasted return on book equity materially above the historic pattern, followed by a decline towards the historic pattern. In consideration of this

downtrend, the historic pattern for earned returns, the fact that allowed returns on equity are considerably below the projected return on equity range forecast by Value Line through 2006, and the known optimism embedded in analysts forecasts, the best estimate for the return on book equity anticipated by investors, I have concluded that the best estimate of what investors expect for a future sustainable return on book equity is between 12.0% and 13.0%. This range is conservatively high since the low end of the range is above the low end of the historic range, and the high end of the range is above the high end of the range is above the high end of the historic range in every year since 1991. The range I have chosen is also conservatively high because unless interest rates go back up to the prior levels they were on average from 1991 through 2000, allowed return on book equity should be reduced as we go into the future.

Q. YOU SAID THAT ANALYSTS ESTIMATES ARE WELL KNOWN TO HAVE A TENDENCY TO BE HIGH. PLEASE PROVIDE YOUR BASIS FOR THAT CONCLUSION.

A. In addition to the statements from former Securities Exchange Commission former chairman Arthur Levitt, and the statements in a recent report from Credit Suisse First Boston that I have referenced earlier in this testimony, other noteworthy sources include an article that appeared on the first page of the September 3, 2001 issue of the Financial Times. This article, entitled "HSBC shakes up research" begins by saying:

> HSBC is radically restructuring its investment research in a sign that banks are responding to criticism o the quality o equity analysis.
>
> The bank's analysts will be required to publish as many "sell" recommendations on stocks as "buys" and HSBC will invest its own money in its best research ideas. The move is in response to criticism that

investment banks' analysts are too positive about companies in the hope of generating lucrative corporate finance work.

Criticism has been particularly strong in the US, where many banks continued to talk up technology shares at the peak of the market. The banks are facing a wave of litigation from investors who lost money by following analysts' recommendations. Merrill Lynch recently paid $400,000 to a client to drop an action against Henry Blodget, its star internet analyst.

Banks have also been attacked by US regulators and politicians.

An article appeared in the November 18, 2001 edition of the New York Times, on the first page of the Sunday business section 3. This article, entitled "Telecom's Pied Piper: Whose Side Was He On?" is an article about Salomon Smith Barney telecommunications analyst Jack Benjamin Grubman, "... one of Wall Street's highest-paid analysts...". The article then says:

Anyone can make mistakes, but Mr. Grubman's cheerleading epitomizes the conflict-of-interest questions that have dogged Wall Street for two years: Even as he rallied clients of Salomon Smith Barney, a unit of **Citigroup**, to buy shares of untested telecommunications companies and to hold on to the shares as they lost almost all of their value, he was aggressively helping his firm win lucrative stock and bond deals from these same companies.

Since 1997, Salomon has taken in more investment banking fees from telecom companies than any other firm on the Street. Because of Mr. Grubman's power and prominence, and because his compensation is based in part on fees the company generated with his help, a part of those fees went to him.

Because of articles like these, others that have appeared over the years, and knowledge gained from personal experience, knowledgeable investors know that analysts forecasts have a strong tendency to be overly optimistic.

b) Implementation of Single-stage DCF

Q. HOW DID YOU IMPLEMENT THE SINGLE-STAGE OR CONSTANT GROWTH DCF IN THIS CASE?

A. I started by taking the current quarterly dividend rate for each company examined[6] and multiplying it by 4 to arrive at the current annual rate. This number was then converted to a dividend yield by dividing it by the stock price of each company. The stock price used was determined two different ways. One way was to take the actual stock price as of November 30, 2001. The second way was to take the average of he high and low stock price for the year ended November 30, 2001. Then, the dividend yield was increased by adding one-half the future expected growth rate. This upward adjustment to the dividend yield is necessary because the DCF formula specifies that the dividend yield to be used is equal to the dividends expected to be paid over the next year divided by the market price. After this adjustment to increase the dividend yield, the yield is equal to an estimate of dividends over the next year. To each dividend yield result, I added one-half the future expected growth rate. After the adjustment, the yield is equal to an estimate of dividends over the next year.[7]

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[6] Except for the water companies, the companies examined were selected by PSE&G.

[7] The complex version does not directly use dividend yields. Instead, it determines the present value of each dividend payment as a discounted cash flow.

Q. HOW DID YOU OBTAIN THE GROWTH RATES YOU USED IN THE CONSTANT GROWTH, OR k= D/P + G, VERSION OF THE DCF METHOD?

A. I derived the growth rates from the internal, or retention growth rate, or "b x r" method where "b" represents the future expected retention rate and "r" represents the future expected earned return on book equity. In addition to the "b x r" growth caused by the retention of earnings, I added an amount to recognize that growth is also caused by the sale of new common stock in excess of book value.

A critical requirement in the implementation of the simplified version of the DCF model is that the estimate of the future expected growth rate be a growth rate that is expected to be sustained, on average, for many years into the future. Stock analysts and textbooks recognize that generally the most accurate way to estimate the sustainable growth rate in a constant growth DCF method is to use what is usually referred to as the retention growth, or "b x r" method. In this approach, the future expected retention rate "b" is multiplied by the future expected return on book equity "r" in order to obtain a sustainable growth rate. Other methods to estimate future sustainable growth are sometimes used. However, those methods are generally more subjective, and even if used with extreme care, do not have the same potential for accuracy that a properly applied "b x r" estimate has. The reason for this is, in order to produce a meaningful result, those methods must be adjusted to eliminate factors which would otherwise cause them to include non-recurring influences on growth and/or

growth rates that are not equally representative of the future average expected growth in earnings, dividends, book value, and stock price.

The "b x r" method is best implemented by multiplying the *future expected* return on book equity by the retention rate that is consistent with both the future expected return on book equity and the dividend rate used to compute the dividend yield. Also, future sustainable growth should include an increment of growth to allow for the impact of sales of new common stock above book value.

The "b x r" growth rate computation, unless adjusted, does not account for sustainable growth that is caused by the purchase or sale of common stock above book value. Therefore, I modified the "b x r" growth rate to account for this additional growth factor. This additional growth factor, which is a standard part of the DCF computation, is sometimes referred to as the "VS" growth.

An accurate estimate for the future sustainable value of "r" (return on equity) when multiplied by a value for "b" (retention rate) that is consistent with the selection of the dividend rate and the expected return on book equity, produces a growth rate that is constant and sustainable.

Q. DO STOCK ANALYSTS USE THE "b x r" METHOD?

A. Yes. In the textbook, Investments, by Bodie, Kane and Marcus (Irwin, 1989) at page 478, expected growth rate of dividends is described as follows:

> How do stock analysts derive forecasts of *g*, the expected growth rate of dividends? Usually, they first assume a constant dividend payout ratio (that is, ratio of dividends to earnings), which implies that dividends will grow at the same rate as earnings. Then they try to relate the expected growth rate of earnings to the expected profitability of the firm's *future* investment opportunities.

The exact relationship is

$$g = b \times ROE$$

> where *b* is the proportion of the firm's earnings that is reinvested in the business, called the **plowback ratio** or the **earnings retention ratio,** and ROE is the rate of return (return on equity) on new investments. If all of the variables are specified correctly, [the] equation . . . is true by definition, . . .

Q. HOW DID YOU COMPUTE "g"?

A. As previously stated, I used the "b x ROE" method specified in the above textbook quote, although I refer to it in this testimony as the "b x r" method. In the above equation, ROE has the same meaning as "r". I recognized that investors have both historical and forecasted information available to determine the future return on book equity expected by investors. Forecasted data includes not only specific data for a company being evaluated, but also includes overall industry forecasted data. In addition to "b x r" growth, I included a factor to allow for growth caused by the sale of new common stock at a price other than book value.

I have reflected the impact on growth caused by the sale or repurchase of common stock in my recommended growth rate. The computations in support of this estimate are shown on Schedule JAR 8.

Q. THERE ARE COST OF CAPITAL WITNESSES WHO CLAIM THAT THE "b x r" METHOD IS SOMEHOW CIRCULAR. THIS IS BECAUSE THE FUTURE EARNED RETURN ON BOOK EQUITY THAT YOU USE TO QUANTIFY GROWTH IS USED TO DETERMINE THE COST OF EQUITY, AND THE

COST OF EQITY IS THEN USED TO DETERMINE THE FUTURE RETURN ON EQUITY THAT WILL BE EARNED. IS THIS CIRCULAR?

A. No. Those who erroneously claim that the method is circular confuse the definition of "r" and the definition of "k". While "r" is defined as the future return on **book** equity anticipated by investors, "k" is the cost of equity, or the return investors expect on the **market price** investment. Since the market price is determined based upon what investors are willing to pay for a stock, and the book value is based upon the net stockholders' investment in the company, "r" usually has a different value than "k". In fact, the proper application of the DCF method relates a specific stock market price to a specific expectation of future cash flows that is created by future earned return ("r") levels. For example, assume investors are willing to pay $10 a share for a company when the expectations are that the company will be able to earn 12% on its book equity in the future. If events would cause investors to re-evaluate the 12% return expectation, the stock price should be expected to change. If investors' expectations of the future return on book equity change from 12% to 10%, and there is no corresponding change in the cost of equity, the stock price would decline. The cost of equity, however, would not decline simply because an event might occur that would cause investors to lower their estimate for "r". The cost of equity is equal to the sum of both the dividend yield and growth. Investors' estimate of "r" influences the investors' estimate for growth. Changes in growth expectations cause investors to change the price they are willing to pay for stock. A change in the stock price can cause a change in the dividend yield that offsets

the change in expected growth. In this way, a higher dividend yield would offset by the lower expected growth rate and leave the cost of equity, "k", unchanged.

Determination of the future return on equity "r"

Q. HOW DID YOU DETERMINE THE VALUE OF "r" THAT YOU USED IN YOUR RETAINED EARNINGS GROWTH COMPUTATIONS?

A. My estimate for "r" for the comparative group of electric utilities is 13.0%. This 13.0% is conservative because it is the upper end of the 12.00% to 13.00% range for future expected return on book equity that I developed earlier in this section of my testimony. . The value of "r" that is required in the DCF formula is the one that is sustainable into the future for much longer than 5 years.

Determination of Retention Rate, "b"

Q. HOW HAVE YOU DETERMINED THE VALUE OF THE FUTURE EXPECTED RETENTION RATE "b" THAT YOU USED IN YOUR SIMPLIFIED DCF ANALYSIS?

A. I have recognized that the retention rate, "b", is merely the residual of the dividend rate, "D", and the future expected return on book equity, "r." Since, by definition, "b" is the fraction of earnings not paid out as a dividend, the only correct value to use for "b" is the one that is consistent with the quantification of the other variables when implementing the DCF method. The formula to determine "b" is:

b= 1- (D/E), where

b = retention rate

D = Dividend rate

E = Earnings rate

However, "E" is equal to "r" times the book value per share. Book value per share is a known amount, as is "E", consistent with the future expected value for "r", and the "D" used to compute dividend yield. Therefore, to maximize the accuracy of the DCF method, quantification of the value of "b" should be done in a manner that recognizes the interdependency between the value of "b" and the values for "r" and "D". I directly computed the value of "b" based upon the values of "D", and "r".

Q. WHAT RETENTION RATES DID YOU USE?

A. Based upon the above formula, I used a retention rate for application to the electric companies of 27.78% and 30.38%. See Schedule JAR 4, P.1.

c) Implementation of Multi-stage DCF

Q. HOW DID YOU IMPLEMENT THE MULTI-STAGE DCF METHOD?

A. The first stage of the model is based upon Value Line's estimates of dividends per share and earnings per share for 2001 through 2005[8] for the companies examined. Value Line does not show a specific earnings and dividend projection for every year from 2000 to 2005. Projections for years skipped by Value Line were made by extrapolation from the available data. When implementing this method, I mechanically used Value Line's projections for the period in which the projections were available.

I determined future earnings in the second stage of the non-constant DCF model by multiplying the future book value per share by the future expected earned return on book equity. For the purposes of this case, I used the same future expected return on book equity that I used in the simplified version of the DCF model.[9] Projected book value equals the beginning book value plus the current year's earnings minus the current year's dividends. Book value growth projections also include the effect of sales of new common stock. The projections in the second stage of the DCF model were made for 40 years into the future. Events longer than 40 years into the future have a minimal present value.[10]

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[8] The estimate for 2005 is shown by Value Line as its estimate from 2005-2006.

[9] For reasons explained in the discussion of the simplified version of the DCF method, I believe this provides the best estimate of future earnings. However, if the use of a varying array of future expected returns on book equity were supported by the facts, rather than a constant return, the same mathematical model would still be proper to use in determining the cost of equity.

[10] For example, a change in an assumption that the selling market-to-book would be 0.1 lower or higher than as of the time of purchase would introduce a potential inaccuracy in the indicated cost of equity of plus or minus about 25 basis points in a 30-year analysis, but a similar change in the market-to-book ratio expectation would introduce only plus or minus about 15 basis points in a 40 year

My projections have relied on a constant dividend payout ratio for the second stage[11]. The future constant dividend payout ratio was set equal to the payout ratio for 2001.

I derived the estimated future stock price from the projected book value using the same market-to-book ratio at the time of sale as exists today. The only cash outflow is the price paid for the stock. The non-constant version of the model uses both the spot stock price as of November 30, 2001, and the average stock price for the year ended November 30, 2001 to be representative of the price paid.

The retention rate used in the second-stage was set equal to the retention rate forecast by Value Line for 2001 of 41.33%. This is considerably higher than the 26.58% retention rate obtained by relating the $1.83 current actual dividend rate shown on Schedule JAR 3, P. 1 with the earnings per share earned in 2000 of $2.49 shown on Schedule JAR 3, P. 2. As shown on Schedule JAR 5, P. 1, Value Line forecasts the retention rate to increase to 47.39% by 2005. The large increase is the result of Value Line's unsustainably high forecast for an increase in earned return on equity. It is unlikely that investors expect such a large change in the retention rate. Investors probably expect the future retention rate to be reasonably in line with the retention rate

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analysis. If longer than 40 years were used, the result would be even less sensitive to the future market-to-book ratio expectation.

[11]As in the case of the future expected earned return on equity assumption, if there were evidence to support the use of varying payout ratios instead of a constant payout ratio, the same model could still be used to accurately quantify the cost of equity. Unlike the simplified DCF model, this model specifically accounts for the fact that a change in the payout ratio has an impact on the book value, and therefore has an impact on the earnings rate achieved in the future.

achieved in 2000. Nevertheless, to be conservative, I used the 41.33% retention rate forecast for 2001 as the sustainable retention rate in the second-stage. The complex, or multi-stage DCF produces a higher indicated cost of equity than the single stage method because the multi-stage method adopts without modification the optimistic earnings forecasts made by Value Line for 2001 through 2005.

As shown on Schedule JAR 5, P. 1-2, the complex, or non-constant version of the DCF model indicates a cost of equity between 9.87% and 10.36% for the comparative group of electric companies.

Q. WHAT COST OF EQUITY IS INDICATED BY THE IMPLEMENTATION OF THE DCF METHOD IN THIS CASE?

A. As shown on Schedule JAR 2, the cost of equity indicated by the DCF method was estimated to be between 8.86% and 10.36% for all of the examined electric companies.

3. Implementation of Risk Premium/CAPM Method

a) Introduction

Q. PLEASE EXPLAIN THE RISK PREMIUM/CAPM METHOD.

A. The risk premium/CAPM method estimates the cost of equity by analyzing the historic difference between the cost of equity and a related factor such as the rate of inflation or the cost of debt.

One critically important fact to understand when implementing the risk premium method is that risk premiums have declined in recent years. As mentioned earlier in this testimony, Federal Reserve Chairman Alan Greenspan, made a speech on October 14, 1999 entitled "Measuring Financial Risk in the Twenty-first Century". The text of the speech is available at http://www.bog.frb.fed.us/boarddocs/speeches/1999/19991014.htm. In the speech, Chairman Greenspan says:

> That equity risk premiums have generally declined during the past decade is not in dispute. What is at issue is how much of the decline reflects new, irreversible technologies, and what part is a consequence of a prolonged business expansion without a significant period of adjustment. The business expansion is, of course, reversible, whereas technological advancements presumably are not.

Q. IS CHAIRMAN GREENSPAN'S VIEW OF THE REDUCTION IN RISK PREMIUMS CONSISTENT WITH WHAT INVESTORS NOW GENERALLY EXPECT?

A. Yes. One good source to confirm that the financial community shares Chairman Greenspan's conclusion is an article that appeared in the April 5, 1999 issue of *Business Week*:

> The risk premium is the difference between the risk-free interest rate, usually the return on U.S. Treasury bills, and the return on a diversified stock portfolio. Over more than 70 years, the return to stocks averaged 11.2%, and T-bills, just 3.8%. The difference between the two returns, 7.4%, is the risk premium. Economists explain this extra return as an investors' reward for taking on the greater risk of owning stocks. **Most market watchers believe that in recent years, the premium has fallen to somewhere between 3% and 4% because of lower inflation and a long business upswing that makes corporate earnings less variable.**

[emphasis added]

On October 4, 2001, the previously referenced report from Credit Suisse First Boston concluded that the equity risk premium over treasury bonds is 3.7%, and the equity risk premium overBaa rated corporate bonds is now 1.9%.[12]

b) Inflation Risk Premium Method.

Q. HOW HAVE YOU APPLIED THE INFLATION PREMIUM METHOD?

A. I implemented the inflation premium method by adding investors' current expectation for inflation to the long-term rate earned by common stocks net of inflation. This result was modified, based upon beta, to obtain a result that was compatible with the risk of the average gas distribution utility.

[12] Weekly Insights, "Global Strategy Perspectives", October 4, 2001, Credit Suisse First Boston, page 55 and 61.

Q. WHAT IS THE BASIS FOR THE INFLATION PREMIUM METHOD?

A. A book entitled *Stocks for the Long Run*[13] examined the real returns achieved by common stocks from 1802 through 1997. The conclusion in the book is that equity returns in excess of the inflation rate have been very similar in all major sub-periods between 1802 and 1997, while the risk premium in between bonds and common stocks has been erratic. Page 11 of this book says:

> Despite extraordinary changes in the economic, social, and political environment over the past two centuries, stocks have yielded between 6.6 and 7.2 percent per year after inflation in all major subperiods.

The book then says on page 12:

> Note the extraordinary stability of the real return on stocks over all major subperiods: 7.0 percent per year from 1802-1870, 6.6 percent from 1871 through 1925, and 7.2 percent per year since 1926. Ever since World War II, during which all the inflation in the U.S. has experienced over the past two hundred years has occurred, the average real rate of return on stocks has been 7.5 percent per year. This is virtually identical to the previous 125 years, which saw no overall inflation. This remarkable stability of long-term real returns is a characteristic of mean reversion, a property of a variable to offset its short-term fluctuations so as to produce far more stable long-term returns.

Continuing on page 14, *Stocks for the Long Run* says:

> As stable as the long-term real returns have been for equities, the same cannot be said of fixed-income assets. Table 1-2 reports the nominal and real returns on both short-term and long-term bonds over the same time periods as in Table 1-1. The real returns on bills has dropped precipitously

[13] *Stocks for the Long Run* by Jeremy J. Siegel, Professor at Wharton. McGraw Hill, 1998. According to the book cover, Professor Siegel was "... hailed by Business Week as the top business school professor in the country...".

from 5.1 percent in the early part of the nineteenth century to a bare 0.6 percent since 1926, a return only slightly above inflation.

The real return on long-term bonds has shown a similar pattern. Bond returns fell from a generous 4.8 percent in the first sub period to 3.7 percent in the second, and then to only 2.0 percent in the third.

The book explains some of the reasons why bond returns have been especially unstable. Page 16 says:

> The stock collapse of the early 1930's caused a whole generation of investors to shun equities and invest in government bonds and newly-insured bank deposits, driving their return downward. Furthermore, the increase in the financial assets of the middle class, whose behavior towards risk was far more conservative than that of the wealthy of the nineteenth century, likely played a role in depressing bond and bill returns.
>
> Moreover, during World War II and the early postwar years, interest rates were kept low by the stated bond support policy of the Federal Reserve. Bondholders had bought these bonds because of the widespread predictions of depression after the war. This support policy was abandoned in 1951 because low interest rates fostered inflation. But interest rate controls, particularly on deposits, lasted much longer.

The book then provides a conclusion on page 16 that:

> Whatever the reason for the decline in the return on fixed-income assets over the past century, it is almost certain that the real returns on bonds will be higher in the future than they have been over the last 70 years. As a result of the inflation shock of the 1970's, bondholders have incorporated a significant inflation premium in the coupon on long-term bonds.

Q. IS IT POSSIBLE TO ACCURATELY QUANTIFY INVESTORS' CURRENT EXPECTATIONS FOR INFLATION?

A. Yes. It has recently become possible to analytically determine investor's expectations for inflation. The U.S. government has issued inflation-indexed treasury bonds. The total return received by investors in these bonds is a fixed interest rate plus an increment to the principal based upon the actual rate of

inflation that occurs over the life of the bond. These bonds pay a lower interest rate simply because investors know that in addition to the interest payments, they will receive the allowance for inflation as part of the increment to the principal. This is in contrast to conventional U.S. treasury bonds. The principal amount of a conventional bond does not change over the life of the bond. Therefore, whatever allowance for inflation investors believe they need can only be obtained through the interest payment. By comparing the interest rate on conventional U.S. treasury bonds with the interest rate on inflation-indexed U.S. treasury bonds, the future inflation rate anticipated by investors can be quantified.

Q. WHAT IS THE CURRENT INFLATION EXPECTATION OF INVESTORS?

A. As of early July 2001, the inflation expectation of investors was estimated to be about 2.25%. See Schedule JAR 9. This was obtained by observing that long-term inflation-indexed treasury securities were yielding 3.48%, while long-term non inflation-indexed treasury securities were yielding 5.63%. The difference between 5.63% and 3.48% is 2.15%. This result was rounded up to 2.25%. Adding this 2.25% inflation expectation to the 6.6% to 7.2% range produces an inflation risk premium indicated cost of equity of 8.85% to 9.45% for an equity investment of average risk. Then, to apply this result in this case, it is necessary to adjust the return down to account for the lower than market-average risk inherent in an investment in gas utility stocks.

The risk premium approach is based upon a premium over the inflation rate. I made a risk adjustment based upon the average beta of the comparative gas companies. The average beta of the gas distribution companies is 0.60. See Schedule JAR 3, P. 3. To make the adjustment, I used the yield on 90-day treasury bills because these short-term treasury bills have a beta of very close to

zero. The yield on 90-day treasury bills of 3.62% was subtracted from the 6.60% to 7.20% risk premium to arrive at a 1.80% to 2.16% equity risk premium over 90-day treasury bills. This range was then multiplied by the 0.60 beta to arrive at a risk adjusted equity premium of 1.18% to 1.42%. The difference between the unadjusted equity risk premium and the adjusted equity risk premium was then subtracted from the historic return net of inflation to arrive at an indicated inflation premium cost rate of 7.67% to 8.03%. The mid-point of this range is the risk premium/CAPM equity cost result of 7.85%. See Schedule JAR 9.

c) Debt Risk Premium Method

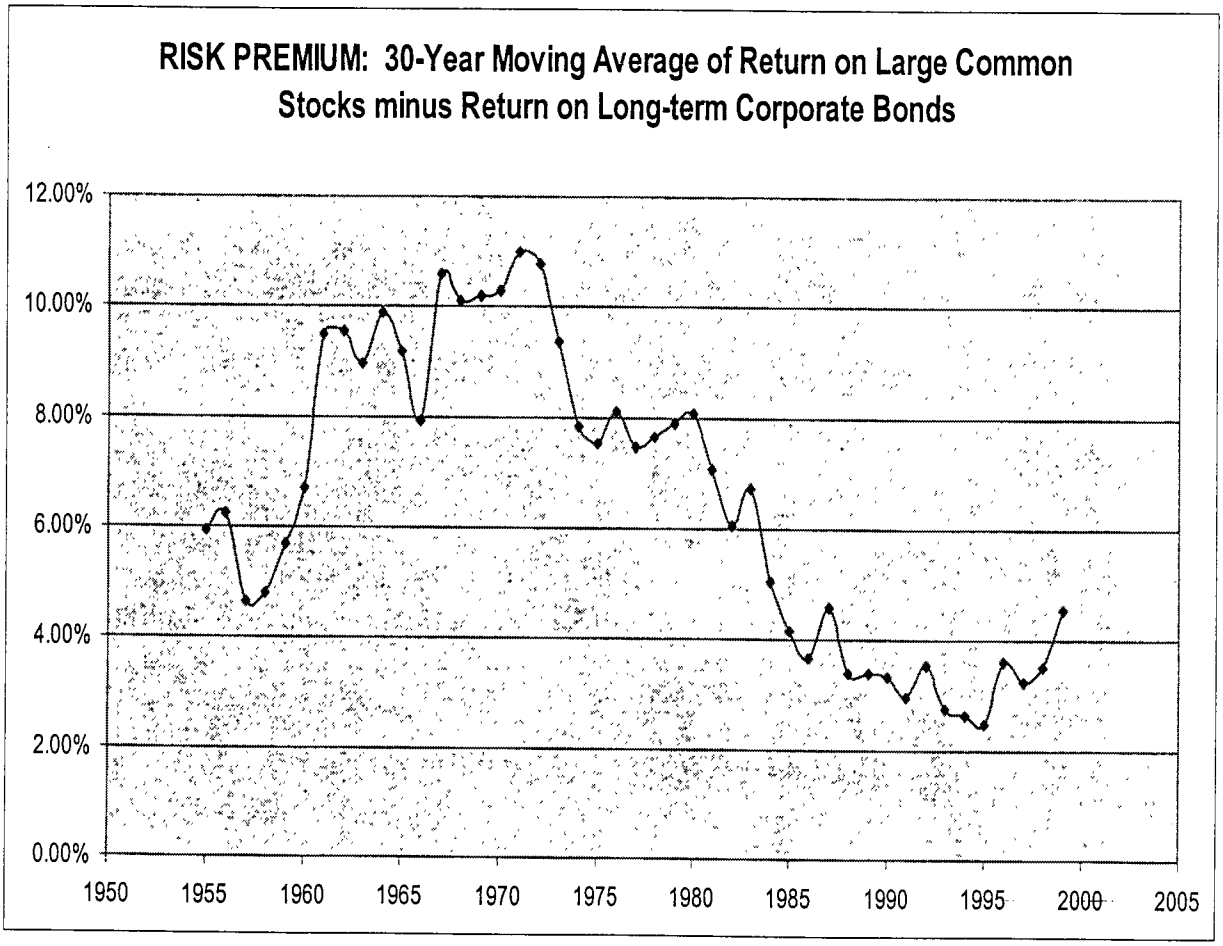
Q. HOW DID YOU DETERMINE THE COST OF EQUITY USING THE DEBT RISK PREMIUM METHOD?

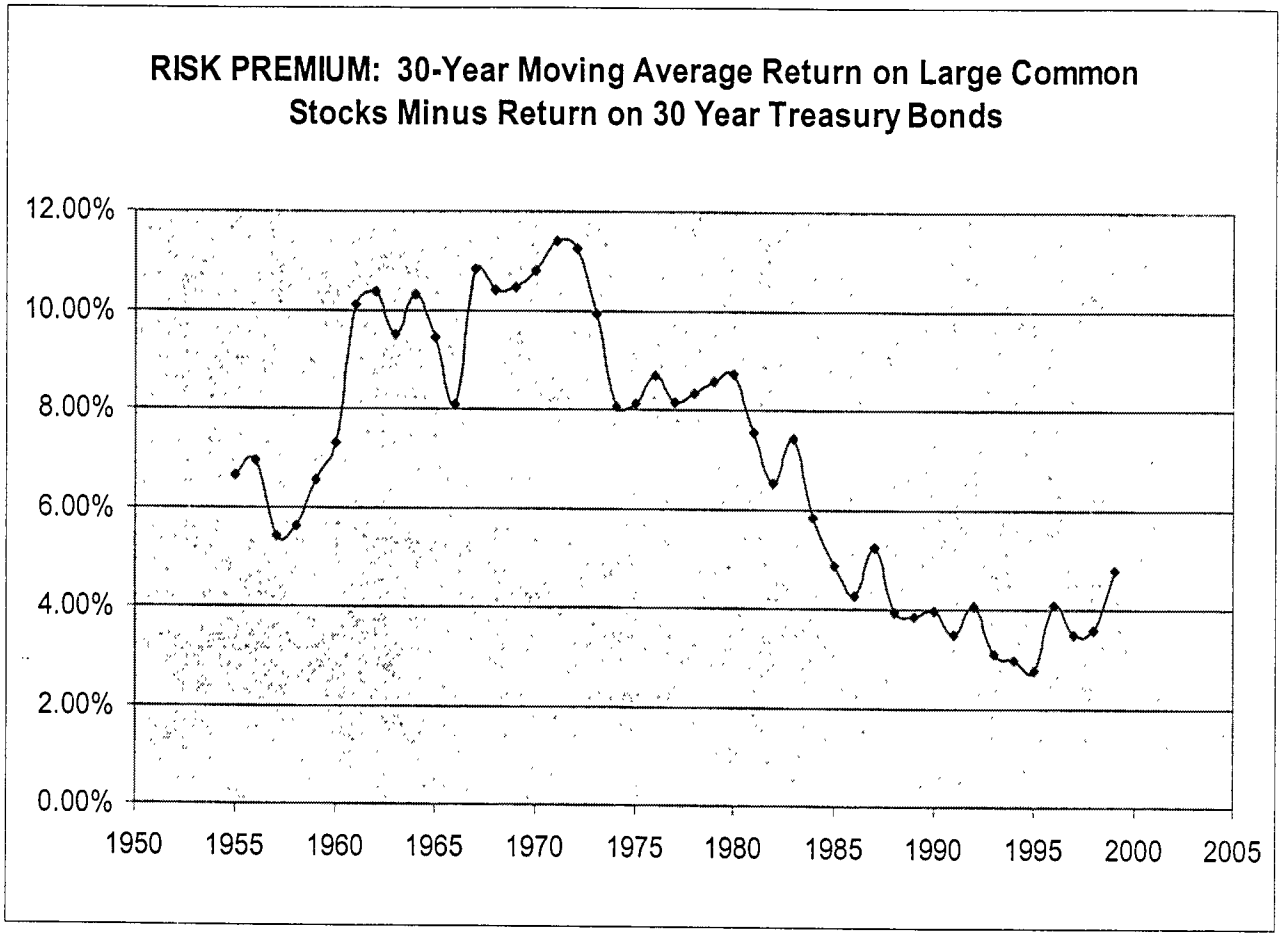
A. As shown on Schedule JAR 10, I separately determined the proper risk premium applicable to long-term treasury bonds, long-term corporate bonds, intermediate-term treasury bonds and short-term treasury bills. In this way, the debt risk premium method I present considers a wide array of data points across the yield curve. In this way, the results are less impacted by a temporary imbalance that may exist in the debt maturity "yield curve".

Q. EARLIER IN THIS SECTION OF YOUR TESTIMONY, YOU SHOWED THAT FEDERAL RESERVE CHAIRMAN GREENSPAN NOTED THAT THE FACT THAT EQUITY RISK PREMIUMS HAVE DECLINED "... IS NOT IN DISPUTE." YOU ALSO PROVIDED SOURCES FROM FINANCIAL LITERATURE CONCLUDING THAT THE RISK PREMIUM IS NOW LESS THAN 4%. DO YOU HAVE ANALYTICAL SUPPORT TO

SHOW THAT THE STATEMENTS BY CHAIRMAN GREENSPAN AND FROM THE OTHER SOURCES YOU HAVE QUOTED ARE CORRECT?

A. I examined the historic actual earned returns on common stocks and bonds from 1926 through 2000. But, rather than merely making one simplistic computation that examined the entire time period with only one return number over the entire period, I examined a 30-year moving average of the earned returns. 30 years is long enough to see if indeed there is a trend to the earned returns, but not so short as to be overly influenced by the natural volatility in earned returns that generally occurs over just a year or a few years. As shown in the following graphs, the decline in the risk premiums is persistent and undeniable.





An examination of the above graphs confirms that a risk premium over 30 year treasuries in the 3 to 4% range is appropriate. For my equity cost computations, I used the conservatively high estimate of 4.0% as the risk premium appropriate to add to U.S. treasuries when determining the cost of equity for an industrial company of average risk.. For applying the appropriate risk premium to interest rates other than U.S. treasuries, I determined the average historic risk spread between long-term treasuries and the other interest rate categories I examined. See Schedule JAR 10, P. 2. This 4% risk premium was increased or decreased as warranted by the historic data when applied to

each of the separate interest rate categories to which I applied the risk premium method.

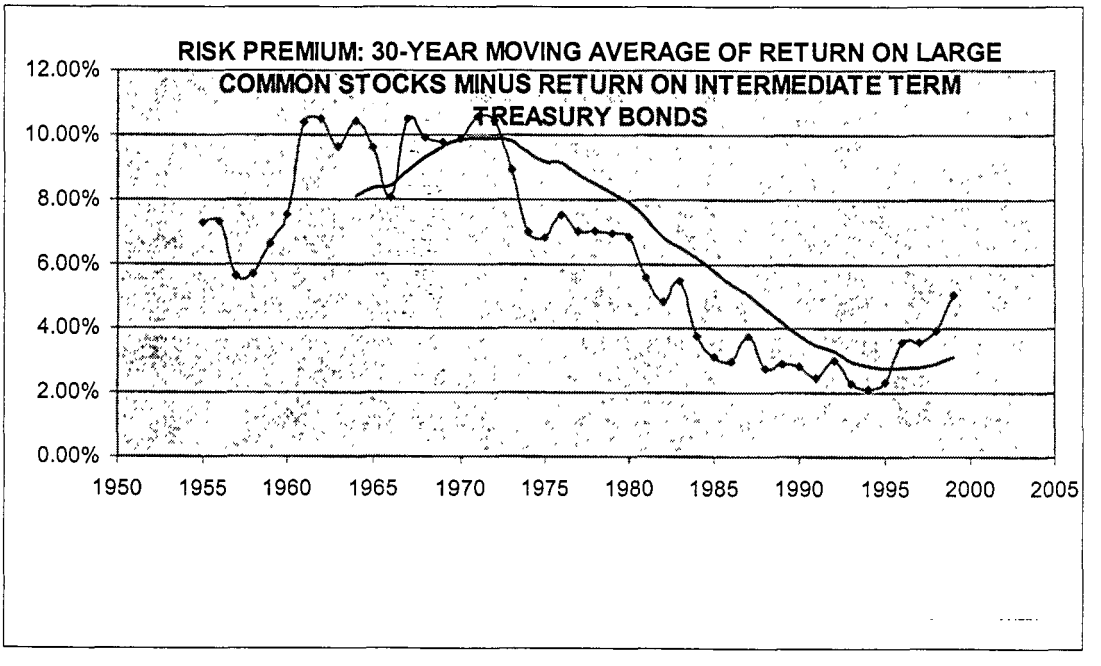
Q. WHY HAVE YOU CHOSEN 30 YEARS TO SHOW THE DOWNTREND IN THE RISK PREMIUM RATHER THAN A SHORTER TIME PERIOD SUCH AS 10 YEARS?

A. 10 years is far too short of a time period to be able to observe the actual risk premium based upon realized historic returns. The reason that realized returns over a short time are not helpful at quantifying the risk premium is as follows. If the equity risk premium declines, this means by definition that equity investors are willing to settle for a lower risk premium component of the total return they are demanding. If they are willing to settle for a lower return and if other things remain equal, this means that investors are willing to pay a higher stock price for the same future expected cash flow. What this means is that the initial reaction to a lowering of the equity risk premium is for the stock price to rise. A rise in the stock price results in a higher historic earned return at the same time the higher stock price means the investor would expect a lower future return. Unless enough years are used in the historic analysis to diminish the misleading impact of the initial response to a reduction in the risk premium, the historic earned returns will not be helpful. I am especially encouraged by the relative consistency of the trend in the lowering of the risk premium as shown in the 30-year data. This reinforces the likelihood that the risk premium has declined as Federal Reserve Chairman Greenspan and many others have observed.

Q. THE LAST DATA POINT IN THE 30-YEAR MOVING AVERAGE GRAPH YOU HAVE PROVIDED SHOWS AN INDICATION OF AN UP-TICK IN

THE INDICATED RISK PREMIUM IN THE LAST DATA POINT. DOES THAT INDICATE TO YOU THAT THE RISK PREMIUM MIGHT BE SHOWING AN UPTREND?

A. No. The up-tick merely represents the inclusion of 1999 results and the exclusion of 1999 results from the 30 year moving average. This happened because we now know that 1999 was the extreme "bubble" year for common stock prices in the U.S. The data source I relied upon to create the graph only contained historic return data through 1999, so I cannot yet provide a precise update to include data through 2000. However, it is now known that during 2000 and so far through 2001, the total return on bonds substantially exceeded the total return on common stocks enough so that the actual risk premium earned in 2000, and so far in 2001,by common stocks over bonds was negative. Based upon this conservatively low estimate of a NEGATIVE earned risk premium in 2000 and so far in 2001, an update of the above graphs will show that the 30-year moving average of the risk premium will decline towards the range established from the 30-year average of the prior years.



Q. ARE THERE REASONS WHY THE RISK PREMIUM HAS BEEN ON A MULTI-DECADE DECLINE?

A. Yes. One important reason is a lowering of the U.S. capital gains income tax rate. Investors are concerned about the total after-tax return earned. The majority of the return earned by an investor on a long-term bond (and in many cases all of the return earned by a long-term bond investor) is the interest income. Interest income is fully taxed at regular income tax rates. This is in contrast to an investor in common stocks. An investor in the average large common stock has received the majority of their total return in the form of stock price, or capital appreciation. Capital appreciation is not taxed at all until the stock is sold. Then, it is taxed at the long-term capital gains rate if the stock as been owned long enough to be eligible for such treatment. Currently, long-term capital gains are subject to a federal income tax of no more than 20%. This is a considerably lower rate on long-term capital gains than prevailed in prior decades.

Another important reason why the risk premium demanded by common stock investors versus bond investors has declined is because enough years have now passed since the Great Depression that a greater proportion of investors are more comfortable owning common stocks than was the case when the memory of the Great Depression was forefront in the minds of most investors.

Yet another factor is the proliferation of mutual funds. While it is debatable whether the popularity of mutual funds is proof that the risk premium has declined (because more investors are comfortable investing in common stock) or is the reason that the risk premium declined (because mutual fund marketing has increased the availability of investment funds for equity), it is nevertheless a relevant factor.

Q. WHAT COST OF EQUITY IS INDICATED BY THE IMPLEMENTATION OF THE RISK PREMIUM/CAPM METHOD IN THIS CASE?

A. As shown on Schedule JAR 2, the cost of equity indicated by the risk premium/CAPM method is approximately 8.90%.

VI. EVALUATION OF THE TESTIMONY OF MR. BENORE

A. Summary

Q. PLEASE SUMMARIZE THE TESTIMONY OF MR. BENORE.

A. Mr. Benore has recommended that Gulf Power be allowed a return on equity of "at least" 13.0%"[14]. He arrived at this recommendation based upon the DCF model, CAPM, and comparable earnings approaches. In both his DCF and CAPM approaches has made substantial errors in mathematics, and both financial and regulatory theory. His comparable earnings analysis is not an equity costing approach at all as it measures what returns are, not what returns should be.

1. **DCF Method.** Mr. Benore applied the DCF method to a group of electric companies he selected. He used the constant-growth, or D/P + g form of the DCF model. He estimated the value for "g" by using the estimates of various analysts of what earnings per share growth will be over the next five years. See Exhibit No. _____ (CAB-1). He did no testing of his growth rate numbers to determine if it is or is not proper to use in the constant-growth version of the DCF model. His DCF analysis resulted in an indicated cost of equity of 11.7%%. He then inflated this result up to 13.6% by making a "...transformation..." such that the return

on equity he recommended would not impact the company's stock price. See Exhibit No. ____(CAB-1), Schedule 7, page 16.

2. CAPM Method. Mr. Benore applies two CAPM methods, the historic approach and a projected version. In his historic approach Mr. Benore assumed that investors expect the same risk premium differential between common stocks and bonds as was achieved on average from 1926 through 1998. He quantified this difference by using an annual arithmetic average of the difference rather than a geometric, or compound return approach. In his projected version of the CAPM, he estimated the cost of equity based upon his DCF method that relies upon five-year analysts growth as a proxy for long-term sustainable growth.. Based upon 30-year treasury bond yield of 6.4%, Mr. Benore concluded that his CAPM method was indicating a cost of equity of 10.3% to 11.2% based upon his "historic tests", and was indicating 11.5% to 12.0% based upon his "projected tests". Then, just as in his DCF approach, he further inflated these results, in this case up to 11.4% to 13.3% to derive a return that was high enough to not impact the current stock price. See Exhibit No. ___(CAB-1), Schedule 9, pages 15 and 16.

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[14] Exhibit No. CAB (1) ____ Schedule 1a.

Q. PLEASE SUMMARIZE YOUR REACTION TO MR. BENORE'S TESTIMONY.

A. Mr. Benore's DCF method result is highly unreliable because he uses a non-constant growth rate in a formula that only produces a meaningful cost of equity indication if there is a constant growth rate. Using a non-constant growth in earnings per share overstates the cost of equity by double-counting the future cash flow benefits anticipated by investors and by making the implied erroneous assumption that the return on book equity will continue to increase on average indefinitely into the future. A major reason Mr. Benore's risk premium overstates the cost of equity is because it uses the upwardly-biased arithmetic average of historic returns to quantify investors future expected returns on equity. Merely by switching to the geometric mean would have lowered his risk premium result by a full 2.0%. Even if his risk premium result is lowered by this 2.0%, it is still too high because it ignores the general downtrend in risk premiums that has been occurring over the last three or four decades.

B. DCF Method

Q. PLEASE COMMENT ON MR. BENORE'S DCF APPROACH.

A. What Mr. Benore calls his DCF method is really a round-about series of computations that, once distilled to their true essence, do not compute the cost of equity. Mr. Benore starts out with what he calls a "standard" DCF method, which is the familiar dividend

yield plus growth approach. This would result in the cost of equity demanded by investors if the dividend yield and growth rate were properly determined. Leaving aside for the moment the very serious mathematical and conceptual errors he made in applying the "standard DCF", he totally destroys what the DCF model is intended to do when he converts his "standard DCF" result into what he calls his "End-Result DCF".

A properly applied "standard" DCF determines the cost of equity demanded by investors by relating the current stock price to the future cash flows expected by investors. Assuming the "standard DCF" is properly applied, the result of that computation tells the Commission what profit allowance is necessary to offer to investors whether the stock price of a company is too high or too low. In other words, the "standard DCF" that properly quantifies divided yield and growth results in a cost of equity determination that is accurate irrespective of the stock price or the market-to-book ratio. It is why the discovery of the DCF method by John Barr Williams back in 1937 is considered to be an extremely important development in the history of finance. It is the characteristic of the DCF method to be able to estimate the cost of equity irrespective of the relationship between the market price and the book value that gives it wide-spread academic appeal and why it is by far the most commonly used approach to determining the cost of equity in utility ratemaking proceedings. Other, more simplified and older techniques such as the earnings/price method were used. However, a problem with the earnings/price method is that the earnings/price result loses meaning as the price deviates from book value. It is the DCF approach that fixed this problem.

The "end result DCF" adjustment Mr. Benore has added to the DCF approach totally destroys the method. Its harm to the DCF method is conceptually equivalent to the harm done to a fresh pizza if it were whammed by an 18 wheeler going 90 miles an hour and wrapped around the front tire for the next 153 miles. The carefully constructed, time tested DCF method result loses all meaning in the context of a cost of equity computation if, as Mr. Benore has done, the integrity of the relationship between the actual stock price and the cash flows that give rise to that stock price are violated. When Mr. Benore says that the DCF method is only correct when the market-to-book ratio is 1.0, he has it completely backwards. The DCF method was specifically designed to be able to accurately estimate the cost of equity irrespective of what is the market-to-book ratio. Mr. Benore's "end result DCF" is an attempt to negate all of the progress in securities analysis that has occurred since John Barr Williams discovery back in 1937.

The "End-Result DCF" is not a DCF method at all. Instead, it is a direct attempt on the part of Mr. Benore to set the return on equity high enough so that the current market price would be maintained whether or not that market price is the result of either excessive or deficient earnings prospects. The erroneous nature of this "End-Result DCF" is perhaps best illustrated by noting that by this end-result method, the higher the stock price of a utility company, the higher the return on equity he would recommend. In other words, Mr. Benore's approach to the DCF method provides an answer that is exactly the opposite of reality. It is a well-known principle of finance that, other things being equal, as the price of a stock or bond goes up, the cost of

capital goes down. Any credible method to determining the cost of equity should recognize this basic principle.

Mr. Benore's End-Result DCF fails the end result test. Assume, hypothetically, that a utility commission made a mistake by allowing a utility company a return on equity higher than the cost of equity. These excessive earnings would make the stock price of the utility company rise because new investors would be anxious to share in the windfall profits that would be expected to result from the commission's error. Under generally accepted regulatory principles, what should happen when a commission sets the return on equity too high is that in the next rate case, the commission should evaluate market data to recognize that the allowed return was too high. Once the excessive return was identified, the need to balance the interests of ratepayers and investors should lead the commission to lower the allowed return to the level that reflects current market conditions. However, under Mr. Benore's approach, this re-adjustment process would be negated. Under his scheme, once the stock price of a utility company gets too high (whether it is because of a commission mistake or a drop in capital cost rates causing the expected return on book equity to be higher than the cost of equity), he advises the Commission to keep the stock price at its excessive level. His method effectively treats the allowed return as a one-way ratchet. It could go up, but it could not come down since any lowering of the allowed return could result in a decline in the stock price.

I strongly disagree, and more importantly, in the landmark *Hope Natural Gas* decision the U.S. Supreme Court disagrees with Mr. Benore. If utility stock prices have increased because investors have come to expect utility companies to be able to

habitually earn higher returns on book equity than investors are demanding on their market price investment, regulators should not permit those excessive earnings to continue into the next rate setting time period. In order to balance the interests of investors and ratepayers, regulators must be willing to take action that could change earnings expectations. This balancing of interests means that at time, the Board might need to take action to increase the earned return on equity when the financial marketplace communicates it is dissatisfied with the earnings prospects on book. Also, there are times when the Board needs to take action to decrease the allowed return on equity when the financial marketplace communicates investors are more than happy with earnings prospects on book.

Q. HAS MR. BENORE TAKEN THE INCONSISTENT POSITION OF **RECOMMENDING AN INCREASE** TO THE RETURN ON BOOK EQUITY IN THOSE TIMES WHEN EXPECTATIONS FOR EARNINGS ON BOOK ARE LESS THAN THE RETURN ON MARKET DEMANDED BY INVESTORS AND **NOT RECOMMENDING A DECREASE** TO THE RETURN ON BOOK EQUITY IN THOSE TIMES WHEN THE EARNINGS ON BOOK ARE MORE THAN THE RETURN ON MARKET DEMANDED BY INVESTORS?

A. Yes. Between 1979 and 1981, market prices for many electric utilities were below the accounting book value. Mr. Benore's track record of inconsistently recommending increases to earnings expectations when the market to book ratio is below 1 and not believing in decreases to earnings expectations when the market to book is above 1 could be shown by referencing Mr. Benore's older testimony.

Q. PLEASE RESPOND TO MR. BENORE'S DECISION TO NOT SIMPLY USE THE COST OF EQUITY INDICATED BY THE "STANDARD" DCF MODEL.

A. By rejecting the cost of equity indicated by the "standard" DCF method, Mr. Benore is rejecting the concept of setting the cost of equity equal to the investors' required return on market. His conclusion to reject the DCF method is based upon circular reasoning. It is circular because he believes that once excessive earnings have caused the stock price of a utility to increase, earnings must be kept at that excessive level just to avoid a price decline. He believes this should be the case even if that price decline would only return the stock price back to the level that would have been proper if the excessive profits had never been earned. Later in this section of the testimony, I will provide examples of regulatory agencies and state courts that are consistent with these *Hope* case principles.

Q. PLEASE CITE SPECIFIC EXAMPLES OF WHERE MR. BENORE USES THE STOCK PRICE HE BELIEVES SHOULD BE ACHIEVED AS THE STARTING POINT OF HIS ANALYSIS RATHER THAN THE END PRODUCT AS REQUIRED IN THE HOPE CASE?

A. On page 13 of his testimony, Mr. Benore presents an example where he assumes the cost of equity demanded by investors is 10%, but the return they expect on book is 13.0%. In this example, he incorrectly argues that the 13.0% return on book should be allowed even though investors are demanding a cost of equity of 10% simply because the stock price for the company has already been bid up by investors to above book

value. Note that if the stock price had not been bid up, then his example would not have indicated a higher allowed return on equity than the cost of equity. Therefore, Mr. Benore's procedures for determining the cost of equity results in the determination of an allowed return on equity that is above the cost of equity simply for the purpose of maintaining a stock price at its current level. This example creates the illogical conclusion that the higher the stock price, the higher the return he would have a commission allow. This results in the improper use of the current stock price as the starting point for what should be achieved rather than computing the cost of equity as a means of determining what the stock price should be. Such an approach is the circular reasoning found improper in the *Hope* case because it would do nothing but maintain whatever the current market price already is, whether or not that stock price might be too high or too low.

The source of Mr. Benore's confusion is that he has juxtaposed the expected return on book equity with the cost of equity demanded by investors. Consider how superfluous regulation would become if Mr. Benore's beliefs were to be adopted. Assume a utility company is allowed a cost of equity of 15% back in a time when inflation and interest rates are very high. Then, assume the utility company begins to earn 15% on its book equity just as inflation and interest rates decline significantly. The logical response on the part of those investors who expected the 15% earned return to continue would be to bid up the stock price. The proper response on the part of regulators would be to recognize that when capital cost rates decline, it is necessary to lower the cost of equity even though lowering the cost of equity below 15% would cause rational investors to reconsider the stock price they are willing to pay. A

lowering of the 15% prior equity cost allowance down to current equity cost levels would cause the stock price to return closer to the level it was prior to the time the utility company's stock rose due to the high earnings level. Yet, Mr. Benore's philosophy would never provide a mechanism for the allowed return on equity to be lowered irrespective of what happens to the cost of equity. Once investors expectations for excessive profits is built into the stock price, he would have the allowed return on equity set high enough so that the excess profits and therefore the resulting high stock price would be maintained. His process would protect stockholders from a potential decline in stock prices, but would fail to balance the interests of investors and ratepayers because it would force ratepayers to support a return on equity that was higher than the current cost of equity.

Q. YOU HAVE STATED THAT THE U.S. SUPREME COURT HAS ALREADY ESTABLISHED THAT IT IS NOT PROPER TO MERELY SET THE COST OF EQUITY AT A LEVEL HIGH ENOUGH TO MAINTAIN A CURRENT STOCK PRICE. PLEASE ELABORATE.

A. In contrast to Mr. Benore, the *Hope* case correctly explains that the cost of equity is used to influence what the stock price should be. *Hope* recognizes that it is improper to start with the current stock price and improperly concluding that the return on equity should be set at the level to produce earnings at the level required to maintain that current stock price. As is stated in the *Hope* case, a cost of equity that would result in a lower stock price can be a reasonable conclusion because:

> The fixing of prices, like other applications of the police power, may reduce the value of the property which is being regulated. But the fact that the value is reduced does not mean that the regulation is invalid. ... It does, however, indicate that "fair value" is the end product of the process of rate-making not the starting point as the Circuit Court of Appeals held. The heart of the matter is that rates cannot be made to depend upon "fair value" when the value of the going enterprise depends on earnings under whatever rates may be anticipated.
>
> ...
>
> We recently stated that the meaning of the word "value" is to be gathered "from the purpose for which a valuation is being made. Thus the question in a valuation for rate making is how much a utility will be allowed to earn.

Hope Decision (302 US,601)

Q. ARE THERE EXAMPLES OF REGULATORY DECISIONS WHICH SUPPORT THE CONTINUED USE OF THE *HOPE* STANDARD?

A. Yes. I already provided examples of this earlier in my testimony in quotes from the FERC and the FCC.

Furthermore, in response to the theory behind a comparable earnings analysis approach sponsored by Illinois Bell, the Illinois Appeals Court responded to an Illinois Bell position that was very similar to the argument relied upon by Mr. Benore in this case to reject the use of the DCF method. The decision by the Appeals Court stated the following:

> Phillips' methodology is premised on the assumption that sophisticated investors will not purchase Bell equity unless they expect to enjoy a ROE approaching the ROE on book value. Therefore, under Phillips' regime, sophisticated investors refuse to pay the premium – i.e. the inflation of the market value of a stock in relation to its book value -- to invest in certain companies. The unavoidable implication of this assumption is that a fair ROE at least approximates the ROE on book value.
>
> ... In an unregulated capital market there is no guarantee that the ROE on the market value of their stocks will pace the ROE on book value. Likewise, in Bell's regulated capital market, the Commission has no duty to

ensure that an investor's ROE keeps pace with the ROE on book value. See Illinois Bell Telephone Co. v. Federal Communications Comm'n (1993), 988 F 2d 1254, 1260-62 (Illinois Bell Telephone Co. III)

Illinois Bell Telephone Company v. Illinois Commerce Commission , Appeal No. 2—94—1272 v Citizens Utility Board Appeal No. 2—94-1440, filed July 17, 1996.

Q. YOU HAVE EXPLAINED THAT IN THIS CASE, MR. BENORE HAS TESTIFIED THAT THE DCF METHOD UNDERSTATES THE COST OF EQUITY BECAUSE THE MARKET-TO-BOOK IS ABOVE 1. DID COMPANY WITNESSES SUCH AS MR. BENORE CONSISTENTLY APPLY THIS SAME ARGUMENT ABOUT THE DCF METHOD WHEN THE MARKET-TO-BOOK RATIO WAS BELOW 1?

A. No. When market-to-book ratios were below 1.0, they often argued that the allowed return on equity had to increase to get the market price up to book value. As an example of an argument that was typical during the time that market-to-book ratios were below 1.0, following is a quote from page 26 of a decision in a Minnesota Power and Light Company rate proceeding, Docket No. E-015/GR-80-76. This Minnesota Power and Light case was filed by the company on February 1, 1980.

The Company's case rested on a constitutional mandate for determining the proper cost of equity, as set forth by the U.S. Supreme Court in Bluefield and Hope.

The Company stated its market to book ratio was relevant to all three of the Bluefield criteria. A market to book ratio below one would not necessarily violate Bluefield, but the persistence of that ratio below one over a sustained period of time would mean that the market return determinations were being incorrectly made. MP&L believed that any

method used to measure cost of equity which presupposes the continuation of substandard earnings would produce confiscation.

Note that in this Minnesota Power and Light case, Mr. Benore is not troubled by a market to book ratio that is too high even though when the market to book has been sustained at a level above one "...presupposes the continuation of ..." excessive earnings.

Q. WHY DID YOU HAPPEN TO CHOOSE THE ABOVE QUOTE FROM THE MINNESOTA POWER AND LIGHT CASE?

A. Both Mr. Benore and I appeared in the above quoted Minnesota Power and Light case. While I did not retain a copy of his testimony from that case, I did keep a copy of the decision. Upon reviewing the decision, I encountered the above quote.

Q. PLEASE ELABORATE ON YOUR PROBLEMS WITH MR. BENORE'S IMPLEMENTATION OF THE "STANDARD" DCF METHOD.

A. The largest problem with his standard DCF method is that he used a constant-growth version of the DCF model, but used a proxy for long-term growth based solely on earnings per share growth forecast for the five years from 2000 to 2005. This growth rate that he used is the same kind of growth rate that the previously quoted Credit Suisse First Boston report categorized as "... unusually unreliable...", explaining that they are not only on average too high, but are even

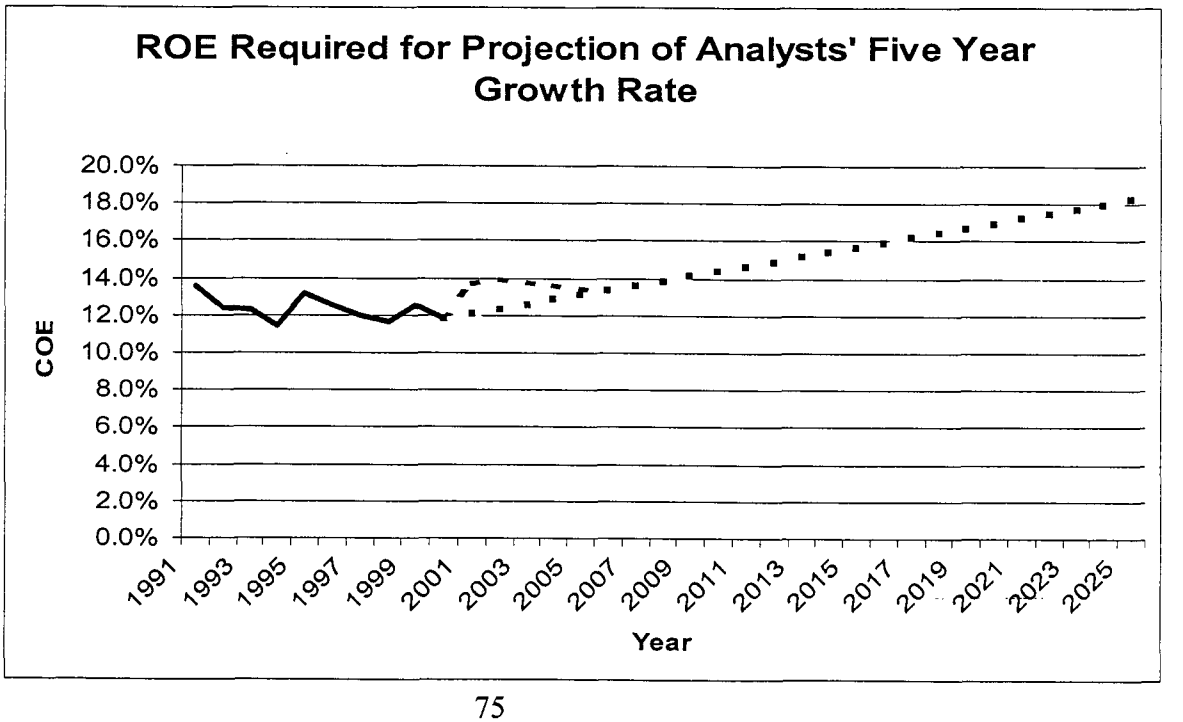
more exaggerated than usual because of the one-time impact to earnings caused by a reduction in interest rates and taxes.[15] The earnings per share consensus growth rate is an unreasonable proxy for long-term sustainable growth. For example, he did not contrast the earned return on equity in the most recently completed fiscal year or the earned return on equity consistent with the earnings per share forecast to test if the earned return on equity is changing over the five years he examined. Therefore, he does not know if the book value is forecast to be growing more or less rapidly than earnings per share over the five years covered by the analysts' consensus forecast.

The numbers required to make the necessary comparison of the historic base period return on book equity and the forecasted return on book equity are shown on my Schedule JAR 3, Page 4. The comparison shows that while the earned return on book equity for the comparative group of electric utilities chosen by Mr. Benore was 11.8% in 2000, the forecasted return on equity that is consistent with the analysts' consensus earnings per share growth rate is 13.3%, in five years. For the return on equity to increase, this means that earnings must be forecast to grow more rapidly than book value – a result that makes it a mathematical mistake to use the analysts' consensus five-year growth rate as a proxy for long-term growth in the DCF model.

[15] *Weekly Insights*, "Global Strategy Perspectives", Credit Suisse First Boston, October 4, 2001, pages 55-64.

Q. EARLIER IN YOUR TESTIMONY, YOU PRESENTED A GRAPH THAT SHOWED HISTORIC AND PROJECTED EARNED RETURNS ON BOOK EQUITY. CAN YOU PRESENT A GRAPH THAT SHOWS THE RETURNS ON BOOK EQUITY CONSISTENT WITH MR. BENORE'S SELECTED GROWTH RATE METHOD?

A. Yes. By using a five-year analysts' growth rate projection as a proxy for long-term sustainable growth, Mr. Benore is effectively projecting an continued increase in the earned return on equity. This is because the growth rate he used in his DCF analysis includes both the sustainable growth caused by the anticipated retention of earnings and the non-recurring increase in earnings per share caused by the forecasted increase in the return on book equity. Following is the historic actual return on book equity achieved by Mr. Benore's comparative electric companies and the return on book equity they would have to achieve in the future if it were correct to merely project five-year growth indefinitely into the future.



Since no knowledgeable investor could possibly expect the return on book equity to continue to increase indefinitely into the future, no knowledgeable investors know better than to use an analysts five year growth rate in a constant growth DCF formula as doing so would assure that the constant growth method dramatically overstates the cost of equity.

In addition to the earnings per share growth rate and book value per share growth rate failing the constant-growth requirement of the form of the DCF model selected by Mr. Benore because of the inherent problem of earnings per share being expected to grow at a different rate than book value per share (a characteristic that is confirmed by the forecasted increase in return on book equity[16]), a comparison of earnings per share forecasted growth rate and the dividends per share growth rate also shows that Mr. Benore was wrong to use the five-year earnings per share forecasted growth rate as a proxy for sustainable growth in the DCF model. The fact that there is a material difference in the forecasted rate of growth for earnings and for dividends makes it all the more mathematically erroneous to use the five-year earnings per share growth rate as a proxy for long-term growth in the version of the DCF formula that requires an expectation of the same constant growth rate for earnings, dividends, book value, and stock price. My Schedule JAR 6 shows that the dividends per share growth rate forecast by Value Line from 2000 to 2005 is a compound annual rate of

[16] The definition of return on book equity is earnings per share divided by book value per share. Therefore, it is a mathematical fact that the return on book equity would remain constant if and only if earnings per share and book value per share were growing at the same rate. If earnings per share is

1.25%. This growth rate is considerably lower than the analysts' consensus earnings per share growth rate over the same period. If dividends are growing less rapidly than earnings, it means the lower relative dividend and resultant lower dividend yield is expected to decline at the same time that earnings per share growth accelerates[17]. The constant-growth formula is inaccurate and will materially overstate the cost of equity under such conditions because the constant-growth DCF's cost of equity valuation assumes that the dividend yield will remain at the higher rate prevailing at the beginning of the projection period. If investors expect dividends to grow less rapidly than earnings, and if they expect the stock price to grow as rapidly as earnings, then they also expect the dividend yield to decline. This expected decline in the dividend yield causes the constant-growth approach to overstate the cost of equity by an amount related to the expected decline in the divided yield. If the dividend yield in the future will decline, causing investors to loose a portion of the cash flow that was accounted for in the constant growth DCF model. Any time the DCF model overstates a future anticipated cash flow, this fact will create an upward bias in the DCF model.

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growing more rapidly than book value per share, then the return on book equity has to increase as a simple matter of mathematics.

[17] In this case, dividends are still expected to grow. They are just expected to grow at a much slower rate than earnings. This means that if earnings growth is a proxy for stock price growth, then a lower growth rate for dividends than for stock price has to result in a decline in the dividend yield. If stock price is not expected to grow as rapidly as earnings, then the dividend yield would not have to decline, but a stock price growth lower than the expected earnings growth would only make it even more improper to use the earnings per share consensus growth rate as a proxy for long-term growth in the DCF model.

Q. PLEASE SUMMARIZE YOUR COMMENTS ON THE USE OF THE DCF METHOD.

A. I have shown that Mr. Benore's approach to the DCF method contains many substantive errors in mathematics and financial theory. The principles he relied upon to formulate his method have been rejected by the U. S. Supreme Court, FERC, the FCC, and most recently the Appeals Court in Illinois. Therefore, the Commission should give no weight to his DCF approach.

C. Capital Asset Pricing Model

Q. PLEASE EXPLAIN HOW MR. BENORE APPLIES THE CAPM METHOD

A. Mr. Benore mentions his risk premium method on page 27 of his testimony, and provides supporting documentation for the approach on his Schedule 9. He applies his risk premium method two different ways. One way he compares the actual annual average returns achieved by the S&P 500 with the average returns achieved on long-term bonds. Then, he reduced that result based upon the beta of electric companies. He added this differential to a 6.4% yield on U.S. treasury bonds to obtain an indicated cost of equity of 10.4%. He also presents an alternative approach to the CAPM method in which he adds another 0.9% based upon an empirical study he attributes to Dr. Roger Morin who, while not a witness in this proceeding, is a frequent cost of capital witness for utility companies. See page 15 of Mr. Benore's Schedule 9.

Mr. Benore presents yet another method that he calls a CAPM method. In this additioal method he quantifies the cost of equity by using the DCF method as applied to the S&P 500. When he applies this DCF method, he repeats the same mistake he used when applying the DCF method to utility companies – he used a short-term five-year projected growth rate in earnings per share as a proxy for long-term sustainable growth. Additionally, Mr. Benore implemented a CAPM analysis by starting with Value Line's expectation of total return to investors.

Just as with his DCF method, Mr. Benore inflates the result of his CAPM analysis based upon his "End-Result" adjustment.

The very serious problems with Mr. Benore's CAPM method are numerous:

1) The continued use of the flawed end-result adjustment.

2) The repetition of the errors in his standard DCF

3) The use of arithmetic historic growth rather than compounded, or geometric growth

4) The assumption that risk premiums today are the same as they were in the past.

5) The mistake of treating 30-year treasury bonds as if they were a risk-free investment.

Q. IS THE END RESULT UPWARD ADJUSTMENT TO THE CAPM METHOD ANY MORE APPROPRIATE THAN THE SIMILAR UPWARD ADJUSTMENT MR. BENORE HAS PROPOSED WITH HIS DCF METHOD?

A. No. Just as with the DCF method, making the upward adjustment to the DCF method, the effect of the upward adjustment is to transform the cost of equity computation into the return on equity required to keep a stock price unchanged. In other words, Mr. Benore's upward adjustment has the effect of assuming that whatever earnings are currently expected by investors are exactly proper irrespective of whatever relationship those earnings expectations have with the earnings level that investors demand. Just as was the case with the DCF method, because the method uses the stock price as the ending point rather than the starting point, it is a direct and specific violation of the U.S. Supreme Court's findings in the Hope Natural Gas case.

Q. HOW DID MR. BENORE REPEAT THE ERRORS FROM HIS DCF METHOD WHEN IMPLEMENTING HIS CAPM METHOD?

A. In one of the versions of his CAPM method, Mr. Benore quantified the cost of equity for the S&P 500 by adding an analysts five-year growth rate for the S&P 500 to the current dividend yield of the S&P 500. See Exhibit No. ___(CAB-1), Schedule 9, Page 12. The DCF result he so obtained was 16.8%. This 16.8% is so obviously too high that it serves as a helpful illustrator of the inherent problem with using a five-year earnings per share growth rate as a proxy for sustainable growth. The five-year growth rates are growth rates from the most recently completed historic year to a period five years into the future. Since last year was a year in which earnings were impacted by the onset of the current recession, earnings in the base year were atypically low. This fact, combined

with the well-established upward bias that exists in analysts forecasts results in a growth rate that is substantially higher than any rational investor expects.

Q. YOU SAID THAT ONE PROBLEM WITH MR. BENORE'S IMPLEMENTATION OF THE RISK PREMIUM METHOD WAS HIS USE OF THE ARITHMETIC AVERAGE TO ARRIVE AT THE HISTORIC ACTUAL RETURNS HE USED TO DERIVE THE RETURN DIFFERENCE BETWEEN BONDS AND STOCK. PLEASE EXPLAIN.

A. As will be explained in detail later in this section of my testimony, textbooks, the U.S. Securities and Exchange Commission (SEC), and Value Line have all recognized that the only proper way to measure long-term historic actual earned returns is to use the geometric mean. The arithmetic mean is specifically identified by several sources as a method that will specifically result in an answer that is upwardly biased. The arithmetic average of returns is computed by taking the percentage change over a specific period [18], and computing an arithmetic average of those returns. The geometric average is computed by determining the compound annual average return from the beginning of the period to the end of the period being examined.

[18] Frequently arithmetic average returns are computed based upon annual results. However, arithmetic returns could be computed using any other time – daily, weekly, monthly, every two years, every 5 years, etc. and then converting that result to an average annual return.

Q. PLEASE EXPLAIN WHY YOU HAVE CONCLUDED IT IS IMPROPER TO DEVELOP A RISK PREMIUM BASED UPON HISTORIC ARITHMETIC RETURNS?

A. Arithmetic average returns overstate the actual returns received by investors. The more variable historic growth rates have been, the more the method exaggerates actual growth rates. Arithmetic average returns ignore the impact of compound interest. For example, if a company were to have a stock price of $10.00 in the beginning of the first year of the measurement period and a $5.00 stock price at the end of the first year, an arithmetic average approach would conclude that the return earned by the investor would be a loss of 50% [($5-$10)/($10)]. If, in the second year, the stock price returned to $10.00, then the arithmetic average would compute a gain of 100% in the second year [($10-$5)/($5)]. The arithmetic average approach would naively average the 50% loss in the first year with the 100% gain in the second year to arrive at the conclusion that the total return received by the investor over this two year period would be 25% per year [(-50% +100%)/2 years]. In other words, the arithmetic average approach is so inaccurate that it would conclude the average annual return over this two-year period was 25% per year even though the stock price started at $10.00 and ended at $10.00. The geometric average would not make such an error. It would only consider the compound annual return from the beginning $10.00 to the ending $10.00, and correctly determine that the annual average of the total returns was not 25%, but was zero.

In order to protect investors from misleading data, the SEC requires mutual funds to report historic returns by using the geometric average only. The arithmetic average is not permitted. The geometric average, or SEC method, has the compelling advantage of providing a true representation of the performance that would have actually been achieved by an investor who made an investment at the beginning of a period and re-invested dividends at market prices prevailing at the time the dividends were paid.

Q. DOES THE FINANCIAL COMMUNITY COMPUTE HISTORIC ACTUAL ACHIEVED RETURNS BASED UPON ARITHMETIC MEANS OR GEOMETRIC MEANS?

A. The financial community (as represented by articles from *The Wall Street Journal* and from *Business Week* that are specifically quoted in the "Implementation of Risk Premium/CAPM Method" section of this testimony) refers to geometric averages when evaluating historic returns. Additionally, page 92 of the August 16, 1999 issue of *Fortune* magazine refers to the return that is equal to the geometric mean from Ibbotson Associates as "...the oft-quoted calculation..." of historic actual returns on common stocks. The article does not even mention the number that is equal to the historic arithmetic return.

Q. DO FINANCIAL TEXTBOOKS SUPPORT THE USE OF THE GEOMETRIC AVERAGE FOR COMPUTING HISTORIC ACTUAL RETURNS?

A. Yes. For example, the textbook *Valuation. Measuring and Managing the Value of Companies*, by Copeland, Koller, and Murrin of McKinsey & Co. , John Wiley & Sons, 1994, in a description of how to use the Ibbotson Associates data states the following on pages 261-262:

> We use a geometric average of rates of return because arithmetic averages are biased by the measurement period. An arithmetic average estimates the rates of return by taking a simple average of the single period rates of return. Suppose you buy a share of a nondividend-paying stock for $50. After one year the stock is worth $100. After two years the stock falls to $50 once again. The first period return is 100 percent; the second period return is -50 percent. The arithmetic average return is 25 percent [(100 percent - 50 percent)/2]. The geometric average is zero. (The geometric average is the compound rate of return that equates the beginning and ending value.) **We believe that the geometric average represents a better estimate of investors' expected returns over long periods of time.**

(Emphasis added)

Similarly, in another textbook discussion that specifically addresses the use of the Ibbotson data, *Financial Market Rates & Flows*, by James C. Van Horne, Prentice Hall, 1990, states the following on page 80:

> The geometric mean is a geometric average of annual returns, whereas the arithmetic mean is an arithmetic average. For cumulative wealth changes over long sweeps of time, the geometric mean is the appropriate measure.

The textbook *Investments* by Nancy L. Jacob and R. Richardson Pettit, Irwin, 1988, puts it well when it says:

> The existence of uncertainty as reflected in a distribution of possible values makes the **expected value**, or arithmetic average rate of return, a misleading and biased representation of the wealth increments which will be generated from multiperiod investment opportunities.

> The average *annual* rate of wealth accumulation over the investment period, termed the **average annual geometric rate of return**, correctly measures the average annual accumulation to wealth when multiple periods are involved.

(Emphasis is contained in the original)

Q.HAS VALUE LINE SAID ANYTHING REGARDING THE USE OF AN ARITHMETIC AVERAGE OR A GEOMETRIC AVERAGE?

A. Yes. On May 9, 1997, Value Line issued a report entitled "The Differences in Averaging". This report was contained on pages 6844-6845 of the "Value Line Selection & Opinion" portion of its weekly mailings to subscribers. This report says that:

> (t)he arithmetic average has an upward bias, though it is the simplest to calculate. The geometric average does not have any bias, and thus is the best to use when compounding (over a number of years) is involved.

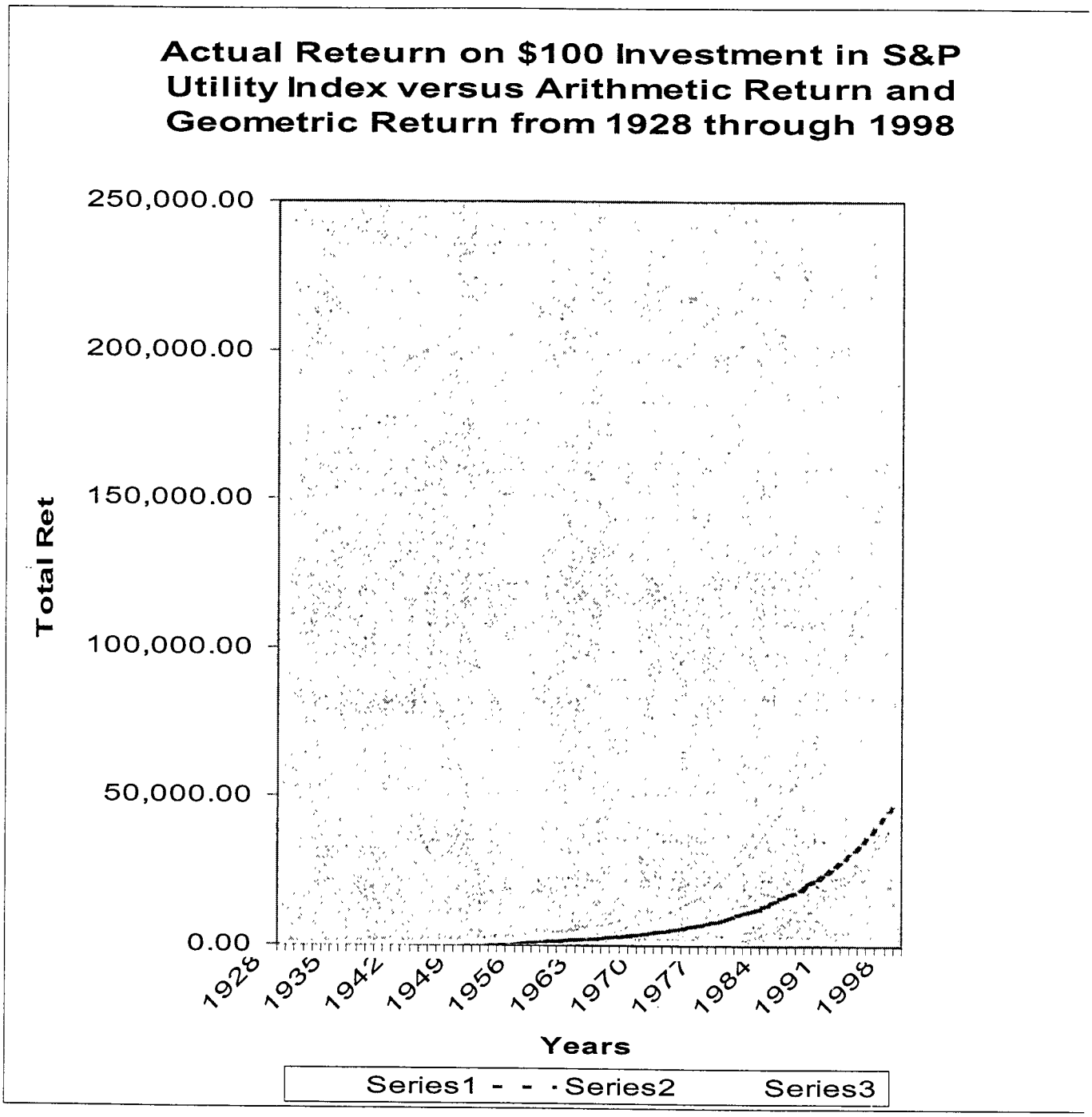
The Value Line report then goes on to provide examples that show why the arithmetic average overstates the achieved returns while the geometric average produces the correct result.

Ibbotson Associates has also said that it is the geometric average that is "... the correct average to compare with a bond yield..."[19].

[19] Page 75 of Stocks, Bonds, Bills, and Inflation 1986 Yearbook.

Q. HAVE YOU COMPARED GRAPHICALLY THE CAPITAL APPRECIATION GROWTH RATE USING THE ARITHMETIC AVERAGE METHOD WITH THE CAPITAL APPRECIATION GROWTH RATE THAT IS OBTAINED USING THE SEC METHOD?

A. Yes. In the following graph I show the actual movement of the S&P Utility index from 1928 through 1998. I also show how the index would have behaved on a year-by-year basis using the average growth obtained from the SEC method and using the arithmetic average historic growth rate methodology. The graph illustrates that arithmetic average calculation of historic actual returns deviates at an ever-increasing rate over time from the actual S&P Utility I ndex, overstating the total return from 1928-1998 by almost 400%. By contrast, the historic actual returns computed using the SEC method is a dramatically more reasonable track of the growth of the S&P utility over time and thus is a better measure of historic actual return rates realized by investors. In the following table, Series 1 is the actual return on the S&P Utilities Index, Series 2 is the geometric return on the S&P Utilities Index and Series 3 is the arithmetic return.


Actual Reteurn on $100 Investment in S&P Utility Index versus Arithmetic Return and Geometric Return from 1928 through 1998
250,000.00
200,000.00
150,000.00
100,000.00
50,000.00
0.00
Total Ret
1928
1935
1942
1949
1956
1963
1970
1977
1984
1991
1998
Years
Series1
Series2
Series3

In the above chart, the top line shows that if $100 had been invested in public utility common stocks in 1928 through 1998 and had earned the arithmetic return, the $100 would have grown to about $200,000. The lower irregular line shows what actually would have happened to a real $100 investment if it had been invested in public utility common stocks. As shown on the graph, the $100 investment would have actually grown to about $50,000. While the increase from $100 to $50,000 is a very sizeable return, it is far less than the $200,000 return that would have been achieved if the arithmetic return methodology had been achieved. The smooth line that ends at the same place as the actual return line is the ongoing value of $100 invested in 1928 that grew at the geometric return rate. Note that the $100 invested at the geometric return rate is, by 1998, exactly equal to the actual return. Therefore, the geometric return accurately measures the actual return that was achieved from 1928 through 1998, but the arithmetic average return exaggerates the actual return by 3 times.

Q. HOW MUCH HIGHER IS THE RISK PREMIUM DIFFERENCE BASED UPON AN ARITHMETIC AVERAGE THAN IT IS BASED UPON A GEOMETRIC AVERAGE?

A. From 1928 to 1998, the arithmetic average method produced an indicated risk premium that was about 1.90% higher for public utility stocks versus public utility bonds than the risk premium indicated by using the SEC, or geometric average method. The arithmetic median method produced a 1.85% higher risk premium than is indicated by using the SEC, or geometric average method.

Q. DOES THE FACT THAT THE ABOVE ANALYSIS YOU HAVE SHOWN IS BASED UPON HISTORIC DATA BUT THE PURPOSE OF THE COST OF EQUITY COMPUTATION IS FORWARD-LOOKING CHANGE THE APPROPRIATENESS OF THE USE OF THE GEOMETRIC AVERAGE?

A. No. While I have seen some witnesses argue that while the geometric average is proper for measuring returns earned historically, the arithmetic average should be used to project the future, such an argument defies logic. If it were correct that the geometric approach were proper for measuring historic returns, but the arithmetic average were proper for measuring projected returns, this line of thinking would result in the absurd conclusion that at the same time investors expect to earn at the higher arithmetic rate over the next ten years, once the ten years has passed, these same investors expect that they will look back and have earned the lower geometric average return. The truth is that as they look back at history, to the extent the historical performance is a guide as to what returns will be earned in the future, it is the geometric average not the arithmetic average, that measures the sustainable returns that investors expect to receive over the next five, ten, or fifteen years.

Q. HAVE RISK PREMIUMS BEEN STABLE OVER THE YEARS SO THAT INVESTORS COULD EXPECT THE FUTURE RISK PREMIUM TO BE EQUAL TO THE HISTORIC RISK PREMIUM ACHIEVED IN AGGREGATE SINCE 1926?

A. No. As I have shown earlier in this testimony, there is compelling evidence that risk premiums have declined.

Q. YOU SAID THAT ONE OF THE PROBLEMS WITH MR. BENORE'S IMPLEMENTAITON OF THE CAPM METHOD IS THAT HE ASSUMED THE RISK PREMIUM IS THE SAME TODAY AS IT WAS ON AVERGE SINCE 1926. PLEASE SHOW WHY THAT IS A PROBLEM.

A. The graphs I have shown earlier in this testimony show that there has been a persistent, dramatic, and undeniable reduction in the equity risk premium that began in about 1970 and leveled off at a new, much lower level in about 1985. As stated earlier in this testimony, my observation of a lower equity risk premium is consistent with what Federal Reserve Chairman Greenspan found to be a fact that is not even in dispute.

The reason Mr. Benore failed to detect the downtrend in the risk premium is because he relied upon an invalid approach for testing to see whether or not a drop in the equity risk premium had occurred. He merely regressed the difference in the earned return on an equity investment against the earned return on a bond investment in each year against time. The reason his approach found

no trend is because the difference between the earned return on stocks and the earned return on bonds in any one year is not an indicator of investors expectations for that year. The results are so hugely variable that they only begin to take on any meaning when the results are cumulated over enough years to smooth out the random "noise". Mr. Benore's statistical method did nothing to smooth out this noise, so the result he got is irrelevant.

Q. ARE LONG-TERM TREASURY BONDS RISK FREE?

A. Absolutely not. The market price of long-term treasury bonds fluctuate substantially in price as long-term interest rates change. For example, it would be risky for an investor who was planning to use his or her money to purchase a house in 3 months to invest all of that money in 30 year treasury bonds. If interest rates should happen to rise substantially over the 3 months, the investor would receive less for the bond than he or she paid for that bond, and would therefore no longer have sufficient funds to purchase the house. Because a 30 year treasury bond is not risk free, it does not have the zero beta that would be consistent with a true risk free investment. It could be acceptable to use a 30-year treasury bond in the CAPM formula, but only if the beta term is changed from the simple "B" used by Mr. Benore to the B_1 - B_2 term that I have shown above.

Q. DID MR. BENORE DETERMINE THE BETA OF A 30 YEAR TREASURY BOND TO CONFIRM IF AN INVESTMENT IN A 30 YEAR TREASURY

BOND IS OR IS NOT RISK FREE WITHIN THE CONTEXT OF A CAPM MODEL?

A. No. Instead, he incorrectly assumed that the beta of a long-term treasury bond is zero. An investment in long-term treasury bonds contains risk because the market price of long-term treasury bonds change with changes in interest rates, and will change substantially if long-term interest rates change substantially. This is in sharp contrast to the market price of a short-term treasury bill which encounters very little change in market price specifically because an investor can always reinvest the funds at prevailing market interest rates. In order to try and fit his erroneous view of the CAPM method into his invalid formulation of the method, for purposes of evaluating risk of a bond investment, he has inappropriately ignored the market volatility definition of risk and changed it to the predictability of interest yield. Among the many problems with Mr. Benore's thinking on this matter is that a 30-year treasury bond is not risk free. This is because even though the interest yield may be fixed for 30 years, the purchasing power of the interest payments and the purchasing power of the principal payment at the end of the 30 years is *anything but* risk free. For example, if inflation over the next 30 years is 2% per year, then in current dollars, the purchasing power of a $1,000 treasury bond is $552.10. Alternatively, if inflation should average 5% over the next 30 years, the purchasing power of that same $1,000 principal payment on the 30-year government bond is only $231.40. Therefore, when Mr. Benore makes the erroneous statement that there is no investment risk in a 30-year U.S.

treasury bond, his statement is as silly as if he said that an investor is indifferent to receiving $231.40 or $552.10.

Because Mr. Benore has incorrectly used the yield on a long-term treasury bond as a proxy for a risk free investment, he has understated the downward adjustment that should be made to the S&P 500 equity return to arrive at the return applicable to Gulf Power.

Q. YOU HAVE IDENTIFIED NUMEOURS SERIOUS PROBLEMS WITH MR. BENORE'S CAPM METHOD. YET, A REVIEW OF HIS SCHEDULE 9, PAGE 15 SHOWS THAT IF THE 10.3% TO 11.2% RESULT HE OBTAINED FROM HIS HISTORICAL RISK PREMIUM METHOD WERE UPDATED TO REFLECT THE CURRENT INTEREST RATE ON LONG-TERM TREASURIES OF ABOUT 5.4%, IT WOULD PRODUCE AN INDICATED COST OF EQUITY OF BETWEEN 9.3% AND 10.2%. THIS IS A CLOSER RESULT TO YOUR RECOMMENDED 10.0%COST OF EQUITY THAN THE RESULT YOU OBTAINED FROM YOUR RISK PREMIUM/CAPM ANALYSIS. PLEASE RESPOND.

A. Even a properly applied historic risk premium analysis that corrects for changes in long-term trends in the risk premium is based upon a premise that there is some meaningful relationship between historic risk premiums and current risk premiums. These are unusual times. The U.S. is in its first recession in many years. Both the Federal Reserve has responded by lowering interest rates and the U.S. government has implemented tax relief to stimulate the economy. The

combination of the recession and the response taken by the Federal Reserve has caused the current risk premium to be substantially different from what can best be determined by an accurate analysis of history. In the current environment, this causes a properly applied historically based equity risk premium method to understate the cost of equity. That temporary understatement is currently offset by the overstatement that is permanently caused by using the annual arithmetic averaging technique proposed by Mr. Benore. Therefore, just as in the old saying that even a broken clock is accurate twice a day, in the current environment the 9.9% mid-point of the 9.4% to 10.3% that is derived from Mr. Benore's updated result from his historical CAPM tests does produce an acceptable result. But, just like the broken clock, his historical CAPM approach is wrong far more often than it is correct.

E. COMPARABLE EARNINGS ANALYSIS

Q. PLEASE EXPLAIN THE COMPARABLE EARNINGS METHOD PRESENTED BY MR. BENORE.

A. Mr. Benore implemented the comparable earnings method merely by examining the return on book equity forecast by Value Line for each of his comparative electric companies and merely setting the "cost of equity" to that average. See his Schedule 10, page 6.

Q. IS THIS METHOD VALID?

A. No. Ms. Benore has attempted to determine the cost of equity that would be demanded by investors on the market price of a company comparable to Gulf Power by comparing it to the actual and projected returns on book equity of a selection of industrial companies. Leaving aside the overly optimistic return on equity expectation in Value Line's projection, the method is still seriously flawed. The method simply considered the returns on book equity that were achieved, and are expected to be achieved by Value Line in the next 3 to 5 years. **The earned return on book equity is an entirely different concept than the cost of equity.** Investors buy and sell stock at the market price, not the book value. If investors feel that the return on book is less than they can earn on a comparable investment elsewhere, then they bid the price of the stock down until the point where the return on market is equal to the return expectation acceptable to investors. Conversely, if the return on book is higher than comparable risk returns they can earn elsewhere, then the price of the stock is bid up to the point where the return on market is lower than the return on book.

Because the comparable earnings method only looks at return expectations without any input from investors on the adequacy of those returns, the method is hopelessly circular.

Q. MR. BENORE GIVES REASONS WHY HE IS IN FAVOR OF THE COMPARABLE EARNINGS METHOD ON PAGES 3-6 OF HIS SCHEDULE 10. PLEASE RESPOND.

A. Mr. Benore says that the comparable earnings method is the most widely used approach after the DCF model. From my experience, that is inaccurate. Out of the hundreds of cases in which I have testified, I do not recall even one in which a commission stated that it gave any weight to a method that merely assumes that the future expected return on equity is somehow equal to the cost of equity.

Mr. Benore claims that the comparable earnings method is supported by U.S. Supreme Court decisions. I disagree. Mr. Benore is taking concepts out of context. To reach this conclusion, he must ignore capital attraction standards, and numerous other concepts expressed in the decisions.

Mr. Benore says that the comparable earnings method is an apples to apples method because it determines the book return on common stock equity of comparable risk electric companies. Mr. Benore's critical error is that he has forgotten the capital attraction standard. In order for a return on book equity allowance to be reasonable, a company must be able to attract new capital. New capital is raised at a price approximately equal to market price, not book value. Therefore, it is the return rate on market, not the return rate on book that determines whether or not the company can attract new capital on reasonable terms. If the return is higher than necessary, then the stock price is bid up above book value. If the return is lower than adequate, then investors bid the stock price down below book value. Absent input from investors through consideration of the market price, the return on book says nothing about whether or not a company can raise new capital on reasonable terms. A simple, but correct analogy would be with that of a thermostat. The job of a thermostat is to tell the heating or

cooling system whether or not it should adjust the room temperature. If a room is too warm, it turns on the air conditioner. If it is too cool, it turns on the heat. Yet, if the thermostat were to use an approach analogous to Mr. Benore's comparable earnings test, it would look at the room temperature and say the room temperature is what the room temperature should be and it would never ever turn on the heat or the air conditioning.

Mr. Benore says that the comparable earnings method is easy to understand and simple to implement. Anyone who truly understands the method would never implement it because it does not measure the cost of equity. It is not simple to implement because the result is totally dependent upon the companies selected, as it depends merely on their projected returns on equity, and is not dependent upon important factors such as relative risk. By the simple to implement comparable earnings method, the cost of equity to a company going bankrupt would be zero, since companies going bankrupt are not expected to be producing any earnings at all in the future.

Mr. Benore says that the comparable earnings method "... avoids the problem of over, or under, rewarding investors when prices and book value are materially different from unity...". It does not avoid the problem at all, it merely pretends that the problem does not exist. The truth is that in order to responsibly find the cost of equity it is necessary to determine what investors are demanding. To do this, it is important to recognize that investors are more than happy with earnings prospects when the stock price is above book value and find earnings prospects inadequate when stock prices are below book value. All that ignoring the problem

as Mr. Benore as done accomplishes is that it makes his comparable earnings analysis invalid.

Mr. Benore says that the comparable earnings method "... acknowledges the linkage between the return on common stock equity and the growth rate in the DCF model...". He provides no basis for this statement, but my response is that his statement is 100% opposite from the truth. The comparable earnings method totally ignores any linkage between the growth rate investors expect to achieve on their stock investment and the cost of equity.

Mr. Benore says that the comparable earnings method moves from market based models to book based models. It does do this, just as a thermostat that was willing to determine that whatever the room temperature is is what the room temperature should be. Such a approach would be simple and inexpensive. One could do without not only any mechanical thermostat, but could eliminate the heating and cooling system also. The problem is it would not work at all. Neither does the comparable earnings method.

D. FINANCING COSTS

Q. MR. BENORE HAS PROPOSED THE ADDITION OF 0.2% FOR FINANCING COSTS. IS THIS CORRECT?

A. No. He has exaggerated these costs, and failed to note that when utility stock prices are above book value, any financing costs that might be incurred are more than offset by the accretion to book value that occurs.

The FERC, in its generic rulemaking proceedings from several years ago, found that financing costs were only two basis points.[20] Adjusting for such a small amount is beyond rounding error.

Q. CAN YOU PRESENT AN ANALYSIS TO SHOW THAT MR. BENORE'S REQUESTED ALLOWANCE FOR FINANCING COSTS MUST BE EXCESSIVE?

A. Yes. According to page 2 of Schedule D-1 of the MFR's, Gulf Power has requested a capital structure containing $491,919,000 of common equity. If the return on this equity were increased by Mr. Benore's requested 0.20% per year, this would increase the after-tax return on that $492 million by $984,000 per year ($492 million times 0.20%). At the average rate of increase in equity of 0.4% per year (per Schedule JAR8), at the present level of common equity outstanding, this would amount to an average issuance of $2 million per year. Financing costs averaging $984,000 per year if related to the average actual average annual issuance of $2 million per year would effectively be financing costs equal to almost 50% of the amount of new equity raised. Therefore, just as was concluded by the FERC, the appropriate financing cost allowance should be much less than the 0.2% used by Mr. Benore. In fact, the financing cost, when computed at the correct level, becomes so small that the amount is lost in rounding errors.

E. CONCLUSIONS

Q. PLEASE SUMMARIZE YOUR CONCLUSIONS.

[20] Generic Determination of Rate of Return on Common Equity for Public Utilities, January 29, 1988, Federal Register/ Vo. 53, No. 24/ Friday, February 5, 1988/Rules and Regulations, P. 3357.

A. Mr. Benore has overstated the cost of equity by applying the constant growth version of the DCF model based upon a non-constant growth rate indicators, and applied his risk premium approach in ways that exaggerate the cost of equity for reasons that I have identified above. As a result of these mistakes, his 13.2% result is considerably higher than the cost of equity. My recommended 9.10% cost of equity is based upon both a constant growth DCF approach that computes a constant growth rate that is required for the model result to be meaningful. My recommendation is also based upon a non-constant growth version of the DCF model that properly quantifies the cost of equity impact based upon future expected growth rates that are not necessarily constant in the future. Additionally, my recommendation is based upon risk premium/CAPM approaches that rely upon the unbiased geometric average approach to quantify historic returns, and considers the lowering of risk premiums that has been occurring.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

Appendix A- Testifying Experience of James A. Rothschild

TESTIFYING EXPERIENCE OF JAMES A. ROTHSCHILD THROUGH NOVEMBER 30, 2001

ALABAMA

Continental Telephone of the South; Docket No. 17968, Rate of Return, January, 1981

ARIZONA

Southwest Gas Corporation; Rate of Return, Docket No. U-1551-92-253, March, 1993
Sun City West Utilities; Accounting, January, 1985

CONNECTICUT

Connecticut American Water Company; Docket No. 800614, Rate of Return, September, 1980
Connecticut American Water Company, Docket No. 95-12-15, Rate of Return, February, 1996
Connecticut Light & Power Company; Docket No. 85-10-22, Accounting and Rate of Return, February, 1986
Connecticut Light & Power Company; Docket No. 88-04-28, Gas Divestiture, August, 1988
Connecticut Light & Power Company, Docket No. 97-05-12, Rate of Return, September, 1997
Connecticut Light & Power Company, Docket No. 98-01-02, Rate of Return, July, 1998
Connecticut Light & Power Company, Docket No. 99-02-05, Rate of Return, April, 1999
Connecticut Light & Power Company, Docket No. 99-03-36, Rate of Return, July, 1999
Connecticut Light & Power Company, Docket No. 98-10-08 RE 4, Financial Issues, September 2000
Connecticut Light & Power Company, Docket No. 00-05-01, Financial Issues, September, 2000
Connecticut Light & Power Company, Docket No. 01-07-02, Capital Structure, August, 2001
Connecticut Natural Gas; Docket No. 780812, Accounting and Rate of Return, March, 1979
Connecticut Natural Gas; Docket No. 830101, Rate of Return, March, 1983
Connecticut Natural Gas; Docket No. 87-01-03, Rate of Return, March, 1987
Connecticut Natural Gas, Docket No. 95-02-07, Rate of Return, June, 1995
Connecticut Natural Gas, Docket No. 99-09-03, Rate of Return, January, 2000
Southern Connecticut Gas, Docket No. 97-12-21, Rate of Return, May, 1998
Southern Connecticut Gas, Docket No. 99-04-18, Rate of Return, September, 1999

United Illuminating Company; Docket No. 89-08-11:ES:BBM, Financial Integrity and Financial Projections, November, 1989.
United Illuminating Company; Docket No. 99-02-04, Rate of Return, April, 1999
United Illuminating Company, Docket No. 99-03-35, Rate of Return, July, 1999

DELAWARE

Artesian Water Company, Inc.; Rate of Return, December, 1986
Artesian Water Company, Inc.; Docket No. 87-3, Rate of Return, August, 1987
Diamond State Telephone Company; Docket No. 82-32, Rate of Return, November, 1982
Diamond State Telephone Company; Docket No. 83-12, Rate of Return, October, 1983
Wilmington Suburban Water Company; Rate of Return Report, September, 1986
Wilmington Suburban Water Company; Docket No. 86-25, Rate of Return, February, 1987

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Koch Gateway Pipeline Company, Docket No. RP97-373-000 Cost of Capital, December, 1997
Maine Yankee Atomic Power Company, Docket No. EL93-22-000, Cost of Capital, July, 1993
New England Power Company; CWIP, February, 1984. Rate of return.

New England Power Company; Docket No.ER88-630-000 & Docket No. ER88-631-000, Rate of Return, April, 1989
New England Power Company; Docket Nos. ER89-582-000 and ER89-596-000, Rate of Return, January, 1990
New England Power Company: Docket Nos. ER91-565-000, ER91-566-000 , FASB 106, March, 1992. Rate of Return.
Philadelphia Electric Company - Conowingo; Docket No. EL-80-557/588, July, 1983. Rate of Return.
Ocean State Power Company, Ocean States II Power Company, Docket No. ER94-998-000 and ER94-999-000, Rate of Return, July, 1994.
Ocean State Power Company, Ocean States II Power Company, Docket No ER 95-533-001 and Docket No. ER-530-001, Rate of Return, June, 1995 and again in October, 1995.
Ocean State Power Company, Ocean State II Power Company, Docket No. ER96-1211-000 and ER96-1212-000, Rate of Return, March, 1996.
Southern Natural Gas, Docket No. RP93-15-000. Rate of Return, August, 1993, and revised testimony December, 1994.
Transco, Docket No. RP95-197-000, Phase I, August, 1995. Rate of Return.

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FLORIDA

Alltel of Florida; Docket No. 850064-TL, Accounting, September, 1985

Florida Power & Light Company; Docket No. 810002-EU, Rate of Return, July, 1981
Florida Power & Light Company; Docket No. 82007-EU, Rate of Return, June, 1982
Florida Power & Light Company; Docket No. 830465-EI, Rate of Return and CWIP, March, 1984
Florida Power Corporation; Docket No. 830470-EI, Rate Phase-In, June, 1984
Florida Power Corp.; Rate of Return, August, 1986
Florida Power Corp.; Docket No. 870220-EI, Rate of Return, October, 1987
GTE Florida, Inc.; Docket No. 890216-TL, Rate of Return, July, 1989
Gulf Power Company; Docket No. 810136-EU, Rate of Return, October, 1981
Gulf Power Company; Docket No. 840086-EI, Rate of Return, August, 1984
Gulf Power Company; Docket No. 881167-EI, Rate of Return, 1989
Gulf Power Company; Docket No. 891345-EI, Rate of Return, 1990
Rolling Oaks Utilities, Inc.; Docket No. 850941-WS, Accounting, October, 1986
Southern Bell Telephone Company; Docket No. 880069-TL, Rate of Return, January, 1992
Southern Bell Telephone Company, Docket No. 920260-TL, Rate of Return, November, 1992
Southern Bell Telephone Company, Docket No. 90260-TL, Rate of Return, November, 1993
Southern States Utilities, Docket No. 950495-WS, Rate of Return, April, 1996
Tampa Electric Company; Docket No. 820007-EU, Rate of Return, June, 1982
Tampa Electric Company; Docket No. 830012-EU, Rate of Return, June, 1983
United Telephone of Florida; Docket No. 891239-TL, Rate of Return, November, 1989
United Telephone of Florida; Docket No. 891239-TL, Rate of Return, August, 1990
Water and Sewer Utilities, Docket No 880006-WS, Rate of Return, February, 1988.

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Georgia Power Company; Docket No. 3397-U, Accounting, July, 1983

ILLINOIS

Ameritech Illinois, Rate of Return and Capital Structure, Docket 96-0178, January and July, 1997.
Central Illinois Public Service Company; ICC Docket No. 86-0256, Financial and Rate of Return, October, 1986.
Central Telephone Company of Illinois, ICC Docket No. 93-0252, Rate of Return, October, 1993.
Commonwealth Edison Company; Docket No. 85CH10970, Financial Testimony, May, 1986.
Commonwealth Edison Company; Docket No. 86-0249, Financial Testimony, October, 1986.
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Commonwealth Edison Company; ICC Docket Nos. 91-747 and 91-748; Financial Affidavit, March, 1991.
Commonwealth Edison Company; Financial Affidavit, December, 1991.
Commonwealth Edison Company, ICC Docket No. 87-0427, Et. Al., 90-0169 (on Second Remand), Financial Testimony, August, 1992.
Genesco Telephone Company, Financial Testimony, July, 1997.
GTE North, ICC Docket 93-0301/94-0041, Cost of Capital, April, 1994
Illinois Power Company, Docket No. 92-0404, Creation of Subsidiary, April, 1993
Illinois Bell Telephone Company, Dockets No. ICC 92-0448 and ICC _____, Rate of Return, July, 1993
Northern Illinois Gas Company; Financial Affidavit, February, 1987.
Northern Illinois Gas Company; Docket No. 87-0032, Cost of Capital and Accounting Issues, June, 1987.
Peoples Gas Light and Coke Company; Docket No. 90-0007, Accounting Issues, May, 1990.

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Kentucky- American Water Company, Case No. 97-034, Rate of Return, June, 1997.
Kentucky Power Company; Case No. 8429, Rate of Return, April, 1982.
Kentucky Power Company; Case No. 8734, Rate of Return and CWIP, June, 1983.
Kentucky Power Company; Case No. 9061, Rate of Return and Rate Base Issues, September, 1984.
West Kentucky Gas Company, Case No. 8227, Rate of Return, August, 1981.

MAINE

Bangor Hydro-Electric Company; Docket No. 81-136, Rate of Return, January, 1982.
Bangor Hydro-Electric Company; Docket No. 93-62, Rate of Return, August, 1993
Maine Public Service Company; Docket No. 90-281, Accounting and Rate of Return, April, 1991.

MARYLAND

C & P Telephone Company; Case No. 7591, Fair Value, December, 1981

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Fitchburg Gas & Electric; Accounting and Finance, October, 1984
Southbridge Water Company; M.D.P.U., Rate of Return, September, 1982

MINNESOTA

Minnesota Power & Light Company; Docket No. EO15/GR-80-76, Rate of Return, July, 1980

NEW JERSEY

Atlantic City Sewage; Docket No. 774-315, Rate of Return, May, 1977
Atlantic City Electric Company, Docket Nos. ER 8809 1053 and ER 8809 1054, Rate of Return, April, 1990
Atlantic City Electric Company, Docket Nos. EO97070455 and EO97070456, Cost of Capital, Capital Cost Allocation, and Securitization, December, 1997.
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Bell Atlantic-New Jersey, Docket No. TO99120934, Financial Issues and Rate of Return, August 2000
Consumers New Jersey Water Company, BPU Docket No. WR00030174, September 2000
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Elizabethtown Gas Company. BRC Docket No. GM93090390. Evaluation of proposed merger with Pennsylvania & Southern Gas Co. April, 1994
Elizabethtown Water Company; Docket No. 781-6,Accounting, April, 1978
Elizabethtown Water Company; Docket No. 802-76, Rate of Return, January, 1979
Elizabethtown Water Company; Docket No. PUC 04416-90, BPU Docket No. WR90050497J, Rate of Return and Financial Integrity, November, 1990.
Elizabethtown Water Company; Docket No. WR 9108 1293J, and PUC 08057-91N, Rate of Return and Financial Integrity, January, 1992.
Elizabethtown Water Company, Docket No. WR 92070774J, and PUC 06173-92N, Rate of Return and Financial Integrity, January, 1993.
Elizabethtown Water Company, Docket No. BRC WR93010007, OAL No. PUC 2905-93, Regulatory treatment of CWIP. May, 1993.
Elizabethtown Water Company, BPU Docket No. WR 95110557, OAL Docket No. PUC 12247-95, Rate of Return, March, 1996.
Elizabethtown Water Company, BPU Docket No. WR01040205, Cost of Capital, September 2001.
Essex County Transfer Stations; OAL Docket PUC 03173-88, BPU Docket Nos. SE 87070552 and SE 87070566, Rate of Return, October, 1989.
GPU/FirstEnergy proposed merger; Docket No. EM 00110870, Capital Structure Issues, April 2001
Hackensack Water Company; Docket No. 776-455, October, 1977 and Accounting, February, 1979
Hackensack Water Company; Docket No. 787-847, Accounting and Interim Rate Relief, September, 1978
Hackensack Water Company; AFUDC & CWIP, June, 1979
Hackensack Water Company; Docket No. 804-275, Rate of Return, September, 1980
Hackensack Water Company; Docket No. 8011-870, CWIP, January, 1981
Inquiry Into Methods of Implementation of FASB-106, Financial Issues, BPU Docket No. AX96070530, September, 1996
Jersey Central Power & Light Company, Docket No. EO97070459 and EO97070460, Cost of Capital, Capital Cost Allocation, and Securitization, November 1997
Middlesex Water Company; Docket No. 793-254, Tariff Design, September, 1978

Middlesex Water Company; Docket No. 793-269, Rate of Return, June, 1979
Middlesex Water Company; Docket No. WR890302266-J, Accounting and Revenue Forecasting, July, 1989
Middlesex Water Company; Docket No. WR90080884-J, Accounting, Revenue Forecasting, and Rate of Return, February, 1991
Middlesex Water Company, Docket No. WR92070774-J, Rate of Return, January, 1993
Middlesex Water Company, Docket No. WR00060362, Rate of Return, October, 2000
Mount Holly Water Company; Docket No. 805-314, Rate of Return, August, 1980

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New Jersey American Water Company, BPU Docket No. WR9504, Rate of Return, September, 1995
New Jersey Bell Telephone; Docket No. 7711-1047, Tariff Design, September, 1978
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New Jersey Natural Gas; Docket No. 7812-1681, Rate of Return, April, 1979
New Jersey Water Supply Authority, Ratemaking Issues, February, 1995
Nuclear Performance Standards; BPU Docket No. EX89080719, Nuclear Performance Standards policy testimony
Pinelands Water Company and Pinelands Wastewater Company, Rate of Return, BPU Dockets WR00070454 and WR00070455, October, 2000.
Public Service Electric & Gas Company, Docket No. EX9412058Y and EO97070463, Cost of Capital, Capital Cost Allocation, and Securitization, November 1997
Public Service Electric & Gas Company, BPU Docket No. GR01050328, OAL Docket No. PUC-5052-01, Cost of Capital, August, 2001.
Rockland Electric Company; Docket No. 795-413, Rate of Return, October, 1979
Rockland Electric Company, Docket Nos. EO97070464 and EO97070465, Cost of Capital, Capital Cost Allocation, and Securitization, January, 1998
Salem Nuclear Power Plant, Atlantic City Electric Company and Public Service Electric & Gas Company, Docket No. ES96030158 & ES96030159, Financial Issues, April, 1996.
South Jersey Gas Company; Docket No. 769-988, Accounting, February, 1977
South Jersey Gas Company, BRC Docket No. GU94010002, June, 1994
United Artists Cablevision; Docket No. CTV-9924- 83, Rate of Return, April, 1984
Verizon, Rate of Return, BPU Docket No. TO 00060356, October, 2000
Verizon, Rate of Return, BPU Docket No. TO 01020095, May 2001
West Keansburg Water Company; Docket No. 838-737, Rate of Return, December, 1983

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Consolidated Edison Company; Case No. 27744, Accounting and Rate of Return, August 1980
Generic Financing Case for Electric & Gas Companies; Case No. 27679, May, 1981
Long Island Lighting Company; Case No. 27136, Accounting and Rate of Return, June, 1977

Long Island Lighting Company; Case No. 27774, Rate of Return, November, 1980
Long Island Lighting Company; Case No. 28176 and 28177, Rate of Return and Revenue Forecasting, June, 1982
Long Island Lighting Company, Case No. 28553, Rate of Return and Finance, March, 1984
Long Island Lighting Company, Case No. 93-E-1123, Rate of Return and Finance, May, 1994
New York Telephone, Case No. 27469, April, 1979
New York Telephone, Case No. 27710, Accounting, September, 1981

OHIO

Columbia Gas Company of Ohio; Case No. 77-1428-GA-AIR, March, 1979
Columbia Gas Company of Ohio; Case No. 78-1118-GA-AIR, Accounting and Rate of Return, May, 1979
Ohio Utilities Company; Case No. 78-1421-WS-AIR, Rate of Return, September, 1979

OKLAHOMA

Oklahoma Natural Gas Company, Case PUD No. 94000047, Rate of Return, May, 1995

OREGON

PacifiCorp, Case UE 116, Rate of Return, May 2001
Portland General Electric, Case UE 102, Rate of Return, July 1998
Portland General Electric, Case UE 115, Rate of Return, May 2001
Northwest Natural Gas Company, Docket No. UG-132, July 1999

PENNSYLVANIA

Allied Gas, Et. Al., Docket No. R-932952, Rate of Return, May, 1994
ATTCOM - Pennsylvania; Docket No. P-830452, Rate of Return, April, 1984
Borough of Media Water Fund; Docket No. R-901725, Rate of Return, November 1990
Bethel and Mt. Aetna Telephone Company; Docket No. LR-770090452, Accounting and Rate of Return, January, 1978
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Citizens Utilities Water Company of Pennsylvania, Docket No. R-00953300, Rate of Return, September, 1995
City of Bethlehem, Bureau of Water, Docket No. R-943124, Rate of Return, October, 1994
City of Lancaster-Water Fund, Docket R-00984567, Rate of Return, May, 1999
Columbia Gas of Pennsylvania; Docket No. R-78120724, Rate of Return, May, 1979

Dallas Water Co., Harvey's Lake Water Co., Noxen Water Co., Inc. & Shavertown Water Co. Inc., Docket Nos R-922326, R-922327, R-922328, R-922329, Rate of Return, September, 1992
Dauphin Consolidated Water Company; Docket No. R-780-50616, Rate of Return, August, 1978
Dauphin Consolidated Water Company; Docket No. R-860350, Rate of Return, July, 1986
Dauphin Consolidated Water Company; Docket No. R-912000, Rate of Return, September, 1991
Duquesne Light Company; Docket No. RID-373, Accounting and Rate of Return,
Duquesne Light Company; Docket No. R-80011069, Accounting and Rate of Return, June, 1979
Duquesne Light Company; Docket No. R-821945, Rate of Return, August, 1982
Duquesne Light Company; Docket No. R-850021, Rate of Return, August, 1985
Emporium Water Company, Docket No. R-00005050, Rate of Return, October 2000
Equitable Gas Company; Docket No. R-780040598, Rate of Return, September, 1978
General Telephone Company of Pennsylvania; Docket No. R-811512, Rate of Return
Mechanicsburg Water Company; Docket No. R-911946; Rate of Return, July, 1991
Mechanicsburg Water Company, Docket No. R-922502, Rate of Return, February, 1993
Metropolitan Edison and Pennsylvania Electric Company; Rate of Return, December, 1980
National Fuel Gas Company; Docket No. R-77110514, Rate of Return, September, 1978
National Fuel Gas Company, Docket No. R-953299, Rate of Return, June, 1995
North Penn Gas Company, Docket No. R-922276, Rate of Return, September, 1992
North Penn Gas Company, Docket No. R-00943245, Rate of Return, May, 1995
Pennsylvania American Water Company, Docket R-922428, Rate of Return, October, 1992
Pennsylvania Electric Company; Rate of Return, September, 1980
Pennsylvania Gas & Water Company, Docket No. R-80071265, Accounting and Rate of Return
Pennsylvania Gas & Water Company; Docket No. R-78040597, Rate of Return, August, 1978
Pennsylvania Gas & Water Company; Docket No. R-911966; Rate of Return, August, 1991
Pennsylvania Gas & Water Company, Docket No. R-922404; Rate of Return, October, 1992
Pennsylvania Gas & Water Company; Docket No. R-922482; Rate of Return, January, 1993
Pennsylvania Gas & Water Company; Docket No. R-932667; Rate of Return, July, 1993
Pennsylvania Power Company; Docket No. R-78040599, Accounting and Rate of Return, May, 1978
Pennsylvania Power Company; Docket No. R-811510, Accounting, August, 1981
Pennsylvania Power Company; Case No. 821918, Rate of Return, July, 1982
Pennsylvania Power & Light Company; Docket No. R-80031114, Accounting and Rate of Return
Pennsylvania Power & Light Company; Docket No. R-822169, Rate of Return, March, 1983
Peoples Natural Gas Company; Docket No. R-78010545, Rate of Return, August, 1978
Philadelphia Electric Company; Docket No. R-850152, Rate of Return, January, 1986
Philadelphia Suburban Water Company; Docket No. R-79040824, Rate of Return, September, 1979
Philadelphia Suburban Water Company; Docket No. R-842592, Rate of Return, July, 1984
Philadelphia Suburban Water Company; Docket No. R-911892, Rate of Return, May, 1991
Philadelphia Suburban Water Company, Docket No. R-00922476, Rate of Return, March, 1993
Philadelphia Suburban Water Company, Docket No. R-932868, Rate of Return, April, 1994

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Roaring Creek Water Company, Docket No. R-911963, Rate of Return, August, 1991
Roaring Creek Water Company, Docket No. R-00932665, Rate of Return, September, 1993
Sewer Authority of the City of Scranton; Financial Testimony, March, 1991
UGI Luzerne Electric; Docket No. R-78030572, Accounting and Rate of Return, October, 1978
United Water, Pennsylvania Inc., Docket No. R-00973947, Rate of Return, August, 1997
West Penn Power, Docket No. R-78100685, July, 1979
West Penn Power; Docket No. R-80021082, Accounting and Rate of Return
Williamsport vs. Borough of S. Williamsport re Sewage Rate Dispute
York Water Company, Docket No. R-850268, Rate of Return, June, 1986
York Water Company, Docket No. R-922168, Rate of Return, June, 1992
York Water Company, Docket No. R-994605, July, 1999
York Water Company, Docket No. R-00016236, Rate of Return, June 2001

RHODE ISLAND

Blackstone Valley Electric Company; Rate of Return, February, 1980
Blackstone Valley Electric Company; Docket No. 1605, Rate of Return, February, 1982
Blackstone Valley Electric Company, Docket No. 2016, Rate of Return, October, 1991
Block Island Power Company, Docket No. 1998, Interim Relief, Oral testimony only, March, 1991, Permanent relief accounting testimony , August, 1991
Bristol & Warren Gas Company; Docket No. 1395, Rate of Return, February, 1980
Bristol & Warren Gas Company; Docket No. 1395R, Rate of Return, June, 1982
FAS 106 Generic Hearing; Docket No. 2045, Financial Testimony, July, 1992
Narragansett Electric Corporation; Docket No. 1591, Accounting, November, 1981
Narragansett Electric Corporation; Docket No. 1719, Rate of Return, December, 1983
Narragansett Electric Corporation; Docket No. 1938, Rate of Return, October, 1989.
Narragansett Electric Corporation; Docket No. 1976, Rate of Return, October, 1990
Newport Electric Corporation; Docket No. 1410, Accounting, July, 1979
Newport Electric Corporation; Docket No. 1510, Rate of Return
Newport Electric Corporation; Docket No. 1801, Rate of Return, June, 1985
Newport Electric Corporation; Docket 2036, Rate of Return, April, 1992
Providence Gas Company; Docket No. 1971, Rate of Return, October, 1990
Providence Gas Company, Docket No. 2286, Rate of Return, May, 1995
South County Gas Company, Docket No. 1854, Rate of Return, December, 1986
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South Carolina Electric & Gas Company; Docket No. 79-196E, 79-197-G, Accounting, November, 1979

VERMONT

Green Mountain Power Company, Docket No. 4570, Accounting, July, 1982
New England Telephone Company; Docket No. 3806/4033, Accounting, November, 1979
New England Telephone Company; Docket No. 4366, Accounting

WASHINGTON, D.C.

PEPCO/BGE Merger Case, Formal Case No. 951, Rate of Return, September, 1996
Bell Atlantic- DC, Formal Case No. 814, Phase IV, Rate of Return, September, 1995
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Chesapeake and Potomac Telephone Company, Formal Case 926, Rate of Return, July, 1993.
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PEPCO; Formal Case No. 912, Rate of Return, March, 1992.
PEPCO; Formal Case No. 929, Rate of Return, October, 1993.
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Report on the Valuation of Nemours Corporation, filed on behalf of IRS, October, 1983 (Submitted to Tax Court)

Schedule JAR 1

Gulf Power
Overall Cost of Capital

Type of Capital	Ratios [A]	Cost Rate [D]	Weighted Cost Rate [E]	Pre-tax Cost Rate
Debt [C]	38.03%	7.04% [A]	2.68%	2.68%
Preferred Stock	8.31%	5.01% [A]	0.42%	0.64%
Common Equity	41.04%	10.00% [B]	4.10%	6.31%
Customer Deposits	1.11%	5.98%		
Investment Credit				
Zero cost	0.00%	0.00%	0.00%	0.00%
Weighted Cost	1.38%	9.70%	0.13%	0.21%
Deferred Income Taxes	10.13%	0.00%	0.00%	0.00%
	100.00%		7.33%	9.84%

Common Equity As a percentage of Common Equity + Debt + Preferred Equity 46.97%

Source:

[A] Schedule D-1 (page 2 of 6) Docket No. 010949-EI
[B] Schedule JAR 2
[C] Raios are Long-term debt plus short-term debt.
[D] Weighted average of long-term and short-term debt cost rates
[E] Capital Ratios X Cost Rate

Schedule JAR 2

GULF POWER
COST OF EQUITY SUMMARY

	Based Upon Average for Year Ended 11/30/01 Stock Prices		Based Upon Stock Prices on 11/30/01	
DCF				
SIMPLIFIED, OR CONSTANT GROWTH DCF (D/P +g) RESULTS:				
COMPARATIVE ELECTRIC COMPANIES	8.86%	[A]	9.63%	[A]
SOUTHERN COMPANY	9.60%	[B]	9.64%	[B]
	9.23%		9.64%	
COMPLEX, OR MULTI-STAGE DCF RESULT FOR COMPARATIVE ELECTRIC COMPANIES:				
Based upon HIGH End of Range for future return on book	9.87%	[C]	10.36%	[D]
Based upon LOW End of Range for future return on book	9.25%	[E]	9.71%	[F]
Average of high-low results		9.80%		
Based upon VALUE LINE Median for future return on book (Not Recommended, shown for illustration purposes only)	10.18%	[G]	10.68%	[H]
Risk Premiuim/CAPM				
	Low end of Range		High end of Range	
Based upon Average Return over inflation In all major sub-peroids from 1802 through 1997 (Manor sub-peroids are 1802-1870, 1871-1925, and 1926-1997) Results for Equity of Average Risk			8.90%	[I]
Based upon analysis of historic returns from 1926-1999: Adjusted for Electric Utility Specific Risk	8.94%	[J]		
Results for Equity of Average Risk			10.62%	[J]
Average	8.94%		9.76%	

Recommended Equity Cost Rate	10.00%
Capital Structure Risk Adjustment	0.00%
Cost of equity net of tax effect	10.00%

Source:

[A] Schedule JAR 4, P. 1
[B] Schedule JAR 4, P. 2
[C] Schedule JAR 5, P. 2
[D] Schedule JAR 5, P. 1
[E] Schedule JAR 5, P. 4
[F] Schedule JAR 5, P. 3
[G] Schedule JAR 5, P. 6
[H] Schedule JAR 5, P. 5
[I] Schedule JAR 9
[J] Schedule JAR 10, P. 1
Result based upon risk premium over corporate bonds only, as resuls from risk premium analyses from treasury bonds are too low due to flight to quality and efforts to stimulate the U.S. economy.

COMPARATIVE COMPANIES
SELECTED FINANCIAL DATA

Schedule JAR 3, P. 1

	VL Issue	[1] Book Per Sh. Dec. 97 [A]	[2] Book Per Sh. Dec. 98 [A]	[3] Book Per Sh. Dec. 99 [A]	[4] Book Per Sh. Dec. 00 [A]	[5] Market Price At 11/30/01 [C]	[6] Market Price High for Year [C]	[7] Market Price Low for Year [C]	[8] Market to Book At 11/30/01 [D]	[9] Market to Book Avg. for Year [D]	[10] Div. Rate [C]	[11] Dividend Yield At 11/30/01 [E]	[12] Dividend Yield Avg. for Year [E]
COMPARATIVE ELECTRIC COMPANIES													
Allegheny Energy	1	$18.43	$16.61	$15.35	$15.76	$34.85	$55.09	$33.35	2.21	2.84	$1.72	4.94%	3.89%
Alliant Energy	5	$19.73	$20.69	$27.29	$25.79	$28.10	$33.20	$27.50	1.09	1.14	$2.00	7.12%	6.59%
Ameren	5	$22.00	$22.27	$22.52	$23.30	$40.88	$46.94	$36.53	1.75	1.82	$2.54	6.21%	6.09%
Cinergy	5	$16.10	$16.02	$16.70	$17.36	$29.48	$35.60	$28.00	1.70	1.87	$1.80	6.11%	5.66%
FPL Group, Inc.	1	$26.65	$28.37	$30.07	$31.82	$55.40	$73.00	$51.21	1.74	2.01	$2.24	4.04%	3.61%
Progress Engergy	1	$18.63	$19.49	$21.38	$26.32	$41.45	$49.38	$38.78	1.57	1.85	$2.12	5.11%	4.81%
Teco Energy, Inc.	1	$11.04	$11.42	$10.73	$11.93	$26.41	$33.19	$25.09	2.21	2.57	$1.38	5.23%	4.74%
Wisconsin Energy	5	$16.51	$16.46	$16.89	$17.00	$21.85	$24.62	$19.13	1.29	1.29	$0.80	3.66%	3.66%
AVERAGE		$18.64	$18.92	$20.12	$21.16	$34.80	$43.88	$32.45	1.70	1.92	$1.83	5.30%	4.88%
Southern Co.	1	$14.08	$14.02	$13.82	$15.67	$22.75	$35.72	$20.89	1.71	1.90	$1.34	5.89%	4.73%

Sources: [A] Most current Value Line at time of prep
[C] Yahoo
[D] Market price divided by book value
[E] Dividend rate divided by market price

COMPARATIVE COMPANIES **Schedule JAR 3, Page 2**
EARNINGS PER SHARE AND RETURN ON EQUITY

	[1] EPS 1999	[2] EPS 2000	[3] Return on Eq. 2000	[4] Value Line Future Exp. Return on Eq.	Return on Equity 1999
	[A]	[A]	[B]	[A]	
COMPARATIVE ELECTRIC COMPANIES					
Allegheny Energy	$2.70	$2.11	13.56%	16.50%	16.90%
Alliant Energy	$2.19	$2.47	9.31%	10.00%	9.13%
Ameren	$2.81	$3.33	14.54%	13.50%	12.55%
Cinergy	$2.10	$2.50	14.68%	13.50%	12.84%
FPL Group, Inc.	$4.07	$4.14	13.38%	15.00%	13.93%
Progress Engergy	$2.55	$2.34	9.81%	13.00%	12.48%
Teco Energy, Inc.	$1.53	$1.97	17.39%	15.50%	13.81%
Wisconsin Energy	$1.88	$1.08	6.37%	11.00%	11.27%
AVERAGE	$2.48	$2.49	12.38%	13.50%	12.86%
		Median	13.47%	13.50%	12.69%
Southern Co.	$1.83	$2.01	13.63%	14.50%	13.15%

Source:

[A] Value Line
[B] Earnings Per Share divded by average book value. Book value shown on Schedule JAR 3, P. 1

RETURN ON EQUITY IMPLIED IN ZACK'S CONSENSUS GROWTH RATES

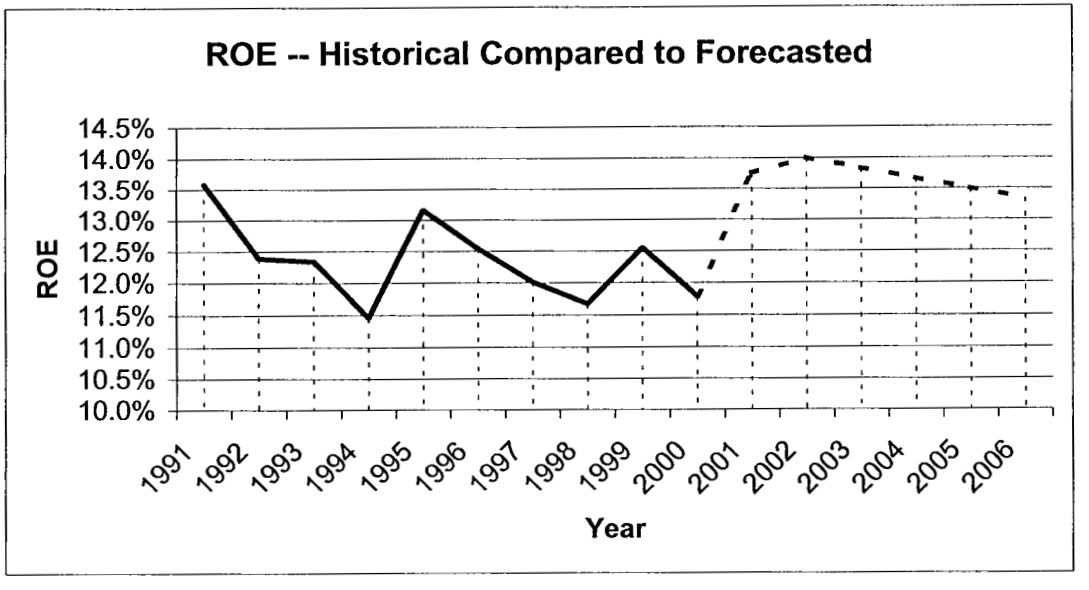
Schedule JAR 3, P. 3

		Y/E Book 2000 [3] [A]	Earnings 2000 [A]	Dividends [A]	Zack's Consensus 5 Year Growth Rate 6/30/01 [C]	Y/E Book in 2004 at Zack's Growth [D]	Y/E Book in 2005 at Zack's Growth [D]	Earnings 2005 at Zack's Growth [D]	Return on Equity to achieve Zack's Growth [D]		VALUE LINE BETA [A]
COMPARATIVE ELECTRIC COMPANIES											
Allegheny Energy		$15.76	$2.11	$1.72	9.20%	$17.71	$18.32	$3.28	18.19%	AYE	0.60
Alliant Energy		$25.79	$2.47	$2.00	5.00%	$27.92	$28.52	$3.15	11.17%	LNT	0.55
Ameren		$23.30	$3.33	$2.54	4.43%	$26.83	$27.81	$4.14	15.14%	AEE	0.55
Cinergy		$17.36	$2.50	$1.80	6.09%	$20.61	$21.55	$3.36	15.94%	CIN	0.55
FPL Group, Inc.		$31.82	$4.14	$2.24	7.12%	$40.87	$43.55	$5.84	13.83%	FPL	0.40
Progress Engergy		$26.32	$2.34	$2.12	6.95%	$27.36	$27.67	$3.27	11.90%	PGN	NMF
Teco Energy, Inc.		$11.93	$1.97	$1.38	8.92%	$14.87	$15.77	$3.02	19.72%	TE	0.50
Wisconsin Energy		$17.00	$1.08	$0.80	4.50%	$18.25	$18.60	$1.35	7.30%	WEC	0.50
AVERAGE	Average	$21.16	$2.49	$1.83	6.37%	$26.79	$27.95	$3.95	14.85%		0.52
	Median				6.52%				14.49%		0.55
Southern Co.		$15.67	$2.01	$1.34	5.31%	$18.73	$19.59	$2.60	13.59%	SO	NMF

[A] Value Line
[C] Zack's Web site: Zacks.com
[D] Projected return on equity is obtained by escalating both dividends and earnings per share by the stated growth rate, and adding earnings and subtracting dividends in each year to determine the book value.

Comparative Electric Companies
Return On Common Equity

	Historical										Forecast					
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Allegheny Energy	11.5%	11.1%	11.0%	10.9%	11.5%	9.7%	12.5%	12.9%	18.1%	13.4%	18.5%	18.0%	17.5%	17.0%	16.5%	16.0%
Alliant Energy	14.2%	11.9%	10.7%	11.7%	12.0%	10.9%	10.1%	6.0%	8.0%	9.6%	9.5%	9.5%	9.7%	9.8%	10.0%	10.2%
Ameren	14.6%	12.5%	12.8%	13.6%	13.0%	12.4%	11.1%	12.6%	12.5%	14.3%	14.0%	14.0%	13.8%	13.7%	13.5%	13.3%
Cinergy	11.5%	10.6%	12.4%	7.9%	13.6%	13.4%	18.1%	12.3%	12.6%	14.5%	15.0%	15.0%	14.5%	14.0%	13.5%	13.0%
FPL Group, Inc.	12.9%	12.2%	12.5%	11.4%	12.6%	12.6%	12.8%	13.0%	13.0%	12.6%	13.5%	13.5%	14.0%	14.5%	15.0%	15.5%
Progress Engergy	14.6%	14.2%	13.6%	11.7%	14.1%	14.2%	13.6%	13.4%	11.1%	6.7%	11.5%	13.5%	13.3%	13.2%	13.0%	12.8%
Teco Energy, Inc.	16.3%	15.6%	14.3%	14.1%	16.0%	15.9%	14.6%	13.3%	14.2%	16.7%	16.5%	16.5%	16.2%	15.8%	15.5%	15.2%
Wisconsin Energy	13.1%	11.0%	11.4%	10.4%	12.5%	11.2%	3.3%	9.9%	10.9%	6.5%	11.5%	12.0%	11.7%	11.3%	11.0%	10.7%
Average	*13.6%*	*12.4%*	*12.3%*	*11.5%*	*13.2%*	*12.5%*	*12.0%*	*11.7%*	*12.6%*	*11.8%*	*13.8%*	*14.0%*	*13.8%*	*13.7%*	*13.5%*	*13.3%*



COMPARATIVE ELECTRIC COMPANIES SELECTED BY COMPANY
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
1 Dividend Yield On Market Price	[B]	4.88%	5.30%
2 Retention Ratio:			
a) Market-to-book	[B]	1.92	1.70
b) Div. Yld on Book	[C]	9.39%	8.99%
c) Return on Equity	[A]	13.00%	13.00%
d) Retention Rate	[D]	27.78%	30.83%
3 Reinvestment Growth	[E]	3.61%	4.01%
4 New Financing Growth (sv)	[F]	0.28%	0.21%
5 Total Estimate of Investor Anticipated Growth	[G]	3.89%	4.22%
6 Increment to Dividend Yield for Growth to Next Year	[H]	0.09%	0.11%
7 Indicated Cost of Equity	[I]	8.86%	9.63%

Some of the Considerations for determining Future Expected Return on Equity:

		Median	Mean	Source:
[A]	Value Line Expectation	13.50%	13.50%	Schedule JAR 3, Page 2
	Expectation Derived from Zack's Consensus Growth Rate	14.49%	14.85%	Schedule JAR 3, P. 3
	Earned Return on Equity in 2000	13.47%	12.38%	Schedule JAR 3, Page 2
	Earned Return on Equity in 1999	12.69%	12.86%	Schedule JAR 3, Page 2

For recommended expectation, see text.

[B] Schedule JAR 3, P. 1
[C] Line 1 x Line 2a
[D] 1- Line 2b/Line 2c
[E] Line 2c x Line 2d
[F] The amount of new shares issued as a percentage of shares outstanding (S) was multiplied by "V", which is the M/B ratio -1.

Ext. Fin. Rate (S) used = 0.30% [J]

[G] Line 3 + Line 4
[H] Line 1 x one-half of line 5
[I] Line 1 + Line 5 + Line 6
[J] Schedule JAR 8

SOUTHERN COMPANY Schedule JAR 4, P. 2
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
1 Dividend Yield On Market Price	[B]	4.73%	5.89%
2 Retention Ratio:			
a) Market-to-book	[B]	1.90	1.71
b) Div. Yld on Book	[C]	9.02%	10.07%
c) Return on Equity	[A]	13.50%	13.50%
d) Retention Rate	[D]	33.22%	25.43%
3 Reinvestment Growth	[E]	4.48%	3.43%
4 New Financing Growth (sv)	[F]	0.27%	0.21%
5 Total Estimate of Investor Anticipated Growth	[G]	4.76%	3.65%
6 Increment to Dividend Yield for Growth to Next Year	[H]	0.11%	0.11%
7 Indicated Cost of Equity	[I]	9.60%	9.64%

Some of the Considerations for determining Future Expected Return on Equity:

			Source:
[A]	Value Line Expectation	14.50%	Schedule JAR 3, Page 2
	Expectation Derived from Zack's Consensus Growth Rate	13.59%	Schedule JAR 3, P. 3
	Earned Return on Equity in 2000	13.63%	Schedule JAR 3, Page 2
	Earned Return on Equity in 1999	13.15%	Schedule JAR 3, Page 2
	For recommended expectation, see text.		
[B]	Schedule JAR 3, P. 1 and Schedule JAR 3, Page 2		
[C]	Line 1 x Line 2a		
[D]	1- Line 2b/Line 2c		
[E]	Line 2c x Line 2d		
[F]	The amount of new shares issued as a percentage of shares outstanding (S) was multiplied by "V", which is the M/B ratio -1.		
	Ext. Fin. Rate (S) used =	0.30%	[J]
[G]	Line 3 + Line 4		
[H]	Line 1 x one-half of line 5		
[I]	Line 1 + Line 5 + Line 6		
[J]	Schedule JAR 8		

COMPARATIVE ELECTRIC COMPANIES
COMPLEX DCF METHOD
Based on Market Price on 11/30/01

	Year	[1] Year End Book	[2] Retention Rate	[3] Dividend	[4] Earnings Per Share	[5] Retained Earnings Per Share	[6] External Financing Rate	[7] Increme to book from Ext. Fin.	[8] Total Increme to Book	[9] Market Price	[10] Mkt to Book	[11] Expect. Ret. on Equity	[12] Cash Fl. from Stock Trans.	[13] Cash Fl. from Div.	[14] Total Cash Flow
		[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]	[I] M/B Change	[J] 0.00%	[K]	[L]	[M]	[N]
	2001	$22.76	41.33%	$1.83	$3.11	$1.29			$1.29	$38.60	1.70		($38.60)		($38.60)
	2002	$24.03	44.87%	$1.85	$3.36	$1.51			$1.51	$40.75	1.70	14.38%		$1.85	$1.85
First	2003	$25.48	45.79%	$1.92	$3.53	$1.62			$1.62	$43.21	1.70	14.27%		$1.92	$1.92
Stage	2004	$26.93	46.63%	$1.98	$3.70	$1.73			$1.73	$45.68	1.70	14.13%		$1.98	$1.98
	2005	$28.39	47.39%	$2.04	$3.88	$1.84			$1.84	$48.15	1.70	14.01%		$2.04	$2.04
	2006	$30.02	41.33%	$2.23	$3.80	$1.57	0.30%	$0.06	$1.63	$50.91	1.70	13.00%		$2.23	$2.23
	2007	$31.74	41.33%	$2.36	$4.01	$1.66	0.30%	$0.06	$1.72	$53.83	1.70	13.00%		$2.36	$2.36
	2008	$33.56	41.33%	$2.49	$4.24	$1.75	0.30%	$0.07	$1.82	$56.92	1.70	13.00%		$2.49	$2.49
	2009	$35.49	41.33%	$2.63	$4.49	$1.85	0.30%	$0.07	$1.93	$60.19	1.70	13.00%		$2.63	$2.63
	2010	$37.53	41.33%	$2.78	$4.75	$1.96	0.30%	$0.08	$2.04	$63.65	1.70	13.00%		$2.78	$2.78
	2011	$39.68	41.33%	$2.94	$5.02	$2.07	0.30%	$0.08	$2.15	$67.30	1.70	13.00%		$2.94	$2.94
	2012	$41.96	41.33%	$3.11	$5.31	$2.19	0.30%	$0.09	$2.28	$71.17	1.70	13.00%		$3.11	$3.11
	2013	$44.37	41.33%	$3.29	$5.61	$2.32	0.30%	$0.09	$2.41	$75.25	1.70	13.00%		$3.29	$3.29
	2014	$46.92	41.33%	$3.48	$5.93	$2.45	0.30%	$0.10	$2.55	$79.57	1.70	13.00%		$3.48	$3.48
	2015	$49.61	41.33%	$3.68	$6.27	$2.59	0.30%	$0.10	$2.69	$84.14	1.70	13.00%		$3.68	$3.68
	2016	$52.46	41.33%	$3.89	$6.63	$2.74	0.30%	$0.11	$2.85	$88.97	1.70	13.00%		$3.89	$3.89
	2017	$55.47	41.33%	$4.12	$7.02	$2.90	0.30%	$0.11	$3.01	$94.08	1.70	13.00%		$4.12	$4.12
	2018	$58.65	41.33%	$4.35	$7.42	$3.07	0.30%	$0.12	$3.18	$99.48	1.70	13.00%		$4.35	$4.35
	2019	$62.02	41.33%	$4.60	$7.84	$3.24	0.30%	$0.13	$3.37	$105.19	1.70	13.00%		$4.60	$4.60
	2020	$65.58	41.33%	$4.87	$8.29	$3.43	0.30%	$0.13	$3.56	$111.23	1.70	13.00%		$4.87	$4.87
	2021	$69.35	41.33%	$5.15	$8.77	$3.62	0.30%	$0.14	$3.76	$117.61	1.70	13.00%		$5.15	$5.15
	2022	$73.33	41.33%	$5.44	$9.27	$3.83	0.30%	$0.15	$3.98	$124.37	1.70	13.00%		$5.44	$5.44
	2023	$77.54	41.33%	$5.75	$9.81	$4.05	0.30%	$0.16	$4.21	$131.51	1.70	13.00%		$5.75	$5.75
	2024	$81.99	41.33%	$6.08	$10.37	$4.29	0.30%	$0.17	$4.45	$139.06	1.70	13.00%		$6.08	$6.08
	2025	$86.69	41.33%	$6.43	$10.96	$4.53	0.30%	$0.18	$4.71	$147.04	1.70	13.00%		$6.43	$6.43
	2026	$91.67	41.33%	$6.80	$11.59	$4.79	0.30%	$0.19	$4.98	$155.48	1.70	13.00%		$6.80	$6.80
	2027	$96.93	41.33%	$7.19	$12.26	$5.07	0.30%	$0.20	$5.26	$164.41	1.70	13.00%		$7.19	$7.19
	2028	$102.50	41.33%	$7.61	$12.96	$5.36	0.30%	$0.21	$5.56	$173.84	1.70	13.00%		$7.61	$7.61
	2029	$108.38	41.33%	$8.04	$13.71	$5.66	0.30%	$0.22	$5.88	$183.82	1.70	13.00%		$8.04	$8.04
	2030	$114.61	41.33%	$8.50	$14.49	$5.99	0.30%	$0.23	$6.22	$194.38	1.70	13.00%		$8.50	$8.50
	2031	$121.18	41.33%	$8.99	$15.33	$6.33	0.30%	$0.25	$6.58	$205.54	1.70	13.00%		$8.99	$8.99
	2032	$128.14	41.33%	$9.51	$16.21	$6.70	0.30%	$0.26	$6.96	$217.34	1.70	13.00%		$9.51	$9.51
	2033	$135.50	41.33%	$10.05	$17.14	$7.08	0.30%	$0.27	$7.36	$229.81	1.70	13.00%		$10.05	$10.05
Second	2034	$143.28	41.33%	$10.63	$18.12	$7.49	0.30%	$0.29	$7.78	$243.01	1.70	13.00%		$10.63	$10.63
Stage	2035	$151.50	41.33%	$11.24	$19.16	$7.92	0.30%	$0.31	$8.23	$256.96	1.70	13.00%		$11.24	$11.24
	2036	$160.20	41.33%	$11.89	$20.26	$8.37	0.30%	$0.32	$8.70	$271.71	1.70	13.00%		$11.89	$11.89
	2037	$169.40	41.33%	$12.57	$21.42	$8.85	0.30%	$0.34	$9.20	$287.31	1.70	13.00%		$12.57	$12.57
	2038	$179.12	41.33%	$13.29	$22.65	$9.36	0.30%	$0.36	$9.72	$303.80	1.70	13.00%		$13.29	$13.29
	2039	$189.41	41.33%	$14.06	$23.95	$9.90	0.30%	$0.38	$10.28	$321.24	1.70	13.00%		$14.06	$14.06
	2040	$200.28	41.33%	$14.86	$25.33	$10.47	0.30%	$0.41	$10.87	$339.69	1.70	13.00%		$14.86	$14.86
	2041	$211.78	41.33%	$15.72	$26.78	$11.07	0.30%	$0.43	$11.50	$359.19	1.70	13.00%	$359.19	$15.72	$374.90
												Internal Rate of Return			10.36%

Source:

[A] First Stage is average from Value Line. Second stage is prior years' book plus value from Col.[8]
[B] First Stage is (Col. [4]-Col.[3]/Col.[4]). Second stage is equal to final value of first stage.
[C] First Stage is from Value Line. Second stage is Col. [4] x (1-Col. [2])
[D] First Stage is from Value line. Second stage is average of current and prior year's value from Col. [1] x Col. [11]
[E] Col. [4] - Col. [3]
[F] Schedule JAR 8
[G] Col. [5] + Col. [7]
[H] Col. [7] + Col. [8]
[I] Col. [1] x Col. [10]
[J] Schedule JAR 3, P. 1
[K] First stage is Col. [4]/Avg. of Current and prior year's Col. [1]. Second stage is from Schedule JAR 4, P. 1
[L] - Col. [9] for year of purchase, + Col. [9] for year of sale.
[M] Col. [3]
[N] Col. [12] + Col. [13]

COMPARATIVE ELECTRIC COMPANIES
COMPLEX DCF METHOD
Based on Market Price for Year Ende 11/30/01

	Year	[1] Year End Book	[2] Retentio Rate	[3] Dividend	[4] Earnings Per Shar	[5] Retained Earnings Per Shar	[6] External Financing Rate	[7] Increme to book from Ext. Fin.	[8] Total Increme to Book	[9] Market Price	[10] Mkt to Book	[11] Expect. Ret. on Equity	[12] Cash Fl. from Stock Trans.	[13] Cash Fl. from Div.	[14] Total Cash Flow
				$0.00											
		[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]	[I]	[J]	[K]	[L]	[M]	[N]
									$0.00	M/B Chan	0.00%				
	2001	$22.76		$1.83						$43.79	1.92		($43.79)		($43.79)
	2002	$24.03	44.87%	$1.85	$3.36	$1.51			$1.51	$46.23	1.92	14.38%		$1.85	$1.85
First	2003	$25.48	45.79%	$1.92	$3.53	$1.62			$1.62	$49.03	1.92	14.27%		$1.92	$1.92
Stage	2004	$26.93	46.63%	$1.98	$3.70	$1.73			$1.73	$51.82	1.92	14.13%		$1.98	$1.98
	2005	$28.39	47.39%	$2.04	$3.88	$1.84			$1.84	$54.62	1.92	14.01%		$2.04	$2.04
	2006	$30.04	41.33%	$2.23	$3.80	$1.57	0.30%	$0.08	$1.65	$57.80	1.92	13.00%		$2.23	$2.23
	2007	$31.78	41.33%	$2.36	$4.02	$1.66	0.30%	$0.09	$1.75	$61.16	1.92	13.00%		$2.36	$2.36
	2008	$33.63	41.33%	$2.49	$4.25	$1.76	0.30%	$0.09	$1.85	$64.71	1.92	13.00%		$2.49	$2.49
	2009	$35.59	41.33%	$2.64	$4.50	$1.86	0.30%	$0.10	$1.96	$68.47	1.92	13.00%		$2.64	$2.64
	2010	$37.66	41.33%	$2.79	$4.76	$1.97	0.30%	$0.10	$2.07	$72.45	1.92	13.00%		$2.79	$2.79
	2011	$39.84	41.33%	$2.96	$5.04	$2.08	0.30%	$0.11	$2.19	$76.67	1.92	13.00%		$2.96	$2.96
	2012	$42.16	41.33%	$3.13	$5.33	$2.20	0.30%	$0.11	$2.32	$81.12	1.92	13.00%		$3.13	$3.13
	2013	$44.61	41.33%	$3.31	$5.64	$2.33	0.30%	$0.12	$2.45	$85.84	1.92	13.00%		$3.31	$3.31
	2014	$47.21	41.33%	$3.50	$5.97	$2.47	0.30%	$0.13	$2.59	$90.83	1.92	13.00%		$3.50	$3.50
	2015	$49.95	41.33%	$3.71	$6.32	$2.61	0.30%	$0.13	$2.74	$96.11	1.92	13.00%		$3.71	$3.71
	2016	$52.85	41.33%	$3.92	$6.68	$2.76	0.30%	$0.14	$2.90	$101.70	1.92	13.00%		$3.92	$3.92
	2017	$55.93	41.33%	$4.15	$7.07	$2.92	0.30%	$0.15	$3.07	$107.61	1.92	13.00%		$4.15	$4.15
	2018	$59.18	41.33%	$4.39	$7.48	$3.09	0.30%	$0.16	$3.25	$113.86	1.92	13.00%		$4.39	$4.39
	2019	$62.62	41.33%	$4.65	$7.92	$3.27	0.30%	$0.17	$3.44	$120.48	1.92	13.00%		$4.65	$4.65
	2020	$66.26	41.33%	$4.92	$8.38	$3.46	0.30%	$0.18	$3.64	$127.49	1.92	13.00%		$4.92	$4.92
	2021	$70.11	41.33%	$5.20	$8.86	$3.66	0.30%	$0.19	$3.85	$134.90	1.92	13.00%		$5.20	$5.20
	2022	$74.18	41.33%	$5.50	$9.38	$3.88	0.30%	$0.20	$4.08	$142.74	1.92	13.00%		$5.50	$5.50
	2023	$78.50	41.33%	$5.82	$9.92	$4.10	0.30%	$0.21	$4.31	$151.04	1.92	13.00%		$5.82	$5.82
	2024	$83.06	41.33%	$6.16	$10.50	$4.34	0.30%	$0.22	$4.56	$159.82	1.92	13.00%		$6.16	$6.16
	2025	$87.89	41.33%	$6.52	$11.11	$4.59	0.30%	$0.24	$4.83	$169.11	1.92	13.00%		$6.52	$6.52
	2026	$93.00	41.33%	$6.90	$11.76	$4.86	0.30%	$0.25	$5.11	$178.94	1.92	13.00%		$6.90	$6.90
	2027	$98.40	41.33%	$7.30	$12.44	$5.14	0.30%	$0.26	$5.41	$189.34	1.92	13.00%		$7.30	$7.30
	2028	$104.12	41.33%	$7.72	$13.16	$5.44	0.30%	$0.28	$5.72	$200.35	1.92	13.00%		$7.72	$7.72
	2029	$110.18	41.33%	$8.17	$13.93	$5.76	0.30%	$0.30	$6.05	$212.00	1.92	13.00%		$8.17	$8.17
	2030	$116.58	41.33%	$8.65	$14.74	$6.09	0.30%	$0.31	$6.40	$224.32	1.92	13.00%		$8.65	$8.65
	2031	$123.36	41.33%	$9.15	$15.60	$6.45	0.30%	$0.33	$6.78	$237.36	1.92	13.00%		$9.15	$9.15
	2032	$130.53	41.33%	$9.68	$16.50	$6.82	0.30%	$0.35	$7.17	$251.16	1.92	13.00%		$9.68	$9.68
	2033	$138.12	41.33%	$10.25	$17.46	$7.22	0.30%	$0.37	$7.59	$265.76	1.92	13.00%		$10.25	$10.25
Second	2034	$146.15	41.33%	$10.84	$18.48	$7.64	0.30%	$0.39	$8.03	$281.21	1.92	13.00%		$10.84	$10.84
Stage	2035	$154.64	41.33%	$11.47	$19.55	$8.08	0.30%	$0.42	$8.50	$297.56	1.92	13.00%		$11.47	$11.47
	2036	$163.63	41.33%	$12.14	$20.69	$8.55	0.30%	$0.44	$8.99	$314.86	1.92	13.00%		$12.14	$12.14
	2037	$173.15	41.33%	$12.84	$21.89	$9.05	0.30%	$0.47	$9.51	$333.16	1.92	13.00%		$12.84	$12.84
	2038	$183.21	41.33%	$13.59	$23.16	$9.57	0.30%	$0.49	$10.07	$352.53	1.92	13.00%		$13.59	$13.59
	2039	$193.86	41.33%	$14.38	$24.51	$10.13	0.30%	$0.52	$10.65	$373.02	1.92	13.00%		$14.38	$14.38
	2040	$205.13	41.33%	$15.22	$25.93	$10.72	0.30%	$0.55	$11.27	$394.71	1.92	13.00%		$15.22	$15.22
	2041	$217.06	41.33%	$16.10	$27.44	$11.34	0.30%	$0.58	$11.93	$417.65	1.92	13.00%	$417.65	$16.10	$433.75
												Internal Rate of Return			9.87%

Source:

[A] First Stage is average from Value Line. Second stage is prior years' book plus value from Col.[8]
[B] First Stage is (Col. [4]-Col.[3]/Col.[4]). Second stage is equal to final value of first stage.
[C] First Stage is from Value Line. Second stage is Col. [4] x (1-Col. [2])
[D] First Stage is from Value line. Second stage is average of current and prior year's value from Col. [1] x Col. [11]
[E] Col. [4] - Col. [3]
[F] Schedule JAR 8
[G] Col. [5] + Col. [7]
[H] Col. [7] + Col. [8]
[I] Col. [1] x Col. [10]
[J] Schedule JAR 3, P. 1
[K] First stage is Col. [4]/Avg. of Current and prior year's Col. [1]. Second stage is from
[L] - Col. [9] for year of purchase, + Col. [9] for year of sale.
[M] Col. [3]
[N] Col. [12] + Col. [13]

COMPARATIVE ELECTRIC COMPANIES
COMPLEX DCF METHOD
Based on Market Price on 11/30/01

	Year	[1] Year End Book	[2] Retentio Rate	[3] Dividend	[4] Earnings Per Share	[5] Retained Earnings Per Share	[6] External Financing Rate	[7] Increme to book from Ext. Fin.	[8] Total Increme to Book	[9] Market Price	[10] Mkt to Book	[11] Expect. Ret. on Equity	[12] Cash Fl. from Stock Trans.	[13] Cash Fl. from Div.	[14] Total Cash Flow	
		[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]	[I]	[J]	[K]	[L]	[M]	[N]	
										M/B Change	0.00%					
	2001	$22.76	41.33%	$1.83	$3.11	$1.29			$1.29	$38.60	1.70		($38.60)		($38.60)	
	2002	$24.03	44.87%	$1.85	$3.36	$1.51			$1.51	$40.75	1.70	14.38%		$1.85	$1.85	
First	2003	$25.48	45.79%	$1.92	$3.53	$1.62			$1.62	$43.21	1.70	14.27%		$1.92	$1.92	First
Stage	2004	$26.93	46.63%	$1.98	$3.70	$1.73			$1.73	$45.68	1.70	14.13%		$1.98	$1.98	Stage
	2005	$28.39	47.39%	$2.04	$3.88	$1.84			$1.84	$48.15	1.70	14.01%		$2.04	$2.04	
	2006	$29.89	41.33%	$2.05	$3.50	$1.45	0.30%	$0.06	$1.51	$50.70	1.70	12.00%		$2.05	$2.05	
	2007	$31.48	41.33%	$2.16	$3.68	$1.52	0.30%	$0.06	$1.59	$53.39	1.70	12.00%		$2.16	$2.16	
	2008	$33.15	41.33%	$2.28	$3.88	$1.60	0.30%	$0.07	$1.67	$56.22	1.70	12.00%		$2.28	$2.28	
	2009	$34.91	41.33%	$2.40	$4.08	$1.69	0.30%	$0.07	$1.76	$59.20	1.70	12.00%		$2.40	$2.40	
	2010	$36.76	41.33%	$2.52	$4.30	$1.78	0.30%	$0.07	$1.85	$62.35	1.70	12.00%		$2.52	$2.52	
	2011	$38.71	41.33%	$2.66	$4.53	$1.87	0.30%	$0.08	$1.95	$65.65	1.70	12.00%		$2.66	$2.66	
	2012	$40.76	41.33%	$2.80	$4.77	$1.97	0.30%	$0.08	$2.05	$69.13	1.70	12.00%		$2.80	$2.80	
	2013	$42.92	41.33%	$2.95	$5.02	$2.08	0.30%	$0.09	$2.16	$72.80	1.70	12.00%		$2.95	$2.95	
	2014	$45.20	41.33%	$3.10	$5.29	$2.19	0.30%	$0.09	$2.28	$76.66	1.70	12.00%		$3.10	$3.10	
	2015	$47.60	41.33%	$3.27	$5.57	$2.30	0.30%	$0.10	$2.40	$80.73	1.70	12.00%		$3.27	$3.27	
	2016	$50.12	41.33%	$3.44	$5.86	$2.42	0.30%	$0.10	$2.52	$85.01	1.70	12.00%		$3.44	$3.44	
	2017	$52.78	41.33%	$3.62	$6.17	$2.55	0.30%	$0.11	$2.66	$89.52	1.70	12.00%		$3.62	$3.62	
	2018	$55.58	41.33%	$3.81	$6.50	$2.69	0.30%	$0.11	$2.80	$94.27	1.70	12.00%		$3.81	$3.81	
	2019	$58.53	41.33%	$4.02	$6.85	$2.83	0.30%	$0.12	$2.95	$99.27	1.70	12.00%		$4.02	$4.02	
	2020	$61.64	41.33%	$4.23	$7.21	$2.98	0.30%	$0.13	$3.10	$104.54	1.70	12.00%		$4.23	$4.23	
	2021	$64.91	41.33%	$4.45	$7.59	$3.14	0.30%	$0.13	$3.27	$110.08	1.70	12.00%		$4.45	$4.45	
	2022	$68.35	41.33%	$4.69	$8.00	$3.30	0.30%	$0.14	$3.44	$115.92	1.70	12.00%		$4.69	$4.69	
	2023	$71.97	41.33%	$4.94	$8.42	$3.48	0.30%	$0.15	$3.63	$122.07	1.70	12.00%		$4.94	$4.94	
	2024	$75.79	41.33%	$5.20	$8.87	$3.66	0.30%	$0.15	$3.82	$128.55	1.70	12.00%		$5.20	$5.20	
	2025	$79.81	41.33%	$5.48	$9.34	$3.86	0.30%	$0.16	$4.02	$135.37	1.70	12.00%		$5.48	$5.48	
	2026	$84.05	41.33%	$5.77	$9.83	$4.06	0.30%	$0.17	$4.23	$142.55	1.70	12.00%		$5.77	$5.77	
	2027	$88.50	41.33%	$6.07	$10.35	$4.28	0.30%	$0.18	$4.46	$150.11	1.70	12.00%		$6.07	$6.07	
	2028	$93.20	41.33%	$6.40	$10.90	$4.51	0.30%	$0.19	$4.69	$158.07	1.70	12.00%		$6.40	$6.40	
	2029	$98.14	41.33%	$6.74	$11.48	$4.74	0.30%	$0.20	$4.94	$166.46	1.70	12.00%		$6.74	$6.74	
	2030	$103.35	41.33%	$7.09	$12.09	$5.00	0.30%	$0.21	$5.21	$175.29	1.70	12.00%		$7.09	$7.09	
	2031	$108.83	41.33%	$7.47	$12.73	$5.26	0.30%	$0.22	$5.48	$184.58	1.70	12.00%		$7.47	$7.47	
	2032	$114.60	41.33%	$7.87	$13.41	$5.54	0.30%	$0.23	$5.77	$194.37	1.70	12.00%		$7.87	$7.87	
	2033	$120.68	41.33%	$8.28	$14.12	$5.83	0.30%	$0.25	$6.08	$204.69	1.70	12.00%		$8.28	$8.28	
Second	2034	$127.08	41.33%	$8.72	$14.87	$6.14	0.30%	$0.26	$6.40	$215.54	1.70	12.00%		$8.72	$8.72	Second
Stage	2035	$133.83	41.33%	$9.19	$15.65	$6.47	0.30%	$0.27	$6.74	$226.98	1.70	12.00%		$9.19	$9.19	Stage
	2036	$140.92	41.33%	$9.67	$16.49	$6.81	0.30%	$0.29	$7.10	$239.02	1.70	12.00%		$9.67	$9.67	
	2037	$148.40	41.33%	$10.19	$17.36	$7.17	0.30%	$0.30	$7.48	$251.70	1.70	12.00%		$10.19	$10.19	
	2038	$156.27	41.33%	$10.73	$18.28	$7.55	0.30%	$0.32	$7.87	$265.05	1.70	12.00%		$10.73	$10.73	
	2039	$164.56	41.33%	$11.29	$19.25	$7.96	0.30%	$0.33	$8.29	$279.11	1.70	12.00%		$11.29	$11.29	
	2040	$173.29	41.33%	$11.89	$20.27	$8.38	0.30%	$0.35	$8.73	$293.91	1.70	12.00%		$11.89	$11.89	
	2041	$182.48	41.33%	$12.52	$21.35	$8.82	0.30%	$0.37	$9.19	$309.50	1.70	12.00%	$309.50	$12.52	$322.03	
												Internal Rate of Return			9.71%	

Source:

[A] First Stage is average from Value Line. Second stage is prior years' book plus value from Col.[8]
[B] First Stage is (Col. [4]-Col.[3]/Col.[4]). Second stage is equal to final value of first stage.
[C] First Stage is from Value Line. Second stage is Col. [4] x (1-Col. [2])
[D] First Stage is from Value line. Second stage is average of current and prior year's value from Col. [1] x Col. [11]
[E] Col. [4] - Col. [3]
[F] Schedule JAR 8
[G] Col. [5] + Col. [7]
[H] Col. [7] + Col. [8]
[I] Col. [1] x Col. [10]
[J] Schedule JAR 3, P. 1
[K] First stage is Col. [4]/Avg. of Current and prior year's Col. [1]. Second stage is from Schedule JAR 4, P. 1
[L] - Col. [9] for year of purchase, + Col. [9] for year of sale.
[M] Col. [3]
[N] Col. [12] + Col. [13]

COMPARATIVE ELECTRIC COMPANIES
COMPLEX DCF METHOD
Based on Market Price for Year Ende 11/30/01

Year	[1] Year End Book	[2] Retentio Rate	[3] Dividend	[4] Earnings Per Shar	[5] Retained Earnings Per Shar	[6] External Financing Rate	[7] Increme to book from Ext. Fin.	[8] Total Increme to Book	[9] Market Price	[10] Mkt to Book	[11] Expect. Ret. on Equity	[12] Cash Fl. from Stock Trans.	[13] Cash Fl. from Div.	[14] Total Cash Flow
	[A]	[B]	$0.00 [C]	[D]	[E]	[F]	[G]	$0.00 [H]	[I] M/B Chan	0.00% [J]	[K]	[L]	[M]	[N]
2001	$22.76	41.33%	$1.83	$3.11	$1.29			$1.29	$43.79	1.92		($43.79)		($43.79)
2002	$24.03	44.87%	$1.85	$3.36	$1.51			$1.51	$46.23	1.92	14.38%		$1.85	$1.85
2003	$25.48	45.79%	$1.92	$3.53	$1.62			$1.62	$49.03	1.92	14.27%		$1.92	$1.92
2004	$26.93	46.63%	$1.98	$3.70	$1.73			$1.73	$51.82	1.92	14.13%		$1.98	$1.98
2005	$28.39	47.39%	$2.04	$3.88	$1.84			$1.84	$54.62	1.92	14.01%		$2.04	$2.04
2006	$29.91	41.33%	$2.05	$3.50	$1.45	0.30%	$0.08	$1.53	$57.56	1.92	12.00%		$2.05	$2.05
2007	$31.52	41.33%	$2.16	$3.69	$1.52	0.30%	$0.09	$1.61	$60.65	1.92	12.00%		$2.16	$2.16
2008	$33.22	41.33%	$2.28	$3.88	$1.61	0.30%	$0.09	$1.69	$63.91	1.92	12.00%		$2.28	$2.28
2009	$35.00	41.33%	$2.40	$4.09	$1.69	0.30%	$0.09	$1.79	$67.35	1.92	12.00%		$2.40	$2.40
2010	$36.88	41.33%	$2.53	$4.31	$1.78	0.30%	$0.10	$1.88	$70.97	1.92	12.00%		$2.53	$2.53
2011	$38.87	41.33%	$2.67	$4.55	$1.88	0.30%	$0.10	$1.98	$74.79	1.92	12.00%		$2.67	$2.67
2012	$40.96	41.33%	$2.81	$4.79	$1.98	0.30%	$0.11	$2.09	$78.81	1.92	12.00%		$2.81	$2.81
2013	$43.16	41.33%	$2.96	$5.05	$2.09	0.30%	$0.12	$2.20	$83.05	1.92	12.00%		$2.96	$2.96
2014	$45.48	41.33%	$3.12	$5.32	$2.20	0.30%	$0.12	$2.32	$87.51	1.92	12.00%		$3.12	$3.12
2015	$47.93	41.33%	$3.29	$5.60	$2.32	0.30%	$0.13	$2.45	$92.22	1.92	12.00%		$3.29	$3.29
2016	$50.50	41.33%	$3.47	$5.91	$2.44	0.30%	$0.14	$2.58	$97.17	1.92	12.00%		$3.47	$3.47
2017	$53.22	41.33%	$3.65	$6.22	$2.57	0.30%	$0.14	$2.72	$102.40	1.92	12.00%		$3.65	$3.65
2018	$56.08	41.33%	$3.85	$6.56	$2.71	0.30%	$0.15	$2.86	$107.90	1.92	12.00%		$3.85	$3.85
2019	$59.09	41.33%	$4.05	$6.91	$2.86	0.30%	$0.16	$3.02	$113.71	1.92	12.00%		$4.05	$4.05
2020	$62.27	41.33%	$4.27	$7.28	$3.01	0.30%	$0.17	$3.18	$119.82	1.92	12.00%		$4.27	$4.27
2021	$65.62	41.33%	$4.50	$7.67	$3.17	0.30%	$0.18	$3.35	$126.26	1.92	12.00%		$4.50	$4.50
2022	$69.15	41.33%	$4.74	$8.09	$3.34	0.30%	$0.19	$3.53	$133.05	1.92	12.00%		$4.74	$4.74
2023	$72.87	41.33%	$5.00	$8.52	$3.52	0.30%	$0.20	$3.72	$140.20	1.92	12.00%		$5.00	$5.00
2024	$76.78	41.33%	$5.27	$8.98	$3.71	0.30%	$0.21	$3.92	$147.74	1.92	12.00%		$5.27	$5.27
2025	$80.91	41.33%	$5.55	$9.46	$3.91	0.30%	$0.22	$4.13	$155.69	1.92	12.00%		$5.55	$5.55
2026	$85.26	41.33%	$5.85	$9.97	$4.12	0.30%	$0.23	$4.35	$164.06	1.92	12.00%		$5.85	$5.85
2027	$89.85	41.33%	$6.16	$10.51	$4.34	0.30%	$0.24	$4.58	$172.88	1.92	12.00%		$6.16	$6.16
2028	$94.68	41.33%	$6.50	$11.07	$4.58	0.30%	$0.26	$4.83	$182.17	1.92	12.00%		$6.50	$6.50
2029	$99.77	41.33%	$6.85	$11.67	$4.82	0.30%	$0.27	$5.09	$191.97	1.92	12.00%		$6.85	$6.85
2030	$105.13	41.33%	$7.21	$12.29	$5.08	0.30%	$0.28	$5.36	$202.29	1.92	12.00%		$7.21	$7.21
2031	$110.78	41.33%	$7.60	$12.95	$5.35	0.30%	$0.30	$5.65	$213.16	1.92	12.00%		$7.60	$7.60
2032	$116.74	41.33%	$8.01	$13.65	$5.64	0.30%	$0.31	$5.96	$224.62	1.92	12.00%		$8.01	$8.01
2033	$123.02	41.33%	$8.44	$14.39	$5.94	0.30%	$0.33	$6.28	$236.70	1.92	12.00%		$8.44	$8.44
2034	$129.63	41.33%	$8.89	$15.16	$6.26	0.30%	$0.35	$6.61	$249.43	1.92	12.00%		$8.89	$8.89
2035	$136.60	41.33%	$9.37	$15.97	$6.60	0.30%	$0.37	$6.97	$262.84	1.92	12.00%		$9.37	$9.37
2036	$143.95	41.33%	$9.88	$16.83	$6.96	0.30%	$0.39	$7.34	$276.97	1.92	12.00%		$9.88	$9.88
2037	$151.68	41.33%	$10.41	$17.74	$7.33	0.30%	$0.41	$7.74	$291.86	1.92	12.00%		$10.41	$10.41
2038	$159.84	41.33%	$10.97	$18.69	$7.72	0.30%	$0.43	$8.16	$307.56	1.92	12.00%		$10.97	$10.97
2039	$168.43	41.33%	$11.56	$19.70	$8.14	0.30%	$0.45	$8.59	$324.09	1.92	12.00%		$11.56	$11.56
2040	$177.49	41.33%	$12.18	$20.76	$8.58	0.30%	$0.48	$9.06	$341.52	1.92	12.00%		$12.18	$12.18
2041	$187.03	41.33%	$12.83	$21.87	$9.04	0.30%	$0.50	$9.54	$359.88	1.92	12.00%	$359.88	$12.83	$372.71
											Internal Rate of Return			9.25%

Source:

[A] First Stage is average from Value Line. Second stage is prior years' book plus value from Col.[8]
[B] First Stage is (Col. [4]-Col.[3]/Col.[4]). Second stage is equal to final value of first stage.
[C] First Stage is from Value Line. Second stage is Col. [4] x (1-Col. [2])
[D] First Stage is from Value line. Second stage is average of current and prior year's value from Col. [1] x Col. [11]
[E] Col. [4] - Col. [3]
[F] Schedule JAR 8
[G] Col. [5] + Col. [7]
[H] Col. [7] + Col. [8]
[I] Col. [1] x Col. [10]
[J] Schedule JAR 3, P. 1
[K] First stage is Col. [4]/Avg. of Current and prior year's Col. [1]. Second stage is from
[L] - Col. [9] for year of purchase, + Col. [9] for year of sale.
[M] Col. [3]
[N] Col. [12] + Col. [13]

COMPARATIVE ELECTRIC COMPANIES
COMPLEX DCF METHOD
Based on Market Price on 11/30/01

	Year	[1] Year End Book	[2] Retentio Rate	[3] Dividend	[4] Earnings Per Share	[5] Retained Earnings Per Share	[6] External Financing Rate	[7] Increme to book from Ext. Fin.	[8] Total Increme to Book	[9] Market Price	[10] Mkt to Book	[11] Expect. Ret. on Equity	[12] Cash Fl. from Stock Trans.	[13] Cash Fl. from Div.	[14] Total Cash Flow
		[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]	[I] M/B Change	[J] 0.00%	[K]	[L]	[M]	[N]
	2001	$22.76	41.33%	$1.83	$3.11	$1.29			$1.29	$38.60	1.70		($38.60)		($38.60)
	2002	$24.03	44.87%	$1.85	$3.36	$1.51			$1.51	$40.75	1.70	14.38%		$1.85	$1.85
First	2003	$25.48	45.79%	$1.92	$3.53	$1.62			$1.62	$43.21	1.70	14.27%		$1.92	$1.92
Stage	2004	$26.93	46.63%	$1.98	$3.70	$1.73			$1.73	$45.68	1.70	14.13%		$1.98	$1.98
	2005	$28.39	47.39%	$2.04	$3.88	$1.84			$1.84	$48.15	1.70	14.01%		$2.04	$2.04
	2006	$30.08	41.33%	$2.32	$3.95	$1.63	0.30%	$0.06	$1.69	$51.02	1.70	13.50%		$2.32	$2.32
	2007	$31.87	41.33%	$2.45	$4.18	$1.73	0.30%	$0.06	$1.79	$54.06	1.70	13.50%		$2.45	$2.45
	2008	$33.77	41.33%	$2.60	$4.43	$1.83	0.30%	$0.07	$1.90	$57.28	1.70	13.50%		$2.60	$2.60
	2009	$35.78	41.33%	$2.75	$4.70	$1.94	0.30%	$0.07	$2.01	$60.69	1.70	13.50%		$2.75	$2.75
	2010	$37.92	41.33%	$2.92	$4.97	$2.06	0.30%	$0.08	$2.13	$64.31	1.70	13.50%		$2.92	$2.92
	2011	$40.18	41.33%	$3.09	$5.27	$2.18	0.30%	$0.08	$2.26	$68.14	1.70	13.50%		$3.09	$3.09
	2012	$42.57	41.33%	$3.28	$5.59	$2.31	0.30%	$0.09	$2.39	$72.20	1.70	13.50%		$3.28	$3.28
	2013	$45.11	41.33%	$3.47	$5.92	$2.45	0.30%	$0.09	$2.54	$76.51	1.70	13.50%		$3.47	$3.47
	2014	$47.80	41.33%	$3.68	$6.27	$2.59	0.30%	$0.10	$2.69	$81.07	1.70	13.50%		$3.68	$3.68
	2015	$50.65	41.33%	$3.90	$6.64	$2.75	0.30%	$0.10	$2.85	$85.90	1.70	13.50%		$3.90	$3.90
	2016	$53.66	41.33%	$4.13	$7.04	$2.91	0.30%	$0.11	$3.02	$91.02	1.70	13.50%		$4.13	$4.13
	2017	$56.86	41.33%	$4.38	$7.46	$3.08	0.30%	$0.12	$3.20	$96.44	1.70	13.50%		$4.38	$4.38
	2018	$60.25	41.33%	$4.64	$7.91	$3.27	0.30%	$0.12	$3.39	$102.19	1.70	13.50%		$4.64	$4.64
	2019	$63.84	41.33%	$4.91	$8.38	$3.46	0.30%	$0.13	$3.59	$108.28	1.70	13.50%		$4.91	$4.91
	2020	$67.65	41.33%	$5.21	$8.88	$3.67	0.30%	$0.14	$3.80	$114.73	1.70	13.50%		$5.21	$5.21
	2021	$71.68	41.33%	$5.52	$9.40	$3.89	0.30%	$0.15	$4.03	$121.57	1.70	13.50%		$5.52	$5.52
	2022	$75.95	41.33%	$5.85	$9.96	$4.12	0.30%	$0.15	$4.27	$128.82	1.70	13.50%		$5.85	$5.85
	2023	$80.48	41.33%	$6.20	$10.56	$4.36	0.30%	$0.16	$4.53	$136.49	1.70	13.50%		$6.20	$6.20
	2024	$85.27	41.33%	$6.56	$11.19	$4.62	0.30%	$0.17	$4.80	$144.63	1.70	13.50%		$6.56	$6.56
	2025	$90.35	41.33%	$6.96	$11.85	$4.90	0.30%	$0.18	$5.08	$153.25	1.70	13.50%		$6.96	$6.96
	2026	$95.74	41.33%	$7.37	$12.56	$5.19	0.30%	$0.19	$5.38	$162.38	1.70	13.50%		$7.37	$7.37
	2027	$101.45	41.33%	$7.81	$13.31	$5.50	0.30%	$0.21	$5.71	$172.06	1.70	13.50%		$7.81	$7.81
	2028	$107.49	41.33%	$8.28	$14.10	$5.83	0.30%	$0.22	$6.05	$182.31	1.70	13.50%		$8.28	$8.28
	2029	$113.90	41.33%	$8.77	$14.94	$6.18	0.30%	$0.23	$6.41	$193.18	1.70	13.50%		$8.77	$8.77
	2030	$120.69	41.33%	$9.29	$15.83	$6.54	0.30%	$0.24	$6.79	$204.69	1.70	13.50%		$9.29	$9.29
	2031	$127.88	41.33%	$9.84	$16.78	$6.93	0.30%	$0.26	$7.19	$216.89	1.70	13.50%		$9.84	$9.84
	2032	$135.50	41.33%	$10.43	$17.78	$7.35	0.30%	$0.27	$7.62	$229.82	1.70	13.50%		$10.43	$10.43
	2033	$143.58	41.33%	$11.05	$18.84	$7.78	0.30%	$0.29	$8.08	$243.51	1.70	13.50%		$11.05	$11.05
Second	2034	$152.13	41.33%	$11.71	$19.96	$8.25	0.30%	$0.31	$8.56	$258.03	1.70	13.50%		$11.71	$11.71
Stage	2035	$161.20	41.33%	$12.41	$21.15	$8.74	0.30%	$0.33	$9.07	$273.40	1.70	13.50%		$12.41	$12.41
	2036	$170.81	41.33%	$13.15	$22.41	$9.26	0.30%	$0.35	$9.61	$289.70	1.70	13.50%		$13.15	$13.15
	2037	$180.99	41.33%	$13.93	$23.75	$9.81	0.30%	$0.37	$10.18	$306.96	1.70	13.50%		$13.93	$13.93
	2038	$191.77	41.33%	$14.76	$25.16	$10.40	0.30%	$0.39	$10.79	$325.26	1.70	13.50%		$14.76	$14.76
	2039	$203.20	41.33%	$15.64	$26.66	$11.02	0.30%	$0.41	$11.43	$344.64	1.70	13.50%		$15.64	$15.64
	2040	$215.31	41.33%	$16.58	$28.25	$11.67	0.30%	$0.44	$12.11	$365.18	1.70	13.50%		$16.58	$16.58
	2041	$228.15	41.33%	$17.56	$29.93	$12.37	0.30%	$0.46	$12.83	$386.95	1.70	13.50%	$386.95	$17.56	$404.51
												Internal Rate of Return			10.68%

Source:

[A] First Stage is average from Value Line. Second stage is prior years' book plus value from Col.[8]
[B] First Stage is (Col. [4]-Col.[3])/Col.[4]). Second stage is equal to final value of first stage.
[C] First Stage is from Value Line. Second stage is Col. [4] x (1-Col. [2])
[D] First Stage is from Value line. Second stage is average of current and prior year's value from Col. [1] x Col. [11]
[E] Col. [4] - Col. [3]
[F] Schedule JAR 8
[G] Col. [5] + Col. [7]
[H] Col. [7] + Col. [8]
[I] Col. [1] x Col. [10]
[J] Schedule JAR 3, P. 1
[K] First stage is Col. [4]/Avg. of Current and prior year's Col. [1]. Second stage is from Schedule JAR 4, P. 1
[L] - Col. [9] for year of purchase, + Col. [9] for year of sale.
[M] Col. [3]
[N] Col. [12] + Col. [13]

COMPARATIVE ELECTRIC COMPANIES
COMPLEX DCF METHOD
Based on Market Price for Year Ende 11/30/01

	Year	[1] Year End Book	[2] Retentio Rate	[3] Dividend	[4] Earnings Per Shar	[5] Retained Earnings Per Shar	[6] External Financing Rate	[7] Increme to book from Ext. Fin.	[8] Total Increme to Book	[9] Market Price	[10] Mkt to Book	[11] Expect. Ret. on Equity	[12] Cash Fl. from Stock Trans.	[13] Cash Fl. from Div.	[14] Total Cash Flow
		[A]	[B]	$0.00 [C]	[D]	[E]	[F]	[G]	$0.00 [H]	M/B Chan [I]	0.00% [J]	[K]	[L]	[M]	[N]
	2001	$22.76		$1.83						$43.79	1.92		($43.79)		($43.79)
	2002	$24.03	44.87%	$1.85	$3.36	$1.51			$1.51	$46.23	1.92	14.38%		$1.85	$1.85
First	2003	$25.48	45.79%	$1.92	$3.53	$1.62			$1.62	$49.03	1.92	14.27%		$1.92	$1.92
Stage	2004	$26.93	46.63%	$1.98	$3.70	$1.73			$1.73	$51.82	1.92	14.13%		$1.98	$1.98
	2005	$28.39	47.39%	$2.04	$3.88	$1.84			$1.84	$54.62	1.92	14.01%		$2.04	$2.04
	2006	$30.10	41.33%	$2.32	$3.95	$1.63	0.30%	$0.08	$1.71	$57.92	1.92	13.50%		$2.32	$2.32
	2007	$31.92	41.33%	$2.46	$4.19	$1.73	0.30%	$0.09	$1.82	$61.41	1.92	13.50%		$2.46	$2.46
	2008	$33.84	41.33%	$2.60	$4.44	$1.83	0.30%	$0.09	$1.93	$65.11	1.92	13.50%		$2.60	$2.60
	2009	$35.88	41.33%	$2.76	$4.71	$1.94	0.30%	$0.10	$2.04	$69.04	1.92	13.50%		$2.76	$2.76
	2010	$38.05	41.33%	$2.93	$4.99	$2.06	0.30%	$0.10	$2.16	$73.21	1.92	13.50%		$2.93	$2.93
	2011	$40.34	41.33%	$3.10	$5.29	$2.19	0.30%	$0.11	$2.30	$77.62	1.92	13.50%		$3.10	$3.10
	2012	$42.78	41.33%	$3.29	$5.61	$2.32	0.30%	$0.12	$2.43	$82.31	1.92	13.50%		$3.29	$3.29
	2013	$45.36	41.33%	$3.49	$5.95	$2.46	0.30%	$0.12	$2.58	$87.27	1.92	13.50%		$3.49	$3.49
	2014	$48.09	41.33%	$3.70	$6.31	$2.61	0.30%	$0.13	$2.74	$92.54	1.92	13.50%		$3.70	$3.70
	2015	$50.99	41.33%	$3.92	$6.69	$2.76	0.30%	$0.14	$2.90	$98.12	1.92	13.50%		$3.92	$3.92
	2016	$54.07	41.33%	$4.16	$7.09	$2.93	0.30%	$0.15	$3.08	$104.04	1.92	13.50%		$4.16	$4.16
	2017	$57.33	41.33%	$4.41	$7.52	$3.11	0.30%	$0.15	$3.26	$110.31	1.92	13.50%		$4.41	$4.41
	2018	$60.79	41.33%	$4.68	$7.97	$3.29	0.30%	$0.16	$3.46	$116.97	1.92	13.50%		$4.68	$4.68
	2019	$64.46	41.33%	$4.96	$8.45	$3.49	0.30%	$0.17	$3.67	$124.02	1.92	13.50%		$4.96	$4.96
	2020	$68.34	41.33%	$5.26	$8.96	$3.70	0.30%	$0.18	$3.89	$131.50	1.92	13.50%		$5.26	$5.26
	2021	$72.47	41.33%	$5.58	$9.50	$3.93	0.30%	$0.19	$4.12	$139.44	1.92	13.50%		$5.58	$5.58
	2022	$76.84	41.33%	$5.91	$10.08	$4.16	0.30%	$0.21	$4.37	$147.85	1.92	13.50%		$5.91	$5.91
	2023	$81.47	41.33%	$6.27	$10.69	$4.42	0.30%	$0.22	$4.64	$156.77	1.92	13.50%		$6.27	$6.27
	2024	$86.39	41.33%	$6.65	$11.33	$4.68	0.30%	$0.23	$4.91	$166.22	1.92	13.50%		$6.65	$6.65
	2025	$91.60	41.33%	$7.05	$12.01	$4.96	0.30%	$0.25	$5.21	$176.25	1.92	13.50%		$7.05	$7.05
	2026	$97.13	41.33%	$7.47	$12.74	$5.26	0.30%	$0.26	$5.53	$186.88	1.92	13.50%		$7.47	$7.47
	2027	$102.98	41.33%	$7.93	$13.51	$5.58	0.30%	$0.28	$5.86	$198.16	1.92	13.50%		$7.93	$7.93
	2028	$109.20	41.33%	$8.40	$14.32	$5.92	0.30%	$0.29	$6.21	$210.11	1.92	13.50%		$8.40	$8.40
	2029	$115.78	41.33%	$8.91	$15.19	$6.28	0.30%	$0.31	$6.59	$222.78	1.92	13.50%		$8.91	$8.91
	2030	$122.77	41.33%	$9.45	$16.10	$6.65	0.30%	$0.33	$6.98	$236.22	1.92	13.50%		$9.45	$9.45
	2031	$130.17	41.33%	$10.02	$17.07	$7.06	0.30%	$0.35	$7.41	$250.47	1.92	13.50%		$10.02	$10.02
	2032	$138.03	41.33%	$10.62	$18.10	$7.48	0.30%	$0.37	$7.85	$265.58	1.92	13.50%		$10.62	$10.62
	2033	$146.35	41.33%	$11.26	$19.20	$7.93	0.30%	$0.39	$8.33	$281.60	1.92	13.50%		$11.26	$11.26
Second	2034	$155.18	41.33%	$11.94	$20.35	$8.41	0.30%	$0.42	$8.83	$298.59	1.92	13.50%		$11.94	$11.94
Stage	2035	$164.54	41.33%	$12.66	$21.58	$8.92	0.30%	$0.44	$9.36	$316.60	1.92	13.50%		$12.66	$12.66
	2036	$174.47	41.33%	$13.43	$22.88	$9.46	0.30%	$0.47	$9.93	$335.70	1.92	13.50%		$13.43	$13.43
	2037	$184.99	41.33%	$14.24	$24.26	$10.03	0.30%	$0.50	$10.52	$355.95	1.92	13.50%		$14.24	$14.24
	2038	$196.15	41.33%	$15.10	$25.73	$10.63	0.30%	$0.53	$11.16	$377.43	1.92	13.50%		$15.10	$15.10
	2039	$207.98	41.33%	$16.01	$27.28	$11.27	0.30%	$0.56	$11.83	$400.19	1.92	13.50%		$16.01	$16.01
	2040	$220.53	41.33%	$16.97	$28.92	$11.95	0.30%	$0.59	$12.55	$424.33	1.92	13.50%		$16.97	$16.97
	2041	$233.83	41.33%	$18.00	$30.67	$12.67	0.30%	$0.63	$13.30	$449.93	1.92	13.50%	$449.93	$18.00	$467.93
												Internal Rate of Return			10.18%

Source:

[A] First Stage is average from Value Line. Second stage is prior years' book plus value from Col.[8]
[B] First Stage is (Col. [4]-Col.[3]/Col.[4]). Second stage is equal to final value of first stage.
[C] First Stage is from Value Line. Second stage is Col. [4] x (1-Col. [2])
[D] First Stage is from Value line. Second stage is average of current and prior year's value from Col. [1] x Col. [11]
[E] Col. [4] - Col. [3]
[F] Schedule JAR 8
[G] Col. [5] + Col. [7]
[H] Col. [7] + Col. [8]
[I] Col. [1] x Col. [10]
[J] Schedule JAR 3, P. 1
[K] First stage is Col. [4]/Avg. of Current and prior year's Col. [1]. Second stage is from
[L] - Col. [9] for year of purchase, + Col. [9] for year of sale.
[M] Col. [3]
[N] Col. [12] + Col. [13]

COMPARATIVE ELECTRIC COMPANIES
VALUE LINE'S EARNINGS PROJECTIONS

Earnings Per Share Forecast by Value Line

	2001	2002	2003	2004	2005
Allegheny Energy	$4.10	$4.50	$4.98	$5.47	$5.95
Alliant Energy	$2.45	$2.60	$2.70	$2.80	$2.90
Ameren	$3.35	$3.45	$3.55	$3.65	$3.75
Cinergy	$2.75	$2.90	$2.97	$3.03	$3.10
FPL Group, Inc.	$4.60	$4.75	$4.92	$5.08	$5.25
Progress Engergy	$3.40	$4.05	$4.30	$4.55	$4.80
Teco Energy, Inc.	$2.20	$2.30	$2.37	$2.43	$2.50
Wisconsin Energy	$2.05	$2.35	$2.48	$2.62	$2.75
AVERAGE	$3.11	$3.36	$3.53	$3.70	$3.88

Source: Most current Value Line at time of Prep

COMPARATIVE ELECTRIC COMPANIES
VALUE LINE'S BOOK VALUE PROJECTIONS

Book Value Per Share Forecast by Value Line

	2001	2002	2003	2004	2005
Allegheny Energy	$22.10	$25.15	$28.93	$32.72	$36.50
Alliant Energy	$26.25	$26.85	$27.65	$28.45	$29.25
Ameren	$24.10	$25.00	$25.42	$25.83	$26.25
Cinergy	$18.50	$19.65	$20.83	$22.02	$23.20
FPL Group, Inc.	$31.20	$31.80	$32.37	$32.93	$33.50
Progress Engergy	$28.35	$30.20	$32.43	$34.67	$36.90
Teco Energy, Inc.	$13.25	$13.90	$14.60	$15.30	$16.00
Wisconsin Energy	$18.30	$19.65	$21.60	$23.55	$25.50
AVERAGE	$22.76	$24.03	$25.48	$26.93	$28.39

Source: Most current Value Line at time of Prep

COMPARATIVE ELECTRIC COMPANIES **Schecule JAR 6**

Value Line's Projection of Dividends Per Share

AMOUNT:	2000	2001	2002	2003	2004	2005	Compound Annual Growth from 2000 to 2005
		Value Line Estimate					
Allegheny Energy	$1.72	$1.72	$1.76	$1.80	$1.84	$1.88	1.79%
Alliant Energy	$2.00	$2.00	$2.00	$2.00	$2.00	$2.00	0.00%
Ameren	$2.54	$2.54	$2.54	$2.57	$2.59	$2.62	0.62%
Cinergy	$1.80	$1.80	$1.80	$2.00	$2.20	$2.40	5.92%
FPL Group, Inc.	$2.16	$2.24	$2.32	$2.40	$2.47	$2.55	3.38%
Progress Engergy	$2.08	$2.14	$2.20	$2.25	$2.31	$2.36	2.56%
Teco Energy, Inc.	$1.33	$1.37	$1.41	$1.47	$1.54	$1.60	3.77%
Wisconsin Energy	$1.37	$0.80	$0.80	$0.83	$0.87	$0.90	-8.06%
Average	$1.88	$1.83	$1.85	$1.92	$1.98	$2.04	1.25%
Percent Change from Prior Yr.		-2.60%	1.51%	3.33%	3.22%	3.12%	

PERCENT CHANGE FROM PRIOR YEAR:	2001	2002	2003	2004	2005
Allegheny Energy	0.00%	2.33%	2.27%	2.22%	2.17%
Alliant Energy	0.00%	0.00%	0.00%	0.00%	0.00%
Ameren	0.00%	0.00%	1.05%	1.04%	1.03%
Cinergy	0.00%	0.00%	11.11%	10.00%	9.09%
FPL Group, Inc.					
Progress Engergy	2.88%	2.80%	2.42%	2.37%	2.31%
Teco Energy, Inc.	3.01%	2.92%	4.49%	4.30%	4.12%
Wisconsin Energy	-41.61%	0.00%	4.17%	4.00%	3.85%
AVERAGE	-5.10%	1.15%	3.65%	3.42%	3.22%

Source: Value Line

Schedule JAR 7

COMPARATIVE ELECTRIC COMPANIES
Percentage of Common Equity in the Capital Structure
Excluding Short-term Debt

ELECTRIC COMPANIES SELETED BY C. A. BENORE

	1994	1995	1996	1997	1998	1999	2000
Allegheny Energy	45.1%	46.6%	45.8%	48.8%	46.4%	42.1%	39.8%
Alliant Energy	54.1%	54.9%	59.0%	54.0%	49.2%	57.4%	50.2%
Ameren	52.6%	53.9%	53.9%	52.4%	54.8%	53.5%	51.8%
Cinergy	43.1%	46.6%	48.6%	52.2%	48.5%	46.3%	48.2%
FPL Group, Inc.	47.7%	54.2%	56.9%	60.4%	66.6%	59.2%	57.1%
Progress Engergy	49.2%	48.3%	50.2%	53.2%	52.4%	52.5%	47.6%
Teco Energy, Inc.	50.1%	52.6%	55.4%	57.2%	54.1%	54.0%	52.3%
Wisconsin Energy	57.0%	57.2%	57.4%	54.4%	51.7%	45.9%	40.5%
AVERAGE	49.86%	51.79%	53.40%	54.08%	52.96%	51.36%	48.44%

Southern Co.	47.6%	47.4%	49.7%	43.5%	42.9%	37.8%	50.6%

Source: Most Current Value Line at Time of Prep

Schedule JAR 8

COMPARATIVE COMPANIES
EXTERNAL FINANCING RATE
(Millions of Shares)

	Common Stock Outstanding		Compound
	2000	**2004-06**	**Annual Growth**
ELECTRIC COMPANIES SELETED BY C.A. BENORE			
Allegheny Energy	110.44	127.00	2.83%
Alliant Energy	79.01	79.20	0.05%
Ameren	137.22	137.20	0.00%
Cinergy	158.97	160.00	0.13%
FPL Group, Inc.	175.77	170.00	-0.67%
Progress Engergy	206.90	217.00	0.96%
Teco Engergy	135.00	130.00	-0.75%
Wisconsin Energy	118.65	114.00	-0.80%
	140.25	141.80	
		Average	0.22%
		Median	0.02%
		Round to [A]	0.30%
Southern Co.	682.00	730.00	1.37%

[A] used 0.40% because this sample group is lower than larger electric utility groups.

Source:
Value Line

Schedule JAR 9

COST OF EQUITY INDICATED BY INFLATION RISK PREMIUM METHOD

1	Interest rate on 30 year treasury bonds	Feb-31	5.44%	[A]	
2	Interest rate on inflation indexed 30 year treasury bonds	Apr-29	3.45%	[A]	
3	Difference		1.99%		Line 1 minus Line 2
4	Round to		2.00%		
RISK PREMIUM					
5	Historic Return on Common Stocks Net of Inflation	6.60%	to	7.20%	[B]
6	Inflation expectation	2.00%		2.00%	Line 4
7	Inflation Risk Premium Indicated Cost of Equity for Company of Average Risk	8.60%	to	9.20%	
	Mid-point		8.90%		
ADJUSTMENT TO RISK PREMIUM					
8	Yield on 90 day treasury bills		1.33%		[A]
9	Return over 90 day treasury bills	5.27%		5.87%	Line 5 minus line 8
10	Beta of Electric Companies		0.52		Schedule JAR 3, P. 3
11	Risk adjusted equity premium	2.75%		3.06%	Line 9 times Line 10
12	Reduction in equity premium applicable to utility companies	2.52%		2.81%	Line 9 minus line 11
RESULT					
13	Risk premium applicable to electric companies	6.08%		6.39%	Line 7 minus line 12
	Mid-point		6.23%		

Sources:
[A] New York Times:U.S. Treasuries, 12/21/01
[B] Page 12 of Stocks for the Long Run, Second Edition by Jeremy J. Siegel, 1998, McGraw Hill.

RISK PREMIUM/CAPM METHOD
COST OF EQUITY FOR COMMON STOCK :

Schedule JAR 10, P. 1

	Average Risk	Risk Premium Adjustment	Applicable to Electric Utility Based upon a beta of 0.52 [A]
Based on Long-term Treasury Bonds			
Interest rate on 20 year treasury bonds	5.26% [B]		5.26%
Applicable Risk Premium	4.00% [C]	-1.91% [D]	2.09%
	9.26%		**7.34%**
Based on Corporate Bonds			
Interest on corporate bonds	7.11% [D]		7.11%
Applicable Risk Premium	3.51% [C]	-1.68% [D]	1.83%
	10.62%		**8.94%**
Based on Intermediate Term U.S Treasury Bonds			
Intereset on 10 year U.S. Treasury Bonds	5.08% [B]		5.08%
Applicable Risk Premium	3.90% [C]	-1.87% [D]	2.03%
	8.98%		**7.11%**
Based on U.S. Treasury Bills			
Interest on 90 day U.S. Treasury Bills	1.60% [B]		1.60%
Applicable Risk Premium	5.33% [C]	-2.55% [D]	2.78%
	6.93%		**4.38%**

SUMMARY OF INDICATED RISK PREMIUM FOR EQUITY WITH AVERAGE RISK

Lowest	6.93%	4.38%
Highest	10.62%	8.94%
Average	**8.95%**	**6.94%**

Sources:

[A] Schedule JAR 3, P. 3
[B] BondsOnline, 12/21/01
[C] Schedule JAR 10, P. 2 Average of 2.75% and 5.87% from Schedule JAR 9
[D] Amount in last column determined by multiplying the amount in the first column by the beta. The amount in the middle column is the difference between the amount in the first column and the amount I the last column. Used AA Corporate bonds.

RISK PREMIUM BASED UPON ANALYSIS OF HISTORIC RETURNS

Schedule JAR 10, P. 2

Compound annual returns from 1926 through 1999:

Large Common Stocks	11.35%
Corporate Bonds	5.61%
Long-term U.S. Treasury Bonds	5.12%
Intermediate Term U.S. Treasury Bonds	5.22%
U.S. Treasury Bills	3.79%
Inflation	3.07%

Average diference from Long-term U.S. Treasury Bonds:

Large Common Stocks	6.23%
Corporate Bonds	0.49%
Long-term U.S. Treasury Bonds	0.00%
Intermediate Term U.S. Treasury Bonds	**0.10%**
U.S. Treasury Bills	-1.33%
Inflation	-2.05%

Common Stock Risk Premium Consistent With Current Market Environment:

Long-term U.S. Treasury Bonds	4.00% or less.	See graphs on Schedule JAR 10, P. 5
Corporate Bonds	**3.51% or less.**	**Risk premium on large common stocks minus average** diffemce from corporate bonds per above table
Intermediate Term U.S. Treasury Bonds	**3.90% or less.**	**Risk premium on large common stocks minus average** diffemce from corporate bonds per above table.
U.S. Treasury Bills	**5.33% or less.**	**Risk premium on large common stocks minus average** diffemce from corporate bonds per above table.
Inflation	**6.05% or less.**	**Risk premium on large common stocks minus average** diffemce from corporate bonds per above table.

Response to deposition request:
Explanation of footnote on Schedule JAR 10, P. 2:

The numbers that are developed start with the 4.00% risk premium differential between long-term U.S. treasury bonds and common stocks.
Then, this 4.00% is adjusted based upon the average diffemce between the return on long-term government bonds and the other factors indicated.

Value of $100 invested at end of of 1925

	Large Company Stocks	Long-Term Corporate Bonds	Long-term Government Bonds	Intermediate Term Government Bonds	U.S. Treasury Bills	Inflation	*Large Company Stocks*	*Long-Term Corporate Bonds*	*Long-term Government Bonds*	*Intermediate Term Government Bonds*	*U.S. Treasury Bills*	*Inflation*	$100 Investment Esc at Pub Ut Geom Averag	$100 Investment Esc at Pub Ut Arithmetic Average
1925							100	100	100	100	100	100		
1926	11 62%	7.37%	7.77%	5.38%	3.27%	-1 49%	111.62	107 37	107.77	105.38	103.27	98 51	111.35	113.28
1927	37.49%	7.44%	8 93%	4 52%	3 12%	-2 08%	153 47	115.36	117 39	110.14	106.49	96 46	123 98	128.32
1928	43 61%	2.84%	0 10%	0.92%	3.56%	-0 97%	220.39	118 63	117.51	111.16	110.28	95 53	138 05	145.36
1929	-8 42%	3.27%	3 42%	6 01%	4.75%	0.20%	201 84	122.51	121.53	117.84	115 52	95.72	153 71	164.66
1930	-24 90%	7.98%	4 66%	6.72%	2 41%	-6 03%	151 58	132 29	127 19	125.76	118.31	89 94	171 16	186 53
1931	-43 34%	-1.85%	-5 31%	-2.32%	1 07%	-9 52%	85 88	129 84	120 44	122.84	119 57	81.38	190 58	211 30
1932	-8.19%	10 82%	16 84%	8 81%	0 96%	-10 30%	78 85	143 89	140 72	133.66	120 72	73 00	212 20	239 35
1933	53 99%	10.38%	-0 07%	1.83%	0 30%	0.51%	121 42	158.83	140.62	136 11	121 08	73 37	236 28	271 14
1934	-1 44%	13.84%	10 03%	9 00%	0 16%	2.03%	119 67	180 81	154.73	148 36	121.28	74.86	263 09	307 14
1935	47.67%	9.61%	4 98%	7.01%	0 17%	2 99%	176 72	198.19	162 43	158 76	121.48	77 10	292.94	347 93
1936	33 92%	6.74%	7.52%	3 06%	0.18%	1.21%	236 67	211.54	174 65	163 61	121 70	78 03	326 18	394 13
1937	-35.03%	2.75%	0 23%	1.56%	0 31%	3 10%	153 76	217 36	175.06	166 17	122.08	80 45	363.19	446 46
1938	31 12%	6.13%	5 53%	6.23%	-0 02%	-2 78%	201 61	230 69	184 73	176 52	122.05	78 22	404 41	505 74
1939	-0 41%	3 97%	5 94%	4 52%	0.02%	-0 48%	200 79	239 84	195 70	184.50	122.08	77 84	450 29	572 90
1940	-9 78%	3 39%	6 09%	2 96%	0 00%	0 96%	181 15	247.97	207 62	189 96	122.08	78 59	501 39	648 98
1941	-11.59%	2.73%	0 93%	0 50%	0 06%	9.72%	160 15	254 74	209 55	190 91	122 15	86.23	558 28	735 15
1942	20 34%	2.60%	3.22%	1 94%	0.27%	9.29%	192 73	261.37	216 30	194.61	122 48	94.24	621 63	832 77
1943	25.90%	2 83%	2 08%	2.81%	0.35%	3 16%	242 65	268.76	220 80	200 08	122.91	97.21	692 16	943 35
1944	19.75%	4.73%	2.81%	1 80%	0 33%	2 11%	290 57	281 48	227.00	203.68	123.31	99 26	770 70	1,068 62
1945	36 44%	4 08%	10 73%	2 22%	0.33%	2 25%	396 45	292.96	251 36	208.20	123 72	101 50	858 15	1,210 52
1946	-8 07%	1 72%	-0 10%	1.00%	0 35%	18 16%	364.48	298 00	251 11	210.28	124 15	119 93	955.53	1,371 26
1947	5 71%	-2 34%	-2 62%	0.91%	0 50%	9 01%	385.27	291.03	244 53	212 20	124.78	130.74	1,063 95	1,553.35
1948	5.50%	4.14%	3 40%	1.85%	0 81%	2 71%	406 48	303 07	252.84	216.12	125 79	134 28	1,184 67	1,759 61
1949	18.79%	3.31%	6 45%	2.32%	1.10%	-1.80%	482 83	313 11	269 15	221.14	127.17	131.86	1,319 10	1,993 27
1950	31.71%	2 12%	0.06%	0.70%	1 20%	5.79%	635 94	319.74	269 31	222 69	128.70	139 50	1,468.78	2,257.95
1951	24 02%	-2.69%	-3 93%	0 36%	1 49%	5.87%	788 69	311 14	258 73	223 49	130 61	147.69	1,635 44	2,557 78
1952	18 37%	3.52%	1 16%	1 63%	1 86%	0 88%	933.57	322 10	261.73	227 13	132 78	148 99	1,821 01	2,897 42
1953	-0 99%	3 41%	3 64%	3 23%	1.82%	0 62%	924 33	333 08	271 26	234 47	135.20	149 91	2,027 64	3,282 16
1954	52 62%	5.39%	7.19%	2.68%	0 86%	-0 50%	1,410 71	351 03	290 76	240 75	136.36	149 16	2,257 71	3,717 99
1955	31.56%	0 48%	-1.29%	-0.65%	1 57%	0 37%	1,855 94	352.72	287.01	239 19	138 50	149 71	2,513 89	4,211 70
1956	6.56%	-6.81%	-5 59%	-0 42%	2 46%	2 86%	1,977.68	328.70	270 97	238 18	141 91	153 99	2,799 14	4,770 96
1957	-10 78%	8 71%	7.46%	7 84%	3 14%	3 02%	1,764 49	357 33	291.18	256.85	146.36	158 64	3,116 76	5,404 49
1958	43.36%	-2.22%	-6.09%	-1 29%	1 54%	1.76%	2,529 57	349 39	273 45	253 54	148.62	161 44	3,470 42	6,122 14
1959	11 96%	-0 97%	-2 26%	-0 39%	2 95%	1 50%	2,832 11	346 00	267 27	252 55	153 00	163 86	3,864.20	6,935 08
1960	0 47%	9 07%	13 78%	11 76%	2 66%	1 48%	2,845 42	377 39	304.10	282 25	157.07	166 28	4,302 67	7,855 98
1961	26 89%	4.82%	0.97%	1.85%	2 13%	0 67%	3,610 55	395 58	307 05	287 47	160 42	167 40	4,790 89	8,899 16
1962	-8 73%	7 95%	6 89%	5 56%	2 73%	1 22%	3,295.35	427 03	328 20	303 46	164 80	169 44	5,334 51	10,080 86
1963	22.80%	2 19%	1.21%	1 64%	3 12%	1.65%	4,046 69	436 38	332 17	308 43	169 94	172 23	5,939 81	11,419 47
1964	16.48%	4 77%	3 51%	4 04%	3 54%	1 19%	4,713 59	457.19	343 83	320 90	175 96	174 28	6,613 80	12,935.84
1965	12.45%	-0.46%	0.71%	1 02%	3.93%	1.92%	5,300.43	455 09	346 27	324 17	182 87	177.63	7,364.26	14,653 56
1966	-10.06%	0.20%	3.65%	4 69%	4 76%	3 35%	4,767.21	456 00	358 91	339.37	191 58	183 58	8,199 88	16,599 37
1967	23 98%	-4.95%	-9 18%	1.01%	4 21%	3 04%	5,910 38	433.43	325 97	342.80	199 64	189 16	9,130.31	18,803 57
1968	11 06%	2.57%	-0.26%	4 54%	5 21%	4 72%	6,564 07	444 57	325 12	358 36	210.04	198 09	10,166.32	21,300 45
1969	-8.50%	-8 09%	-5.07%	-0 74%	6 58%	6.11%	6,006 13	408 60	308 63	355 71	223.86	210 19	11,319 88	24,128 89
1970	4.01%	18 37%	12 11%	16 86%	6 52%	5 49%	6,246.97	483 66	346 01	415 88	238 46	221 73	12,604 34	27,332.92
1971	14.31%	11 01%	13.23%	8 72%	4.39%	3 36%	7,140 91	536 91	391.79	451.93	248.93	229 18	14,034.55	30,962 40
1972	18 98%	7.26%	5.69%	5.16%	3 84%	3 41%	8,496 26	575 89	414 08	475.25	258 49	237.00	15,627.04	35,073 83
1973	-14 66%	1.14%	-1 11%	4.61%	6.93%	8 80%	7,250 71	582.46	409 48	497 16	276.40	257.85	17,400.22	39,731.20
1974	-26 47%	-3 06%	4 35%	5.69%	8 00%	12 20%	5,331 44	564.63	427 30	525 45	298 51	289 31	19,374 61	45,007 02
1975	37 20%	14 64%	9.20%	7.83%	5.80%	7 01%	7,314 74	647 30	466 61	568 59	315 82	309.59	21,573 04	50,983 41
1976	23 84%	18 65%	16 75%	12 87%	5 08%	4 81%	9,058 56	768 02	544 76	639 51	331.87	324 48	24,020 91	57,753 39
1977	-7.18%	1 71%	-0 69%	1 41%	5 12%	6 77%	8,408 17	781 15	541 01	648.53	348 86	346 45	26,746.55	65,422 33
1978	6 56%	-0.07%	-1 18%	3 49%	7.18%	9 03%	8,959 75	780.60	534 62	671.16	373.91	377.74	29,781 46	74,109 62
1979	18 44%	-4 18%	-1.23%	4 09%	10 38%	13.31%	10,611.92	747.97	528 05	698 61	412 72	428 01	33,160.74	83,950 48
1980	32 42%	-2.76%	-3 95%	3 91%	11.24%	12 40%	14,052 31	727 33	507.19	725 93	459.11	481.09	36,923 46	95,098 08
1981	-4 91%	-1.24%	1.86%	9 45%	14 71%	8 94%	13,362 34	718.31	518 62	794 53	526 64	524 10	41,113.14	107,725 95
1982	21 41%	42 56%	40.36%	29.10%	10.54%	3 87%	16,223 22	1,024 03	725 13	1,025.74	582 15	544 38	45,778.21	122,030 65
1983	22.51%	6 26%	0 65%	7.41%	8 80%	3 80%	19,875 06	1,088 13	729 84	1,101 74	633 38	565.07	50,972 63	138,234 84
1984	6 27%	16 86%	15 48%	14 02%	9 85%	3 95%	21,121.23	1,271 59	842 82	1,256.21	695.77	587.39	56,756 46	156,590 74
1985	32 16%	30.09%	30 97%	20.33%	7.72%	3 77%	27,913 82	1,654 21	1,103 85	1,511 59	749 48	609.53	63,196 57	177,384 09
1986	18 47%	19 85%	24 53%	15 14%	6 16%	1 13%	33,069 50	1,982 57	1,374 62	1,740 45	795 65	616 42	70,367 44	200,938 54
1987	5.23%	-0.27%	-2.71%	2.90%	5.47%	4 41%	34,799 04	1,977.22	1,337.37	1,790 92	839.17	643 60	76,351.98	227,620 73
1988	16 81%	10 70%	9 67%	6 10%	6.35%	4 42%	40,648 75	2,188 78	1,466.69	1,900.17	892 46	672.05	87,242.52	257,845 99
1989	31 49%	16.23%	18.11%	13 29%	8 37%	4 65%	53,449 05	2,544 02	1,732 31	2,152.70	967.16	703 30	97,141 86	292,084 81
1990	-3.17%	6.78%	6.18%	9 73%	7.81%	6.11%	51,754.71	2,716 50	1,839 36	2,362.16	1,042.70	746 27	108,164 48	330,870 11
1991	30.55%	19.89%	19.30%	15.46%	5.60%	3 06%	67,565.78	3,256 81	2,194.36	2,727.35	1,101.09	769 11	120,437 82	374,805 64
1992	7.67%	9.39%	8.05%	7.19%	3.51%	2.90%	72,748.07	3,562.63	2,371 01	2,923 44	1,139 73	791 41	134,103 81	424,575 27
1993	9.99%	13.19%	18.24%	11.24%	2.90%	2 75%	80,015 61	4,032.54	2,803 48	3,252 04	1,172.79	813.17	149,320.46	480,953 71
1994	1.31%	-5.76%	-7.77%	-5.14%	3 90%	2.67%	81,063 81	3,800.26	2,585.85	3,084 88	1,218 53	834.89	166,263.74	544,818 51
1995	37.43%	27.20%	31.67%	16.80%	5 60%	2.54%	111,405 99	4,833.94	3,404 52	3,603.14	1,286.76	856.09	185,129 56	617,163 78
1996	23 07%	1.40%	-0.93%	2 10%	5 21%	3 32%	137,107.36	4,901.61	3,372.86	3,678.81	1,353.80	884.51	206,138 08	699,115.62
1997	33.36%	12.95%	15.85%	8 38%	5 26%	1 70%	182,846.37	5,538 37	3,907.46	3,987 10	1,425.01	899.55	229,526.18	791,949.68
1998	28 58%	10.76%	13.06%	10.21%	4.86%	1 61%	235,103 86	6,132 08	4,417 77	4,394 18	1,494.27	914 03	255,570 34	897,110.96
1999	21.04%	-7.45%	-8 96%	-1.77%	4.68%	2 68%	284,569.72	5,675.24	4,021 94	4,316.40	1,564.20	938.53	284,569.72	1,016,236.39
Arithmetic Mean	13 28%	5 94%	5.50%	5 37%	3 83%		11 35% Geometric Mean	5 61% Geometric Mean	5 12% Geometric Mean	5.22% Geometric Mean	3.79% Geometric Mean	3.07% Geometric Mean		

Source of data Testimony of Roger Ibbotson, ICC Docket No. 98-0252, Ameritech Illinois

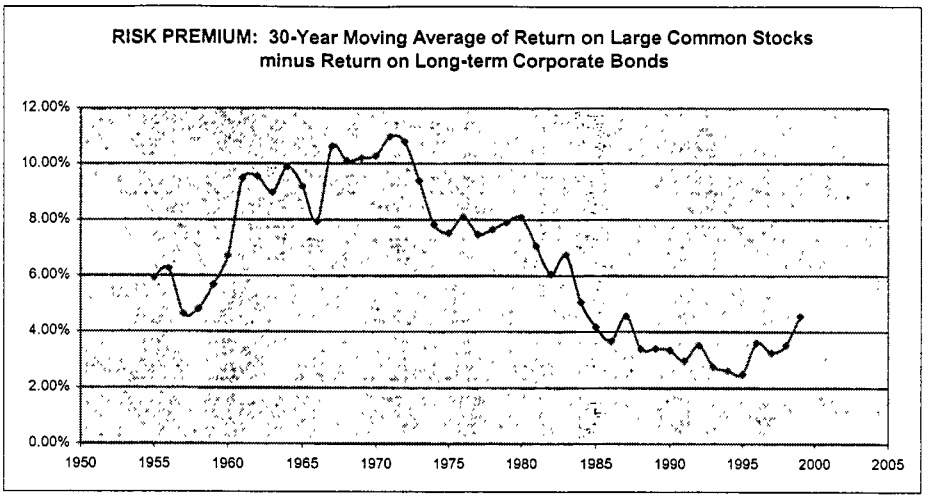
30 Year Moving Average

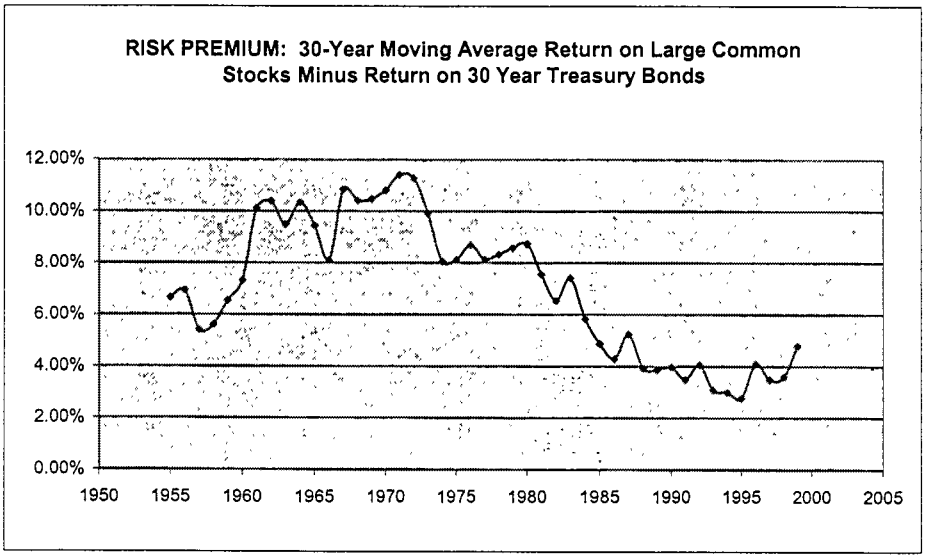
	Returns on Large Company Stocks	Returns on Long-Term Corporate Bonds	Returns on Long-term Government Bonds	Returns on Intermediate Term Government Bills	Returns on U S Treasury
1955	10 23%	4.29%	3 58%	2 95%	1.09%
1956	10 06%	3 80%	3.12%	2.76%	1 07%
1957	8 48%	3 84%	3 07%	2.86%	1 07%
1958	8.47%	3 67%	2 86%	2 79%	1.00%
1959	9 20%	3 52%	2 66%	2 57%	0 94%
1960	10.27%	3.56%	2.95%	2 73%	0 95%
1961	13 27%	3.78%	3.17%	2.87%	0 98%
1962	13 25%	3 69%	2 86%	2.77%	1 04%
1963	12 40%	3 43%	2 91%	2 76%	1 14%
1964	13 03%	3 14%	2 70%	2 61%	1 25%
1965	12 00%	2.81%	2 56%	2 41%	1.37%
1966	10.53%	2 59%	2 43%	2 46%	1 52%
1967	12 93%	2 33%	2 09%	2 44%	1.65%
1968	12 31%	2 21%	1 90%	2 39%	1 83%
1969	11.99%	1 79%	1.53%	2.21%	2.04%
1970	12 53%	2.25%	1.72%	2.64%	2 26%
1971	13.49%	2 52%	2 11%	2 91%	2 40%
1972	13 45%	2 67%	2 19%	3 02%	2 52%
1973	11.99%	2 61%	2.08%	3.08%	2 74%
1974	10 18%	2.35%	2.13%	3.21%	2 99%
1975	10 20%	2 68%	2.08%	3.39%	3 17%
1976	11.30%	3 21%	2.62%	3 78%	3 33%
1977	10.82%	3 35%	2.68%	3.79%	3 49%
1978	10 86%	3 20%	2 53%	3 85%	3 70%
1979	10 85%	2 95%	2.27%	3.91%	4 00%
1980	10 87%	2 78%	2.13%	4 02%	4 33%
1981	9 89%	2 83%	2 33%	4 32%	4.76%
1982	9.98%	3 93%	3 46%	5 15%	5.05%
1983	10.77%	4 03%	3.35%	5 29%	5 28%
1984	9 44%	4 38%	3.61%	5 66%	5 58%
1985	9 46%	5 29%	4.59%	6.34%	5 79%
1986	9 84%	6 17%	5 56%	6 85%	5 91%
1987	10 45%	5 87%	5.21%	6.69%	5 99%
1988	9 70%	6 31%	5 76%	6 94%	6.16%
1989	10 29%	6 88%	6 43%	7 40%	6 34%
1990	10 15%	6 80%	6 18%	7.34%	6 51%
1991	10 26%	7 28%	6 78%	7.79%	6 63%
1992	10.87%	7 33%	6.81%	7.84%	6 66%
1993	10 46%	7.69%	7 37%	8 17%	6 65%
1994	9 95%	7 31%	6 96%	7.84%	6 66%
1995	10.68%	8 19%	7.92%	8 36%	6 72%
1996	11.85%	8 24%	7.75%	8.27%	6 74%
1997	12 12%	8 86%	8.63%	8.52%	6 77%
1998	12.67%	9 14%	9.09%	8.71%	6 76%
1999	13 72%	9.17%	8.93%	8.68%	6.69%

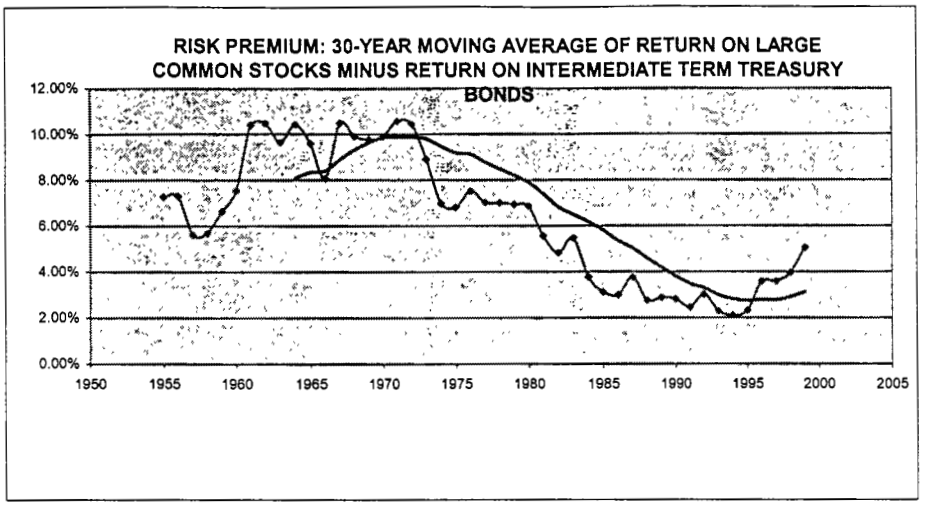
30 Year Moving Average

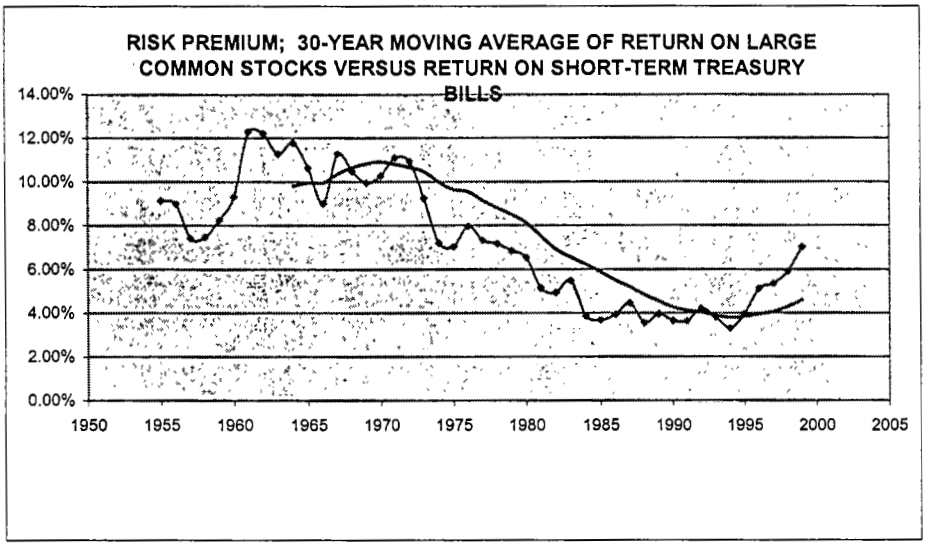
	Risk Premium Large Stocks vs Long-Term Corporate Bonds	Large Stocks vs Long-term Government Bonds	Intermediate Term Government	U S Treasury Bills
1955	5 94%	6 65%	7 28%	9 13%
1956	6 26%	6 93%	7.30%	8 99%
1957	4 64%	5 41%	5 62%	7.42%
1958	4 81%	5 62%	5 69%	7 48%
1959	5 68%	6 54%	6 63%	8 26%
1960	6 71%	7.32%	7.54%	9 32%
1961	9 49%	10.10%	10 40%	12 29%
1962	9 56%	10 39%	10 48%	12.21%
1963	8 97%	9 49%	9 63%	11 26%
1964	9 89%	10 33%	10 42%	11 78%
1965	9 19%	9 45%	9 60%	10 63%
1966	7 93%	8 10%	8 07%	9 00%
1967	10 81%	10 84%	10 49%	11 28%
1968	10 10%	10 41%	9 92%	10 48%
1969	10 20%	10 46%	9 78%	9 95%
1970	10 27%	10 81%	9 88%	10 27%
1971	10 98%	11.39%	10 58%	11 09%
1972	10 78%	11 26%	10 43%	10.93%
1973	9 38%	9.91%	8.91%	9.25%
1974	7 84%	8 05%	6.97%	7 19%
1975	7.53%	8 12%	6.81%	7 03%
1976	8 10%	8.69%	7 53%	7 97%
1977	7 48%	8 14%	7 03%	7 34%
1978	7 66%	8 33%	7 01%	7 16%
1979	7 90%	8 58%	6 94%	6 85%
1980	8 09%	8 74%	6 85%	6.54%
1981	7 06%	7.56%	5 57%	5 13%
1982	6 05%	6 53%	4 83%	4.93%
1983	6 74%	7 41%	5 48%	5 49%
1984	5.06%	5 83%	3 78%	3 86%
1985	4 17%	4 86%	3 12%	3.67%
1986	3 67%	4.28%	2.99%	3.93%
1987	4 58%	5 24%	3 76%	4 46%
1988	3 39%	3 94%	2 75%	3.54%
1989	3 41%	3.86%	2 88%	3 95%
1990	3 35%	3 97%	2 81%	3 84%
1991	2 98%	3 48%	2 47%	3 63%
1992	3 54%	4 05%	3 02%	4 21%
1993	2 77%	3.09%	2 29%	3 81%
1994	2 63%	2.99%	2 11%	3.28%
1995	2.49%	2 77%	2.33%	3 96%
1996	3 61%	4 09%	3 58%	5 11%
1997	3 26%	3 49%	3 60%	5 35%
1998	3.53%	3 58%	3.95%	5 91%
1999	4 56%	4 79%	5 05%	7 03%
	5 74%	6 23%	6.13%	7.56%

Source Schedule JAR 10, P. 3


RISK PREMIUM: 30-Year Moving Average of Return on Large Common Stocks minus Return on Long-term Corporate Bonds
12.00%
10.00%
8.00%
6.00%
4.00%
2.00%
0.00%
1950
1955
1960
1965
1970
1975
1980
1985
1990
1995
2000
2005


RISK PREMIUM: 30-Year Moving Average Return on Large Common Stocks Minus Return on 30 Year Treasury Bonds
12.00%
10.00%
8.00%
6.00%
4.00%
2.00%
0.00%
1950
1955
1960
1965
1970
1975
1980
1985
1990
1995
2000
2005


RISK PREMIUM: 30-YEAR MOVING AVERAGE OF RETURN ON LARGE COMMON STOCKS MINUS RETURN ON INTERMEDIATE TERM TREASURY BONDS
12.00%
10.00%
8.00%
6.00%
4.00%
2.00%
0.00%
1950
1955
1960
1965
1970
1975
1980
1985
1990
1995
2000
2005


RISK PREMIUM; 30-YEAR MOVING AVERAGE OF RETURN ON LARGE COMMON STOCKS VERSUS RETURN ON SHORT-TERM TREASURY BILLS
14.00%
12.00%
10.00%
8.00%
6.00%
4.00%
2.00%
0.00%
1950
1955
1960
1965
1970
1975
1980
1985
1990
1995
2000
2005

CERTIFICATE OF SERVICE
DOCKET NO. 010949-EI

I HEREBY CERTIFY that a true and correct copy of the foregoing Direct Testimony of James A. Rothschild has been furnished by hand-delivery (*) or U.S. Mail to the following parties on this 27th day of December, 2001.

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