SCANNED

ORIGINAL

STATE OF FLORIDA
OFFICE OF THE PUBLIC COUNSEL

JACK SHREVE
PUBLIC COUNSEL

c/o The Florida Legislature
111 West Madison St.
Room 812
Tallahassee, Florida 32399-1400
850-488-9330

RECEIVED-FPSC
02 JAN 17 PM 3:50
COMMISSION
CLERK

January 17, 2002

Blanca S. Bayo, Director
Division of Records and Reporting
Florida Public Service Commission
2540 Shumard Oak Blvd.
Tallahassee, FL 32399-0850

Re: Docket No. 000824-EI

Dear Ms. Bayo:

Enclosed for filing in the above-referenced docket are the original and 15 copies of the Direct Testimony of James A. Rothschild.

Please indicate the time and date of receipt on the enclosed duplicate of this letter and return it to our office.

Sincerely,

Charles J. Beck

Charles J. Beck
Deputy Public Counsel

AUS ___
CAF ___ CJB:bsr
CMP ___
COM ___
CTR ___ Enclosures
ECR ___
GCL ___ cc: All parties of record
OPC ___
MMS ___
SEC ___
OTH ___

RECEIVED & FILED
FPSC-BUREAU OF RECORDS

DOCUMENT NUMBER-DATE
00635 JAN 17 02
FPSC-COMMISSION CLERK

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Review of Florida Power Corporation's earnings, including effects of proposed acquisition of Florida Power Corporation by Carolina Power & Light	)	Docket No. 000824-EI Filed: January 18, 2002

DIRECT TESTIMONY

OF

JAMES A. ROTHSCHILD

On Behalf of the Citizens of the State of Florida

Jack Shreve
Public Counsel

Office of Public Counsel
c/o The Florida Legislature
111 West Madison Street
Room 812
Tallahassee, FL 32399-1400

(850) 488-9330

Attorney for the Citizens
of the State of Florida

FLORIDA POWER CORPORATION
TESTIMONY OF JAMES A. ROTHSCHILD

TABLE OF CONTENTS

I. STATEMENT OF QUALIFICATIONS OF JAMES A. ROTHSCHILD 3

II. PURPOSE 5

III. SUMMARY OF FINDINGS AND RECOMMENDATIONS 6

IV. CAPITAL STRUCTURE AND EMBEDDED COST RATES 9

V. COST OF COMMON EQUITY 18

A. INTRODUCTION 18

B. SUMMARY OF CONCLUSIONS ON COST OF EQUITY 23

C. DETAILS OF THE DETERMINATION OF THE COST OF EQUITY 31

1. Definition of the Cost of Equity 31

2. Implementation of the DCF Method 33

a) Introduction 33

b) Implementation of Single-stage DCF 48

c) Implementation of Multi-stage DCF 55

3. Implementation of Risk Premium/CAPM Method 58

a) Introduction 58

b) Inflation Risk Premium Method. 59

c) Debt Risk Premium Method 63

VI. EVALUATION OF THE TESTIMONY OF DR. VANDER WEIDE 70

A. SUMMARY 70

B. PROBLEMS WITH DR. VANDER WEIDE'S DCF ANALYSIS 72

C. ARITHMETIC VERSUS GEOMETRIC AVERAGE 81

D. TREND IN EQUITY RISK PREMIUM 91

E. FINANCING COSTS 92

F. CONCLUSIONS 92

APPENDIX A- TESTIFYING EXPERIENCE OF JAMES A. ROTHSCHILD 95

SCHEDULES JAR 1 - JAR-10 105

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 utility operations of Florida Power Corporation. Additionally, this testimony will provide an evaluation of the testimony of Florida Power Corporation's cost of equity witness, James H. Vander Weide.

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 FPC's regulated utility operations is 7.55%. This is based upon the actual consolidated capital structure of Progress Energy, and a cost of equity of 10.20%. My cost of capital recommendation is different from that requested by the company both because I have used a different capital structure and different cost of equity. I have adopted the company's embedded cost of long-term debt, preferred stock, and customer deposits. If I had used the company requested capital structure, I would have recommended a cost of equity of 9.50%. This is because of the substantially lower financial risk associated with that equity rich capital structure.

I am aware that Florida regulatory policy has implemented numerous adjustment clauses which have the effect of reducing the risk experienced by Florida Power Corporation'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. No downward adjustment to my cost of equity recommendation was made 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 James H. Vander Weide. 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 Dr. Vander Weide's 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. Dr. Vander Weide'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 is mathematically invalid because it is not indicative of the expected growth in dividends, stock price, or book value even over the next five years. This large mathematical error is repeated in the portion of Dr. Vander Weide's risk premium based methods that rely upon his DCF method.

As will be explained later in this testimony, my criticisms of Dr. Vander Weide'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 shown on Schedule JAR 10, P. 1 are consistent with my cost of equity recommendation and are much lower than the very excessive 6.62% equity risk premium over corporate bonds used by Dr. Vander Weide. See page 32, line 9 of his direct testimony.

For reasons shown later in this testimony, Dr. Vander Weide'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". The U.S. Securities and Exchange Commission (SEC) has found it proper to use the geometric average approach. Even sources such as Value Line have found that using the arithmetic average rather than the geometric average results in an upwardly biased result.

[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. DOES THE MANAGEMENT OF A REGULATED UTILITY ALWAYS HAVE THE INCENTIVE TO IMPLEMENT THE CAPITAL STRUCTURE THAT IS IN THE BEST INTERESTS OF RATEPAYERS?

A. No. The revenue requirement associated with each percentage of common equity in the capital structure is considerably more costly than debt. This is not only because the cost of equity is higher than the cost of debt, but because the earnings requirement on equity needs to be grossed-up for income taxes. This is in contrast to the interest expense on debt that does not need a tax gross-up because interest expense is tax deductible. Therefore there can be an incentive for parent companies to move equity from non-regulated portions of their business into the capital structure of their regulated subsidiaries.

Q. HOW HAVE YOU DETERMINED THE CAPITAL STRUCTURE IN THIS PROCEEDING?

A. I started by reviewing the capital structure proposed by the company in this proceeding. The company requested a capital structure, computed in a way consistent with the general policies in Florida, that contains 53.62% common equity. For comparison purposes, I also noted that the capital structure requested by Florida Power Corporation contains 61.14% common equity if the capital structure is examined from the more traditional approach of expressing the percentage of common equity financing as the percentage of total investor supplied financing (the sum of common equity, preferred equity and debt.) This 61.14% common equity ratio is the appropriate ratio to use for the purpose of

comparing the capital structure requested by Florida Power to the capital structure of other companies. I compared this capital structure requested by Florida Power Corporation with the average capital structure of the group of comparative electric companies chosen by the company and with the actual consolidated capital structure of Progress Energy. Schedule JAR 7 shows that the average common equity percentage used by the group of comparative electric companies was 43.58%. Schedule JAR 1, Page 3 shows that the common equity ratio actually utilized by Progress Energy was 38.04% on September 30, 2001. Compared to these, the 61.14% common equity in the capital structure requested for Florida Power (computed on a consistent basis of investor supplied capital to investor supplied capital) is considerably more burdened with common equity than either the capital structure of the comparative electrics or the capital structure of Progress Energy.

Q. WHAT DID YOU USE FOR THE EMBEDDED COST OF LONG-TERM DEBT, PREFERRED STOCK, AND CUSTOMER DEPOSITS?

A. I have adopted the cost rates proposed by the company for preferred stock and debt.

Q. HOW IS THE CONSOLIDATED CAPITAL STRUCTURE OF PROGRESS ENERGY RELEVANT TO THE CAPITAL STRUCTURE OF FLORIDA POWER?

A. The bond rating and the cost of debt to a subsidiary company such as Florida

Power is highly influenced by the credit standing of its parent. This is because rating agencies are aware that the parent could become a source of capital in hard times. While there often is no contractual requirement for the parent to provide funds to one of its subsidiaries that may be in financial trouble, it could well be in the best interests of the parent to provide funds to a subsidiary that it owns if such provision of funds could serve to protect the integrity of the parent's investment in the subsidiary. **BEGIN CONFIDENTIAL INFORMATION::::**THIS INFORMATION DEEMED CONFIDENTIAL BY FLORIDA POWER CORPORATION [2]. **END CONFIDENTIAL INFORMATION.** As shown on OPC5 001543 (part of response to OPC RFP #96), the bond rating of Florida Power Corp. is now BBB+ by Standard & Poors, a level that is very similar to the BBB rating Standard & Poors gives to Progress Energy, Inc. Before the merger, according to the response to OPC RFP #96 (OPC 5 001507) the debt of Florida Power was rated AA- by Standard & Poors. This same response indicates that an important part of the capitalization strategy of Florida Power was to allow it to maintain an AA- credit rating. However, due to the merger and the new bond rating policies being used by Standard & Poors, maintaining a high common equity ratio at the subsidiary level is insufficient to maintain the higher credit rating. In order to maintain the higher credit rating, Progress Energy would have to bring its common equity ratio up to levels sufficient for a much stronger bond rating.

[2] THIS INFORMATION DEEMED CONFIDENTIAL BY FLORIDA POWER CORPORATION.

Q. DO YOU HAVE DOCUMENTATION FROM STANDARD & POORS THAT EXPLAINS ITS POSITION ON THE RELATIONSHIP BETWEEN THE CREDIT STANDING OF A SUBSIDIARY IN RELATION TO ITS PARENT?

A. Yes. Standard & Poors website contains a document entitled "Corporate Rating Criteria", Standard & Poors, 2001. Page 45 of this Standard & Poors document contains the following:

> Utilities are often owned by companies that own other, riskier businesses or that are saddled with an additional layer of debt at the parent level. Corporate rating criteria would rarely view the default risk of an unregulated subsidiary as being substantially different from the credit quality of the consolidated economic entity (which would fully take into account parent-company obligations). Regulated subsidiaries can be treated as exceptions to this rule – if the specific regulators involved are expected to create barriers that insulate a subsidiary from its parent.
>
> In those cases that benefit from regulatory insulation, the rating on the subsidiary is more reflective of its "stand alone" credit profile. (As a corollary, the parent-company rating is negatively affected – since it is deprived of full access to the subsidiary's assets and cash flow.) With utilities' competition and consolidation increasing, and with shifts to new forms of regulation that are coming into existence, however, there is less reason to expect such regulatory intervention. Just as there is less and less basis to rely generally on regulators to maintain a level of credit quality – as discussed above – so, too, there is less basis for regulatory separation.
>
> Rating policy has evolved in tandem with these trends. The bar has been raised with respect to factoring in expectations that regulators would interfere with transactions that would impair credit quality. To achieve a rating differential for the subsidiary requires a higher standard of evidence that such intervention would be forthcoming. (See sidebar "*Telecommunications Ratings Policy Revised.*")

The "telecommunications sidebar", which is on page 46 of the same document, starts with the following paragraph:

> Standard & Poors no longer allows the corporate credit rating (CCR) of a regulated telephone operating company to be higher than the CCR of its parent.

Q. HOW HAS THE POLICY YOU HAVE QUOTED ABOVE BEEN IMPLEMENTED IN THE CASE OF FLORIDA POWER CORPORATION VIS A VIS ITS PARENT PROGRESS ENERGY?

A. Despite the very high common equity ratio of Florida Power, its bonds are rated BBB+. This is consistent with the bond rating that should be expected for Florida Power if and only if the relatively low common equity ratio of its parent, Progress Energy, is a critical factor in Florida Power's bond rating. **BEGIN CONFIDENTIAL INFORMATION**: THIS INFORMATION DEEMED CONFIDENTIAL BY FLORIDA POWER CORPORATION

END CONFIDENTIAL INFORMATION

Q. IS A LOWER BOND RATING NECESSARILY BAD?

A. No. One way to obtain a higher bond rating is to increase the level of common equity in the capital structure by replacing debt with equity. While a higher bond rating will lower borrowing costs, the additional cost associated with the extra equity is only justified if the reduction in the cost of debt is sufficient to justify the savings in interest expense. The cost of capital is an important component of the overall cost of providing electric service. Therefore, minimizing the overall cost of capital should be considered a primary goal of capital structure selection, not just the bond rating.

Q. ARE THERE ANY OTHER REASONS WHY IT IS PROPER TO USE THE CONSOLIDATED CAPITAL STRUCTURE WHEN DETERMINING THE ACTUAL CAPITAL STRUCTURE FINANCING THE ASSETS OF FLORIDA POWER CORPORATION?

A. The consolidated capital structure is not subject to a conflict of interest. The

consolidated capital structure is an actual capital structure that reflects full arms-length transactions between the public debt and equity investors. It is likely that the other operations, both regulated and unregulated, are the same or more risky than the regulated operations of Florida Power Corporation. Using the consolidated capital structure as an estimate of the actual capital structure of the regulated Florida Power Corporation operations produces a conservatively high estimate of the percentage of common equity financing Florida Power Corporation's regulated utility operations.

Q. ARE YOU AWARE OF ANY STATEMENTS FROM ANY MAJOR ACCOUNTING FIRMS ABOUT THE APPLICABILITY OF A SUBSIDIARY BALANCE SHEET?

A. Yes. Prior to the merger to form Pricewaterhouse Coopers, LLP, Price Waterhouse was hired to advise the Long Island Power Authority regarding its proposed takeover of some of the electric utility assets of Long Island Lighting Company. In this context, Elizabeth M. McCarthy, Partner of the accounting firm Price Waterhouse, stated in a presentation to a meeting of the Board of Trustees of the New York State Long Island Power Authority on June 11, 1997, that:

> ... whenever you have a situation where you have a holding company, it is important to have provision for hypothetical cap structure **because a holding company can capitalize its operating companies any way it wants**, a hundred percent equity or anything else in between, a hundred percent debt or anything else in between.[3]
>
> (Emphasis added.)

Q. DOES PROGRESS ENERGY HAVE AN INCENTIVE TO LOWER THE OVERALL COST OF CAPITAL OF ITS FLORIDA POWER CORPORATION SUBSIDIARY?

A. No, on the contrary. While there is substantial incentive for Progress Energy to lower its overall cost of capital on a consolidated basis, it does not follow that a regulated subsidiary has such an incentive. As long as a Progress Energy believes its subsidiary capital structure might be used for regulatory purposes, it has an incentive to keep the common equity ratio of the regulated subsidiary relatively high.

Q. IN VIEW OF ALL OF THE EVIDENCE YOU HAVE PRESENTED ABOVE, HOW DO YOU RECOMMEND THE CAPITAL STRUCTURE FOR QUANTIFYING THE OVERALL COST OF CAPITAL OF FLORIDA POWER CORPORATION BE DETERMINED IN THIS CASE?

---

[3] A transcript of the entire trustee meeting of June 11, 1997 is available on the website of the Long Island Power Authority at www.lipa.state.ny.us. The referenced quote appears on page 95 of the transcript.

A. I recommend that the capital structure presented by Florida Progress be recomputed to reflect the actual mix of investor supplied debt and equity that is being used by Progress Energy. The procedure for doing this is shown on Schedule JAR 1, Page 2.

Q. YOU ALSO SHOW A CAPITAL STRUCTURE AND ASSOCIATED OVERALL COST OF CAPITAL ASSUMING FLORIDA POWER CORPORATION WERE FINANCED WITH THE SAME MIX OF INVESTOR SUPPLIED DEBT AND EQUITY USED BY THE COMPARATIVE GROUP OF ELECTRIC COMPANIES. WHY DID YOU PROVIDE THIS ALTERNATIVE COMPUTATION?

A. I am aware that Progress Energy incurred a higher than normal level of debt to finance its acquisition of Florida Progress. The equity ratio has already been increased as of the 9/30/01 date I used to quantify the capital structure of Progress Energy. It remains to be seen how much more, if any, Progress Energy will increase its common equity ratio. I presented the overall cost of capital based upon the comparative group average to show what the overall cost of capital would be if and when Progress Energy increases its common equity ratio up to industry average levels.

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 separately applied to the group of comparative electric distribution companies and the comparative gas distribution companies selected by company witness Dr. Vander Weide. I also applied the DCF method directly to Progress Energy the parent of Florida Power Corporation. I consider the results of all the methods to produce my final recommendation and 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 times, it may be appropriate to give the risk premium/CAPM results a higher weighting.

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, the constant growth or single-stage DCF is indicating a cost of equity of 9.48% to 10.64% depending upon the time period and the companies used, and the multi-stage DCF is indicating a cost of equity of 9.62% to 10.64%, with an average result of 10.13%.

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.[4] 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 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

[4] Page 12 of Stocks for the Long Run by Jeremy J. Siegel, Professor of Finance- the Wharton School

analysis based upon long-term corporate bonds. The overall cost of equity based upon this method was 9.83% 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 8.12%. See Schedule JAR 2.

Q. IS THE 8.12% UNUSUALLY LOW?

A. 8.12% is a lower result than has been awarded to utility companies as a cost of equity. However, in an interview on the business television station CNBC during December 2001, legendary investor and Chairman of Berkshire Hathaway Warren Buffett said that he expects the S&P 500 to earn a total return of 7-8% over the next decade. CNBC Reporter Mark Haines asked Mr. Buffett if this 7-8% return was worth the incremental risk given that long-term U.S. treasury bonds are yielding about 5.5%. He responded by saying that the difference between 5.5% and 7-8% is substantial when compounded for 10 years.

---

of the University of Pennsylvania, McGraw Hill, 1998.

B. Summary of Conclusions on Cost of Equity

Q. WHAT IS THE COST OF EQUITY TO FLORIDA POWER CORPORATION?

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 the cost of equity to the comparative group of electric companies is 10.0%. This cost of equity should be modified based upon the specific financial risk of the capital structure used by Florida Power. The company has requested that its cost of capital be determined based upon a capital structure with a substantially higher percentage of common equity and therefore a substantially lower financial risk than that of the comparative electric companies. Therefore, if the capital structure requested by the company were to be used, the cost of equity should be lowered to 9.50% to recognize this lower financial risk. However, for reasons that I have explained in this testimony, the proper capital structure to use for Florida Power is the actual capital structure of its parent, Progress Energy. The Progress Energy capital structure contains less common equity than the comparative group. Therefore, it has a higher financial risk and should be accordingly allowed a higher cost of equity than for the average of the comparative group. To account for this higher financial risk, I have increased the 10.0% cost of equity for the comparative group up to 10.20%.

Recognizing that recession fears are causing the DCF method to overstate the cost of equity at this juncture, I noted that the constant growth version of

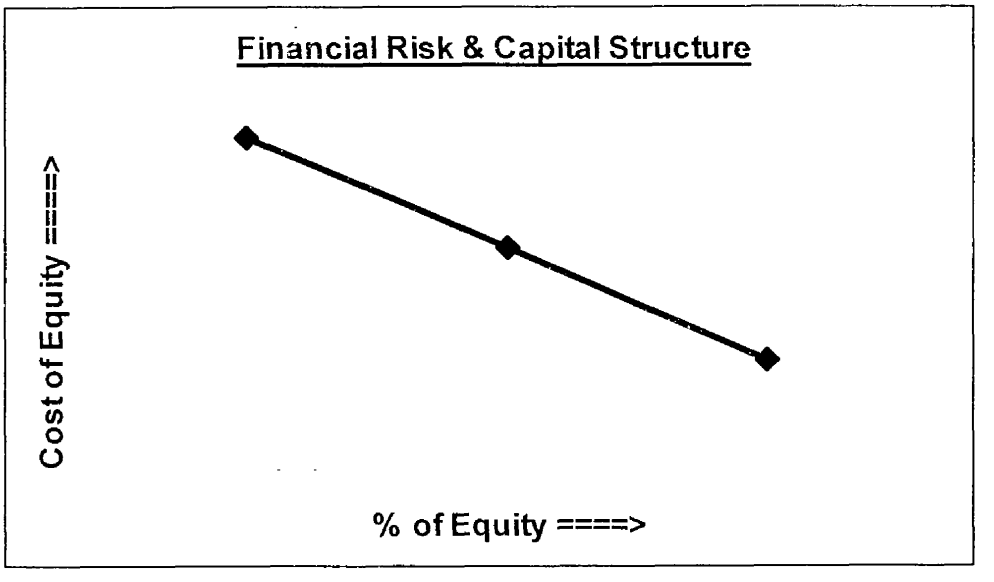
the DCF method as applied to the comparative group of electric utilities is 9.48% to 10.03%. I also found that the cost of equity indicated by the multi-stage version of the DCF method applied to the same group of electric distribution utilities varied between 9.62% to 10.64% depending upon whether stock prices from11/30/01 or for the year ending 11/30/01 were used. The cost of equity indicated by the risk premium/CAPM method is 9.83% for an equity of average risk, and is 8.12% 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 9.97% 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.

Q. SHOULD THIS 10% BE DIRECTLY APPLIED AS THE COST OF EQUITY

FOR FLORIDA POWER CORP?

A. No. Before deciding what the cost of equity is for Florida Power Corp., the difference in financial risk, or capital structure risk, between the comparative companies and that of Florida Power Corp. should be considered. The capital structure is important because (as the amount of equity increases, the cost of equity decreases. The Graph below may help to illustrate the relationship between the percent of equity in the capital structure and the cost of equity.



To calculate the cost of equity for Florida Power based upon the actual capital structure of Progress Energy, I have added 20 basis points to the average cost of equity of the applicable group of electric distribution companies. Therefore, my recommended cost of equity for FPC's electric utility operations is 10.20%. As shown on Schedule JAR 1, I would recommend a 10.0% cost of equity if using the average capital structure of the comparative electric companies, and a 9.50% cost of equity if using the capital structure requested by the company. This

9.50% equity cost rate is the appropriate cost of equity to assign to the capital structure requested by Florida Power Corporation because of the substantially greater percentage of equity than the comparative group of electric companies chosen by Dr. Vander Weide. Therefore , the lower risk associated with the capital structure requested by Florida Power Corporation means that the cost of equity consistent with that structure should be lower than the 10.0% cost of equity that is proper for the average electric utility.

As shown on Schedule JAR 1, the overall cost of capital is lower based upon the Progress Energy capital structure than the Florida Power Corp. capital structure even though the cost of equity associated with the Progress Energy capital structure is 10.2% instead of 9.50%. This is because the higher cost of equity is more than offset by the savings associated with using a higher proportion of debt than equity.

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 that have made such an argument even though such an argument is inaccurate. The DCF method keeps its accuracy irrespective of book value because it measures the return reported by investors so they are willing to invest at market price. When the market price is in excess of book value, the return on book is higher than the return on market. The stock price higher than market is conclusive evidence that the return on book

is higher than the return demanded by investors. Otherwise, the stock price would not have been bid up by investors. 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."[5] The FCC rejected Ameritech's argument for several reasons. The reasons stated were:

> ... 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.**

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

> 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

Where growth refers to the future sustainable growth rate in 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 rate for 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 are 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.[6] 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."[7] As a result, DCF approaches that rely upon the direct use of analysts' five-year growth rates repeatedly overstate the cost of equity.

---

[6] 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.

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

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

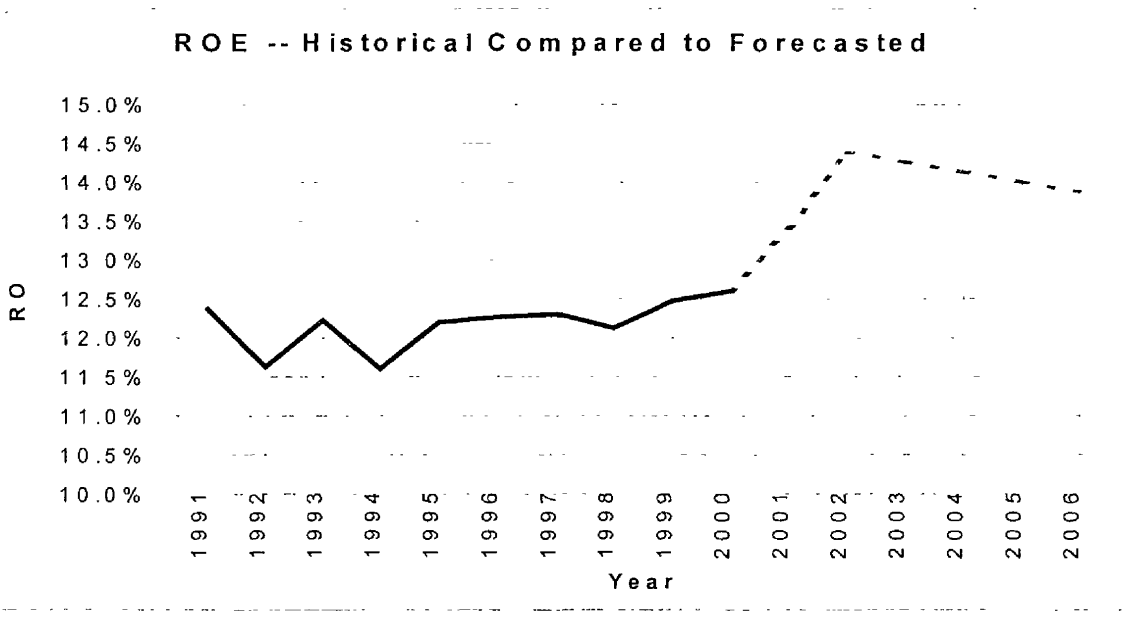
Q. HOW DID YOU APPLY THE DCF MODEL IN THIS CASE?

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.



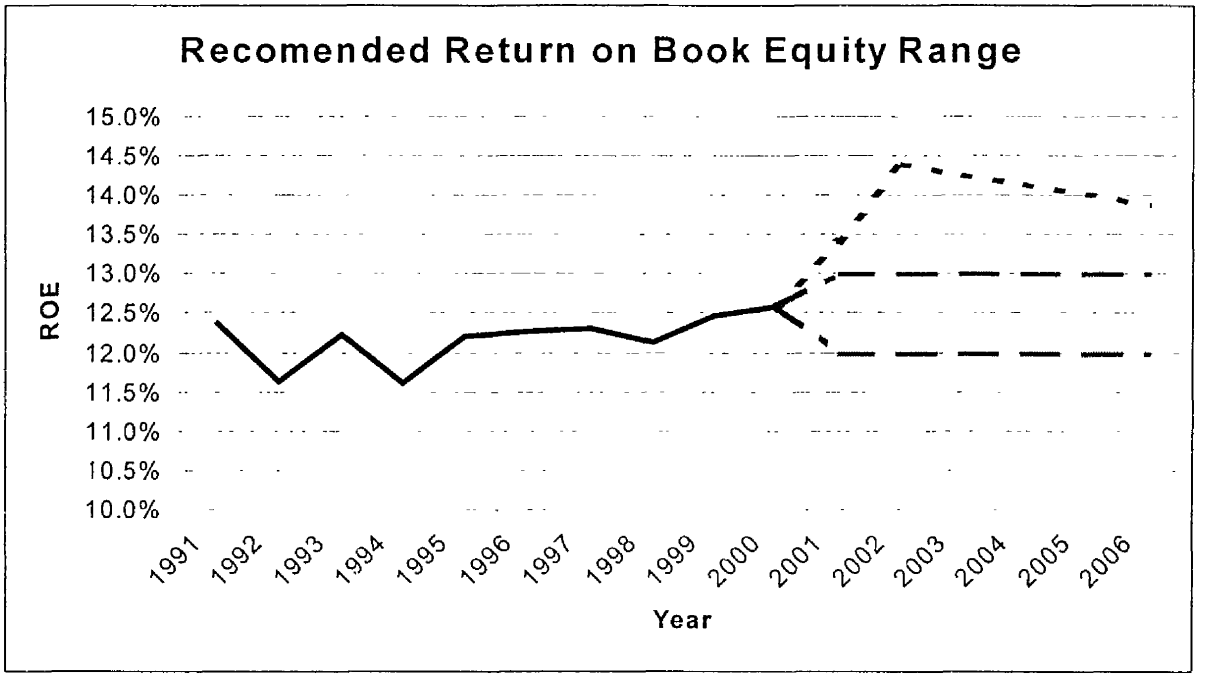
The data used to compile the above graph is shown on Schedule JAR 3, Page 4.

The above graph shows that for the comparative group of companies chosen by Dr. Vander Weide, the historically earned returns have been in a relatively tight band, varying between 11.6% at the low and 12.6% at the high. Despite this history, Value Line forecasts a marked increase in the average earned return on

equity up to about 14.4% in 2002, followed by a gradual tapering off to 13.9% 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 (solid line), the returns on book equity forecast by Value Line (line with short dashes), and a conservatively high estimate of the return on book equity range that likely encompasses what is expected by the majority of knowledgeable investors (lines with long dashes show the high and low end of this range:



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 similar to the median value of the future expected return on equity forecast by Value Line.

In the above graph, the recommended range for future expected return on book equity for the comparative group of electric companies 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. 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 in 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 of the quality of 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?

I started by taking the current quarterly dividend rate for each company examined[8] 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

[8] The group of companies were selected by the company witness.

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.[9]

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

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

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 growtn 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 12.50% 13.0% 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. For the single stage DCF I used the 13.0% high end of the range to be conservative and to

effectively give some consideration to the possible temporary increase in earned return on equity forecast for the first few years of the projection period.

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:

$$b = 1 - (D/E), \text{ where}$$

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 29.30% and 31.48%. 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[10] 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

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

the DCF model.[11] 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.[12]

My projections have relied on a constant dividend payout ratio for the second stage[13]. 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 October 31, 2001, and the average stock price for the year ended October 31, 2001 to be representative of the price paid.

---

[11] 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.

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

[13] 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.

The retention rate used in the second-stage was set equal to the retention rate forecast by Value Line for 2001 of 36.04%. This is considerably higher than the 26.22% retention rate obtained by relating the $1.75 current actual dividend rate shown on Schedule JAR 3, P. 1 with the earnings per share earned in 2000 of $2.41 shown on Schedule JAR 3, P. 2. As shown on Schedule JAR 5, P. 1, Value Line forecasts the retention rate to increase to 50.58% by 2005. The large increase is the result of Value Line's exceedingly optimistic 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 achieved in 2000. Nevertheless, to be conservative, I used the 36.04% 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.

The results for the complex, or multi-stage DCF are shown on Schedule JAR 2.

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 9.48% and 10.64% for all of the examined electric

companies. This result is higher than the 9.52% to 9.95% DCF results obtained for the gas distribution company group.

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%.[14]

b) Inflation Risk Premium Method.

Q. HOW HAVE YOU APPLIED THE INFLATION PREMIUM METHOD?

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

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.

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

A. A book entitled *Stocks for the Long Run*[15] 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.

[15] *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...".

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 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 2.00%. See Schedule JAR 9. This was obtained by observing that long-term inflation-indexed treasury securities were yielding 3.42%, while long-term non inflation-indexed treasury securities were yielding 5.26%. The difference between 5.26% and 3.42% is 1.84%. This result was rounded up to 2.00%. Adding this 2.00% inflation expectation to the 6.6% to 7.2% range produces an inflation risk premium indicated cost of equity of 8.60% to 9.20% 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 comparative electric companies is 0.51 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 1.51% was subtracted from the 6.60% to 7.20% risk premium to arrive at a 5.09% to 5.69% equity risk premium over 90-day treasury bills. This range was then multiplied by the 0.51 beta to arrive at a risk adjusted equity premium of 2.62% to 2.92%. 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 6.13% to 6.43%. The mid-point of this range is the risk premium/CAPM equity cost result of 6.28%. See Schedule JAR 9.

c) Debt Risk Premium Method

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

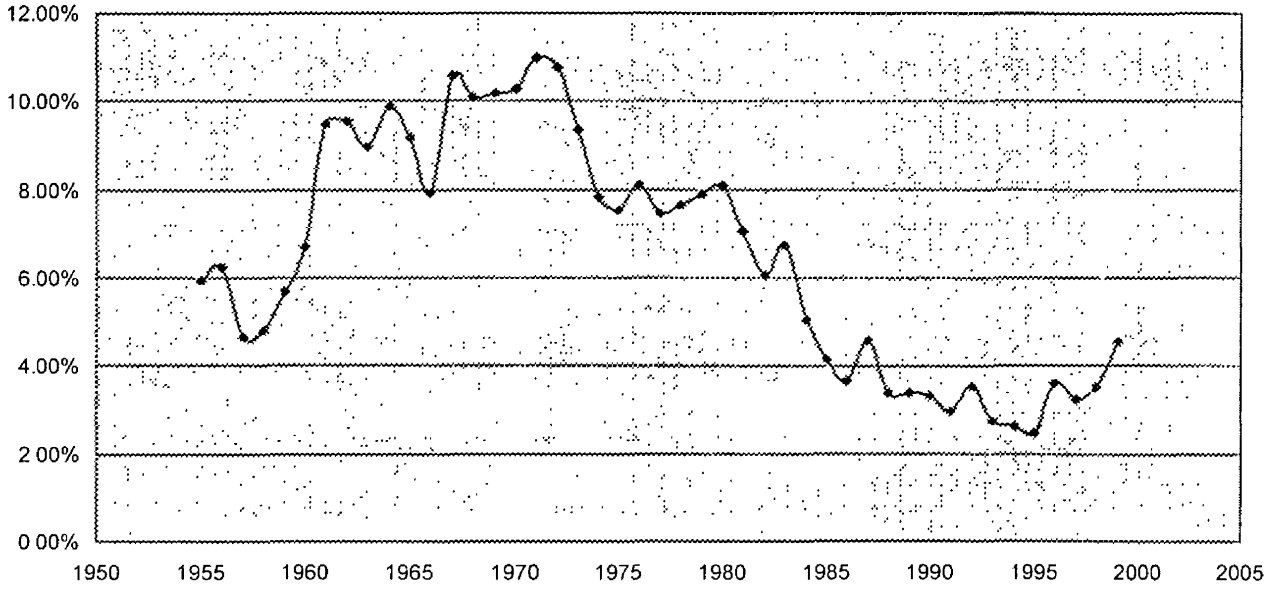
A. As shown on Schedule JAR 10, I separately determined the proper risk premium applicable to long-term treasury bonds, long-term corporate bonds, intermediate-term treasury bonds and short-term treasury bills. In this way, the debt risk premium method I present considers a wide array of data points 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".

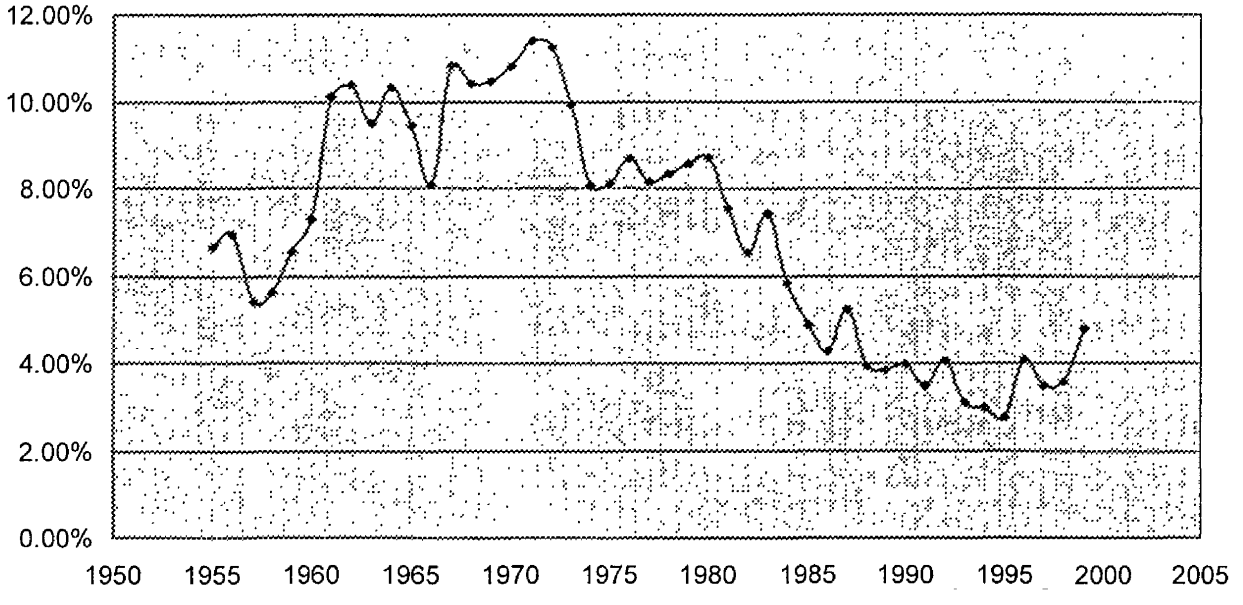
Q. EARLIER IN THIS SECTION OF YOUR TESTIMONY, YOU SHOWED THAT FEDERAL RESERVE CHAIRMAN GREENSPAN NOTED THAT THE FACT THAT EQUITY RISK PREMIUMS HAVE DECLINED "... IS NOT IN DISPUTE." YOU ALSO PROVIDED SOURCES FROM FINANCIAL LITERATURE CONCLUDING THAT THE RISK PREMIUM IS NOW LESS THAN 4%. DO YOU HAVE ANALYTICAL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

RISK PREMIUM: 30-Year Moving Average of Return on Large Common Stocks minus Return on Long-term Corporate Bonds



RISK PREMIUM: 30-Year Moving Average Return on Large Common Stocks Minus Return on 30 Year Treasury Bonds



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?

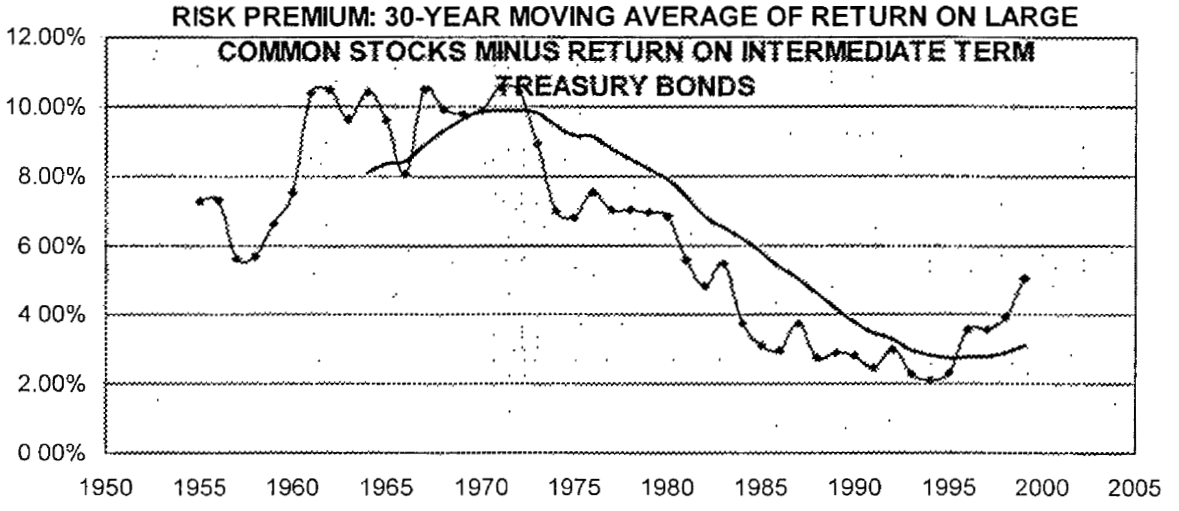
A. 10 years is far too short of a time period to be able to observe the actual risk premium based upon realized historic returns. The reason that realized returns over a short time are not helpful at quantifying the risk premium is as follows. If the equity risk premium declines, this means by definition 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 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 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 8.00%.

VI. EVALUATION OF THE TESTIMONY OF DR. VANDER WEIDE

A. Summary

Q. PLEASE SUMMARIZE DR. VANDER WEIDE'S TESTIMONY.

A. Dr.. Vander Weide recommends that Florida Power Corporation be allowed a return on equity of 13.2%. He says he arrived at this recommendation based upon three "generally accepted methods." He used the Discounted Cash Flow (DCF), the Ex Ante risk premium, and the Ex Post risk premium methods. The average of the three methods he used is 13.22%. Dr. Vander Weide recommended a cost of equity of 13.2%.

1. **DCF Method.** Dr. Vander Weide applied a quarterly version of the DCF method to a group of electric companies and to a group of gas distribution companies. He used the constant-growth, or D/P + g form

of the DCF modelon a quarterly bases. He estimated the value for "g" by using the consensus analysts' 5-year earnings per share growth rate as compiled by I/B/E/S. See his schedule 1 and appendix 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 13.3%. See page 30 of his direct testimony.

ii. **Risk Premium Method.** Dr. Vander Weide applies two risk premium methods, the Ex Ante Risk Premium Approach and Ex Post Risk Premium Approach. In his Ex Ante approach Dr. Vander Weide uses the results of a study to estimate the risk premium demanded by investors for Florida Power over U.S. Treasury bonds. He estimated the average risk premium to be 6.62% by using the "DCF expected return on a proxy group of LDCs compared to the interest rate on 20-year U.S. Treasury bonds.". See graph on page 13. Dr. Vander Weide's Ex Post method calculated the risk premium of the S&P 500 and S&P Utilities to Moody's A-rated Utility Bonds with a risk premium of 6.29% and 5.14% respectively.

Q. PLEASE SUMMARIZE YOUR REACTION TO JAMES H. VANDER WEIDE'S TESTIMONY.

A. Dr. Vander Weide'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 Dr. Vander Weide'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. As shown on in his Schedule 4, 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 and because he used a risk premium computed from the historic relationship between common stocks and treasury bonds, but added this risk premium to the then current interest rate on Aaa rated bonds rather than treasury bonds. Because the interest rate on Aaa rated bonds is 1-2% higher than for U.S. treasuries, this error further exaggerates his risk premium result.

B. Problems with Dr. Vander Weide's DCF Analysis

Q. PLEASE ELABORATE ON YOUR PROBLEMS WITH DR. VANDER WEIDE'S IMPLEMENTATION OF THE DCF METHOD.

A. The largest problem with his 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.[16] 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 3. The comparison shows that while the earned return on book equity for the comparative group of electric utilities chosen by Dr. Vander Weide was 12.76% in 2000 (Schedule JAR 3, Page 2), the

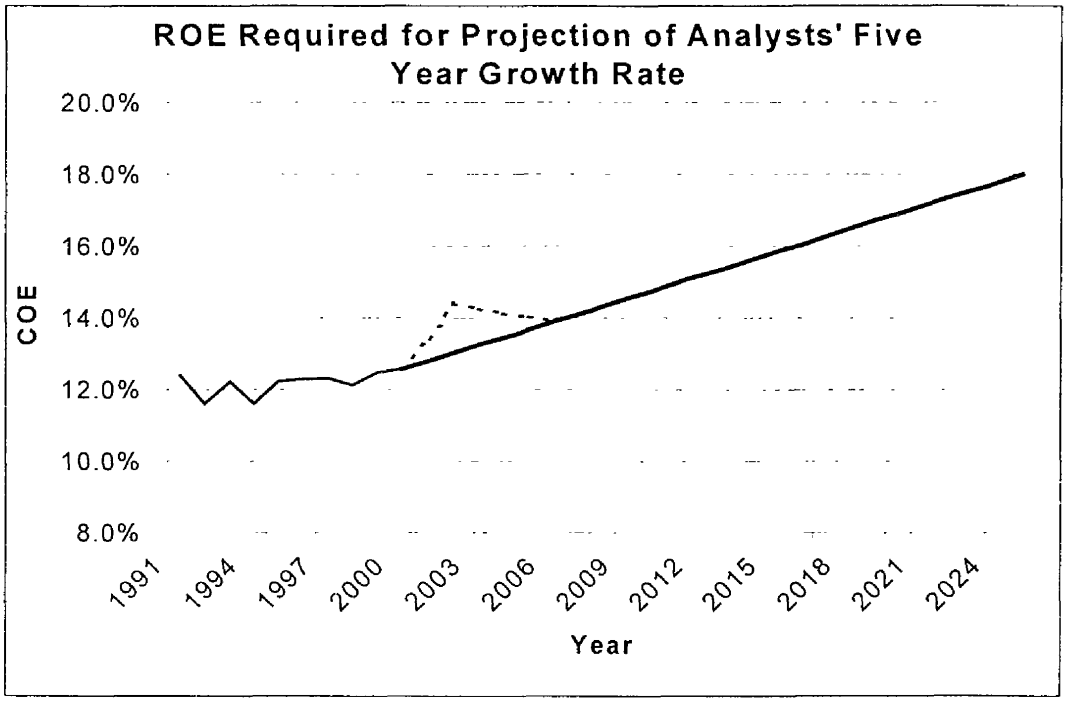
[16] *Weekly Insights*, "Global Strategy Perspectives", Credit Suisse First Boston, October 4, 2001, pages 55-64.

forecasted return on equity that is consistent with the analysts' consensus earnings per share growth rate is 15.33%, and the median forecasted amount is 14.13% (Schedule JAR 3, Page 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.

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 DR. VANDER WEIDE'S SELECTED GROWTH RATE METHOD?

A. Yes. By using a five-year analysts' growth rate projection as a proxy for long-term sustainable growth, Dr. Vander Weide 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 Dr. Vander Weide'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. The solid black line shows actual historic earned

returns on book equity, the dotted line shows Value Line's forecast of the return on book equity, and the shaded line shows the projected return on book equity that would have to occur in order for the analysts' five-year growth rate to continue 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 Dr. Vander Weide 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[17]), a comparison of earnings per share forecasted growth rate and the dividends per share growth rate also shows that Dr. Vander Weide 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, page 2 shows that the dividends per share growth rate forecast by Value Line from 2000 to 2005 is a compound annual rate of 2.39%. 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

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

time that earnings per share growth accelerates[18]. 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 lose 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.

Q. ON PAGE 25 OF HIS TESTIMONY, DR. VANDER WEIDE CLAIMS THAT FOR MOST COMPANIES, THE I/B/E/S CONSENSUS GROWTH RATE IS THE BEST AVAILABLE ESTIMATE OF GROWTH FOR THE DCF MODEL. DID HE PROVIDE A BASIS FOR THAT CLAIM?

[18] 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.

A. Yes. In response to question #4 of Citizens First Set of Interrogatories that asked him for the basis of his claim, he provided was a study conducted jointly by Dr. Vander Weide and Dr. Carleton. This study was based entirely on stock price data from 1981 through 1983.

Q. DOES THE STUDY SHOW THAT THE I/B/E/S GROWTH RATE IS "THE BEST AVAILABLE ESTIMATE OF THE GROWTH TERM IN THE DCF MODEL"?

A. No. The study shows that in the very unusual financial market in the 1981-1983 time period, the I/B/E/S growth rates available at the time were better able to explain a company's price to earnings ratio than five other factors he evaluated. Those other factors were 1)historic growth in earnings per share, 2) historic growth in dividends per share, 3) historic growth in book value per share, 4) historic growth in cash flow per share, and 5) the plowback ratio, which his study defines as "... the product of the firm's retention ratio in the current year and its return on book equity for that year."

I agree with the study's basic conclusion that historically oriented growth rates are a poor proxy for investors' expected growth, and have consistently argued against the use of the historic growth in earnings, dividends, book value, cash flow, and historic plowback ratio over the hundreds of cost of capital testimonies I have given. My record of opposing the use of the historic growth in earnings, dividends, book value, or the historic plowback ratio before the study based upon the 1981-1983 period was completed by Dr. Vander Weide in his

study.[19] I also presented studies in testimony showing that historic growth rate methods were deficient years before Dr. Vander Weide conducted his study. However, while I agree with the study's basic conclusion regarding the inaccuracy of historic growth rates, the sweeping conclusion he makes in his testimony that the study he presented shows the I/B/E/S growth rate to be the "... best available estimate of growth in the DCF model..." goes way beyond what the study results examined. For example, although his study acknowledges that "... generally held views..." believe the plowback method is the superior method, his study rejects its use based upon only examining the plowback method by taking the growth rate it predicted in only the most recent HISTORICAL year. Most importantly, his study did not test the use of a plowback ratio based upon the use of a forecasted value for the return on book equity and with a retention rate computed in a manner consistent with the dividend rate used to compute the dividend yield. In other words, this study that is the entire basis for Dr. Vander Weide's DCF method provides no test whatsoever of any method to compute growth based upon the future other than the one overly simplified and logically flawed method he chose to use.

Q. HAS DR. VANDER WEIDE ALLEGED THAT THE GROWTH RATE METHOD YOU HAVE USED WAS TESTED IN HIS STUDY OF GROWTH RATES?

---

[19] For example, see pages 58-59 of my testimony filed in June, 1983, in docket 830012-EU.

A. In prior cases where Dr. Vander Weide and I have both been witnesses, I have seen him make a sweeping claim that his study somehow refutes all plowback, or "b x r" growth rate methods. This claim was based upon his test of a b x r approach to growth that was based only upon equating future expected growth to the single most recent historic value of b and of r, without any attempt to estimate the value of the future return on equity, "r" expected by investors for the future , without any attempt to make the retention rate consistent with the dividend rate used to compute the dividend yield, and without any increment to growth to account for expected stock sales above book value. It should be made clear on this record that the plowback method tested by Dr. Vander Weide is vastly different that the proper implementation of the "b x r", or plowback method that I have used.

Q. PLEASE SHOW HOW MUCH DIFFERENT THE RESULT FROM THE PLOWBACK METHOD TESTED BY DR. VANDER WEIDE IS FROM THE RESULT YOU HAVE OBTAINED.

A. The implementation of the plowback method tested by Dr. Vander Weide to the comparative group of electric utilities produces a DCF indicated cost of equity of 8.28%[20]. This 8.28% is considerably lower than ANY of the DCF results I have

[20] The historic actual return on equity, "r" was 12.76% per Schedule JAR 3, P. 2, the most recent actual earnings per share was $2.41 per Schedule JAR 3, P. 2, and the most recent dividend rate was $1.75, per Schedule JAR 3, P. 1. (2.41-1.75)/2.41= .2739, making the retention rate, b, =0.2739. 0.2739*12.76%=3.49%. 3.49% + a dividend yield of 4.84% per Schedule JAR 3, P. 1 = 8.28%.

shown on Schedule JAR 2, and is 172 basis points below my equity cost recommendation. I agree with Dr. Vander Weide that implementing the plowback method in the seriously flawed version of the plowback method he tested produces an unreliable result. However, any attempts to equate the method he tested with the method I have recommended in this case would be inappropriate.

C. Arithmetic Versus Geometric Average

Q. YOU SAID THAT ONE PROBLEM WITH DR. VANDER WEIDE'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 [21], and computing an

[21] 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.

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.

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..."[22].

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?

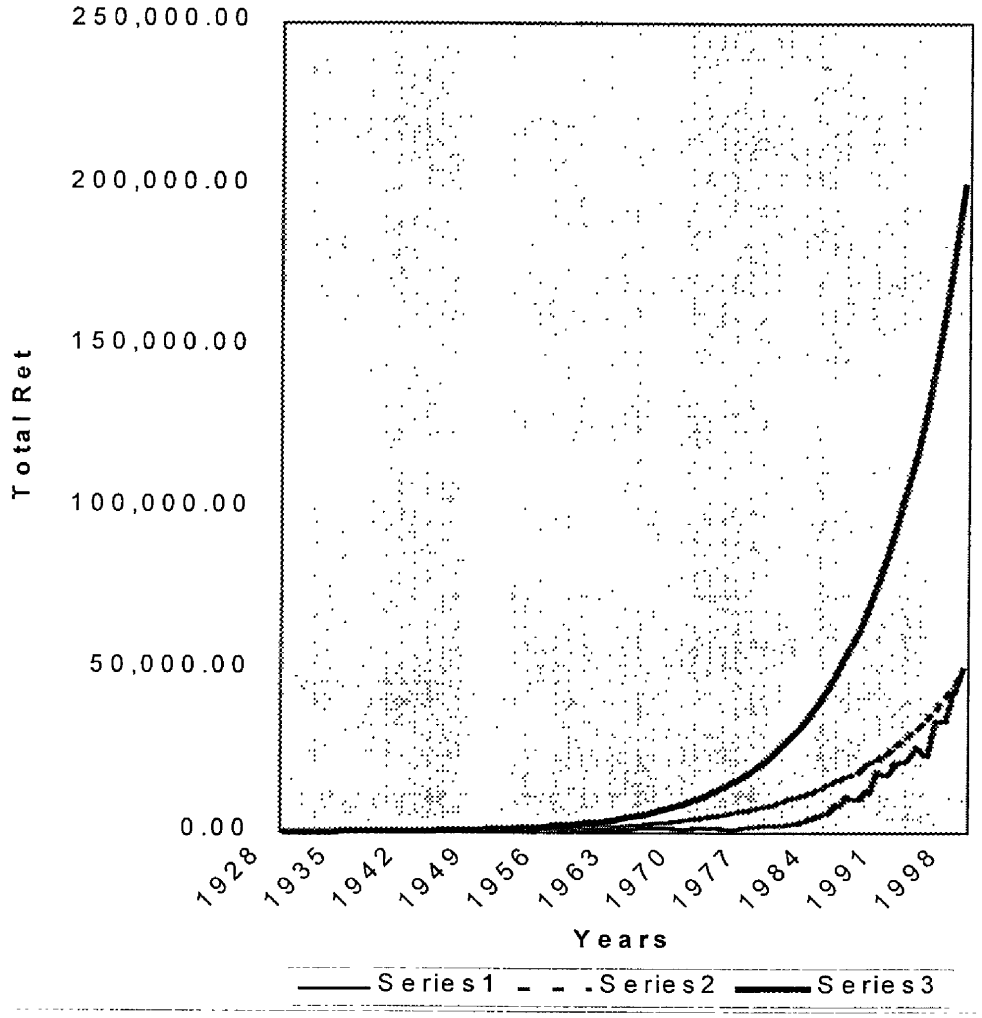
---

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

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 Index, 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, the bottom line is the actual return on the S&P Utilities Index, the smoothed line that is near the actual results is the geometric return on the S&P Utilities Index and the top line way above the actual results is the arithmetic return.

Actual Reteurn on $100 Investment in S&P Utility Index versus Arithmetic Return and Geometric Return from 1928 through 1998



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 investors 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.

D. Trend in Equity Risk Premium

Q. ON PAGE 36 OF HIS TESTIMONY, DR. VANDER WEIDE CLAIMS THAT THERE IS NO SIGNIFICANT TREND IN THE EQUITY RISK PREMIUM OVER THE 1937 TO 2001 TIME PERIOD. PLEASE RESOND.

A. Dr. Vander Weide is incorrect. 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 Dr. Vander Weide 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". Dr. Vander Weide's statistical method did nothing to smooth out this noise, so the result he got is irrelevant.

E. Financing Costs

Q. DR. VANDER WEIDE DISCUSSES FINANCING/FLOTATION COSTS ON PAGE 21 OF HIS TESTIMONY. PLEASE RESPOND.

A. In reality, financing costs for equity tend to be very small. The FERC, in its generic rulemaking proceedings[23], found that financing costs were only a very few basis points. Adjusting for such a small amount is eliminated in rounding error.

Second, in the current environment, most electric utilities have market-to-book ratios considerably in excess of 1.0. As shown on Schedule JAR 3, P. 1, the current market-to-book ratio of electric utilities is approximately 1.8. With a market-to-book ratio this high, external financing actually is profitable rather than costly.

F. Conclusions

Q. PLEASE SUMMARIZE YOUR CONCLUSIONS.

A. Dr. Vander Weide 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 10.20% cost of equity is based upon a constant growth DCF approach that computes a constant growth rate that is required for the model result to be meaningful and 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 COMPLETE YOUR TESTIMONY?

A. Yes.

[23] For example, see the "Flotation Costs" section of the FERC decision in Docket RM87-35-000 in the Generic Determination of Rate of Return on Common Equity for Public Utilities, January 29, 1988.

APPENDIX A

TESTIFYING EXPERIENCE OF

JAMES A. ROTHSCHILD

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

FEDERAL ENERGY REGULATORY COMMISSION (FERC)

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.

Transco, Docket Nos. RP-97-71-000 and RP97-312-000, June, 1997, Rate of Return.

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.

GEORGIA

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.
Commonwealth Edison Company; ICC Docket No. 87-0057, Rate of Return and Income Taxes, April 3, 1987.
Commonwealth Edison Company; ICC Docket No. 87-0043, Financial Testimony, April 27, 1987.
Commonwealth Edison Company; ICC Docket Nos. 87-0169, 87-0427,88-0189,880219,88-0253 on Remand, Financial Planning Testimony, August, 1990.

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.

KENTUCKY

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

MASSACHUSETTS

Boston Edison Company; Docket No. DPU 906, Rate of Return, December, 1981
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.
Bell Atlantic, Affidavit re Financial Issues regarding merger with GTE, June, 1999.
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
Conectiv/Pepco Merger, BPU Docket No. EM01050308, Financial Issues, September 2001
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

National Association of Water Companies; Tariff Design, 1977
Natural Gas Unbundling Cases, Financial Issues, August 1999
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
New Jersey Land Title Insurance Companies, Rate of Return and Accounting, August and November, 1985
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

NEW YORK

Consolidated Edison Company; Case No.27353, Accounting and Rate of Return, October, 1978
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
Big Run Telephone Company; Docket No. R-79100968, Accounting and Rate of Return, November, 1980.
Bloomsburg Water Company; Docket Nos. R-912064 and R-912064C001-C003, Rate of Return, December, 1991.
Citizens Utilities Water Company of Pennsylvania and Citizens Utilities Home Water Company; Docket No. R-901663 and R-901664, Rate of Return, September, 1990
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
Philadelphia Suburban Water Company, Docket No. R-00953343, Rate of Return, August, 1995.
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
Valley Gas and Bristol & Warren Gas Co., Docket No. 2276, April, 1995
Wakefield Water Company, Docket No. 1734, Rate of Return, April, 1984

SOUTH CAROLINA

Small Power Producers & Cogeneration Facilities; Docket No. 80-251-E, Cogeneration Rates, August, 1984

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

Chesapeake and Potomac Telephone Company; Formal Case No. 850; Rate of Return, July, 1991.

Chesapeake and Potomac Telephone Company, Formal Case No. 814-Phase III, Financial Issues, October, 1992.

Chesapeake and Potomac Telephone Company, Formal Case 926, Rate of Return, July, 1993.

PEPCO; Formal Case No. 889, Rate of Return, January, 1990.

PEPCO; Formal Case No. 905, Rate of Return, June, 1991.

PEPCO; Formal Case No. 912, Rate of Return, March, 1992.

PEPCO; Formal Case No. 929, Rate of Return, October, 1993.

PEPCO; Formal Case No. 951, Rate of Return, September, 1996

PEPCO; Formal Case No. 945, Phase I, Rate of Return, June, 1999.

FLORIDA POWER CORPORATION Company, Case No. 922, Rate of Return, April, 1993.

FLORIDA POWER CORPORATION Company, Case No. 934, Rate of Return, April, 1994.

OTHER

Railroad Cost of Capital, Ex Parte No. 436, Rate of Return, January 17, 1983 (Submitted to the Interstate Commerce Commission)

Report on the Valuation of Nemours Corporation, filed on behalf of IRS, October, 1983 (Submitted to Tax Court)

SCHEDULES

JAR 1 - JAR-10

Florida Power Corporation
Overall Cost of Capital

BASED ON ACTUAL CONSOLIDATED CAPITAL STRUCTURE
(RECOMMENDED)

Type of Capital	Ratios [A]	Cost Rate	Weighted Cost Rate	Pre-tax Cost Rate
Debt	53.51%	7.12% [B]	3.81%	3.81%
Preferred Stock	0.83%	4.51% [B]	0.04%	0.06%
Common Equity	33.38%	10.20% [C]	3.40%	5.23%
Customer Deposits				
Active	3.07%	6.13% [B]	0.19%	0.29%
Inactive	0.01%	0.00% [B]	0.00%	0.00%
Investment Tax Credit				
Post '70 - Equity	0.77%	10.10% [D]	0.08%	0.12%
Post '70 - Debt	0.47%	7.13% [B]	0.03%	0.03%
Deferred Income Taxes	8.76%	0.00% [B]	0.00%	0.00%
FAS 109 Liability - Net	-0.78%	0.00% [B]	0.00%	0.00%
	100.00%		7.55%	9.55%
Common Equity As a percentage of Common Equity + Debt + Preferred Equity				38.04%

BASED UPON AVERAGE CAPITAL STRUCTURE FOR
COMPARATIVE ELECTRIC COMPANIES

Type of Capital	Ratios [A]	Cost Rate	Weighted Cost Rate	Pre-tax Cost Rate
Debt	48.65%	7.12% [B]	3.47%	3.47%
Preferred Stock	0.83%	4.51% [B]	0.04%	0.06%
Common Equity	38.22%	10.00% [C]	3.82%	5.88%
Customer Deposits				
Active	3.07%	6.13% [B]	0.19%	0.29%
Inactive	0.01%	0.00% [B]	0.00%	0.00%
Investment Tax Credit				
Post '70 - Equity	0.77%	9.90% [D]	0.08%	0.12%
Post '70 - Debt	0.47%	7.13% [B]	0.03%	0.03%
Deferred Income Taxes	8.76%	0.00% [B]	0.00%	0.00%
FAS 109 Liability - Net	-0.78%	0.00% [B]	0.00%	0.00%
	100.00%		7.62%	9.84%
Common Equity As a percentage of Common Equity + Debt + Preferred Equity				43.56%

BASED ON CAPITAL STRUCTURE REQUESTED BY COMPANY

Type of Capital	Ratios [A]	Cost Rate	Weighted Cost Rate	Pre-tax Cost Rate
Debt	33.25%	7.12% [B]	2.37%	2.37%
Preferred Stock	0.83%	4.51% [B]	0.04%	0.06%
Common Equity	53.82%	9.50% [C]	5.09%	7.84%
Customer Deposits				
Active	3.07%	6.13% [B]	0.19%	0.29%
Inactive	0.01%	0.00% [B]	0.00%	0.00%
Investment Tax Credit				
Post '70 - Equity	0.77%	9.41% [D]	0.07%	0.11%
Post '70 - Debt	0.47%	7.13% [B]	0.03%	0.05%
Deferred Income Taxes	8.76%	0.00% [B]	0.00%	0.00%
FAS 109 Liability - Net	-0.78%	0.00% [B]	0.00%	0.00%
	100.00%		7.79%	10.72%
Common Equity As a percentage of Common Equity + Debt + Preferred Equity				81.14%

Source
[A] Schedule JAR 1, P 2
[B] Schedule D-1 (page 1 of 17) Docket No 000824-EI
[C] Schedule JAR 2
[D] Cost of common equity multiplied by same ratio as used by company on Schedule D-1 (page 1 of 17) Docket No 000824-EI of 13 07/13 20%

FLORIDA POWER
COMPUTATION OF CAPITAL STRUCTURE

	Capital Structure Per Co.	Per Company Request Capital Structure per $million	Actual Capital Structure per $million	Actual Capital Structure	Actual Capital Structure per $million	Capital Structure Consistent With Comparative Electric Companies
Debt	**33.25%**	$332,500	$535,100	53.51%	$486,500	48 65%
Preferred Stock	**0.83%**	$8,300	$8,300	0 83%	$8,300	0.83%
Common Equity	**53.62%**	$536,200	$333,600	33.36%	$382,200	38 22%
Customer Deposits						
Active	**3.07%**	$30,700	$30,700	3 07%	$30,700	3.07%
Inactive	**0.01%**	$100	$100	0.01%	$100	0 01%
Investment Tax Credit						
Post '70 - Equity	**0.77%**	$7,700	$7,700	0.77%	$7,700	0.77%
Post '70 - Debt	**0.47%**	$4,700	$4,700	0.47%	$4,700	0 47%
Deferred Income Taxes	**8.76%**	$87,600	$87,600	8.76%	$87,600	8.76%
FAS 109 Liability - Net	**-0.78%**	($7,800)	($7,800)	-0 78%	($7,800)	-0.78%
	100 00%	$1,000,000	$1,000,000	100.00%	$1,000,000	100.00%
Equity as percent of debt+preferred+common		61.14%		38 04%		43.58%

Capital Structure

Amount	Progress Energy Consolidated Amount 9/30/2001 [A]	Florida Power Amount	Progress Energy minus Florida Power
Common Equity	$6,203,097	$2,075,128	$4,127,969
Preferred Equity	$92,831	$33,497	$59,334
Debt	$10,010,557	$1,577,020	$8,433,537
	$16,306,485	$3,685,645	$12,620,840
Percent			
Common Equity	38.04%	56.30%	32.71%
Preferred Equity	0.57%	0.91%	0.47%
Debt	61.39%	42.79%	66.82%
	100.00%	100.00%	100.00%

Source:

[A] SEC Edgar website

Florida Power Corp.
Cost of Debt

	Cost Rate	Ratio	Weighted Cost
Fixed Rate Debt	7.14%	33.02%	7.09%
Variable Rate Debt	4.92%	0.17%	0.03%
Short Term Debt	4.92%	0.06%	0.01%
		33.25%	**7.12%**

Source: Florida Power. Schedule D-1

Schedule JAR 2

Florida Power Corporation
COST OF EQUITY SUMMARY

	Based Upon Average for Year Ended 11/30/01Stock Prices		Based Upon Stock Prices on 11/30/01	
DCF				
SIMPLIFIED DCF, OR D/P +G RESULTS:				
COMPARATIVE ELECTRIC COMPANIES	9.48%	[A]	10.03%	[A]
PROGRESS ENERGY	10.17%	[B]	10.64%	[B]
COMPARATIVE GAS COMPANIES	9.52%	[C]	9.95%	[C]
	9.72%		10.21%	
COMPLEX DCF RESULT FOR COMPARATIVE ELECTRIC COMPANIES				
Based upon HIGH End of Range for future return on book	10.23%	[D]	10.64%	[E]
Based upon LOW End of Range for future return on book	9.62%	[F]	10.01%	[G]
Average of high-low results		10.13%		
Based upon VALUE LINE Median for future return on book	10.83%	[H]	11.27%	[I]

Risk Premium/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	8.12%	[J]		
Results for Equity of Average Risk			9.83%	[J]
Average	8.12%		9.36%	

	Based Upon Actual Capital Structure	Based on Company Requested Capital Structure
Recommended Equity Cost Rate	10.00%	10.00%
Capital Structure Risk Adjustment	0.20%	-0.50%
Cost of equity net of tax effect	10.20%	9.50%

Source:

[A] Schedule JAR 4, P. 1
[B] Schedule JAR 4, P. 2
[C] Schedule JAR 4, P. 3
[D] Schedule JAR 5, P 2
[E] Schedule JAR 5, P. 1
[F] Schedule JAR 5, P. 4
[G] Schedule JAR 5, P. 3
[H] Schedule JAR 5, P. 6
[I] Schedule JAR 5, P. 5
[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 unusually 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. 98 [A]	[2] Book Per Sh. Dec. 99 [A]	[3] Book Per Sh. Dec. 00 [A]	[4] Book Per Sh. Dec. 01 [A]		[5] Market Price At 11/30/01 [C]	[6] High for Year [C]	[7] Low for Year [C]	[8] Market to Book At 11/30/01	[9] Avg for Year [D]	[10] Div. Rate [A]	[11] Dividend Yield At 11/30/01 [E]	[12] Avg. for Year [E]
COMPARATIVE ELECTRIC COMPANIES														
Allegheny Energy	1	$16 61	$15 35	$15 76	$22 10	E	$34 85	$55 06	$33 35	1.58	2 34	$1 72	4.94%	3 89%
Allete	5	$10 85	$10 96	$12 06	$13 60	E	$23 66	$26 89	$20 19	1.74	1 83	$1 07	4 52%	4 55%
Ameren	5	$22 27	$22 52	$23 30	$24 10	E	$40 88	$46 94	$36 53	1.70	1.76	$2 54	6 21%	6 09%
American Elec. PWR	5	$25 24	$25 79	$25 01	$26 20	E	$41 25	$51 20	$39 25	1.57	1.77	$2 40	5.82%	5 31%
Cinergy	5	$16 02	$16 70	$17 36	$18 50	E	$29 48	$35 60	$28 00	1.59	1.77	$1 80	6 11%	5.66%
Cleco Corporation	5	$9 07	$9 44	$10 04	$10 60	E	$20 04	$28 25	$19 40	1.89	2.31	$0 88	4 39%	3.69%
CMS Energy Corp.	5	$20 63	$21 17	$19 48	$21 05	E	$23 03	$32 25	$19 49	1.09	1.28	$1 46	6.34%	5.64%
Dominion Res.	1	$27 34	$25 50	$28 45	$29 85	E	$58 45	$69 99	$55 13	1.96	2.15	$2 58	4.41%	4.12%
DPL INC.	5	$8 58	$9 20	$6 80	$6 80	E	$23 50	$33 81	$22 05	3 46	4 11	$0 94	4 00%	3.37%
DQE, INC.	1	$19 18	$18 78	$14 02	$11 75	E	$17 62	$34 44	$17 27	1.50	2.01	$1 68	9 53%	6 50%
DTE Energy CO.	5	$25 49	$26 95	$28 15	$31 45	E	$41 30	$47 13	$33 13	1.31	1 35	$2 06	4.99%	5 13%
Duke Energy	1	$11 23	$12 29	$13 61	$16 10	E	$36 15	$47 74	$32 40	2.25	2.70	$1 10	3.04%	2 75%
FPL Group, Inc	1	$28 37	$30 07	$31 82	$31 20	E	$55 40	$73 00	$51 20	1.78	1.97	$2 24	4.04%	3 61%
Hawaiian Electric	1	$25 75	$26 31	$25 43	$26 40	E	$37 40	$41 25	$33 56	1 42	1.44	$2 48	6 63%	6 63%
IDACORP, Inc.	11	$19 42	$20 02	$21 82	$23 00	E	$37 32	$51 81	$33 55	1.62	1.90	$1 86	4.98%	4.36%
Great Plains En'gy	5	$14 41	$13 97	$14 88	$15 05	E	$24 01	$28.19	$23 19	1.60	1.72	$1 66	6.91%	6 46%
MDU Resources	11	$10 38	$11 74	$13 55	$16 00	E	$24 56	$40 37	$22 38	1 54	2 12	$0 92	3.75%	2 93%
Nisource Inc.	5	$9 78	$10 90	$15 61	$17 15	E	$20 90	$32 55	$18 25	1 22	1.50	$1 16	5.55%	4.57%
NSTAR	1	$22 27	$26 57	$25 31	$24 55	E	$43 24	$45 05	$33 91	1.76	1.58	$2 06	4.76%	5.22%
Pinnacle West	11	$25 50	$26 00	$28 09	$30 20	E	$41 75	$50 70	$37 65	1.38	1.52	$1 60	3.83%	3 62%
Progress Energy	1	$19 49	$21 38	$26 32	$28 35	E	$41 45	$49 38	$38 78	1.46	1.61	$2 12	5.11%	4.81%
P.S. Enterprise GP.	1	$21 98	$18 46	$19 21	$20 75	E	$40 55	$51 55	$36 88	1 95	2 21	$2 16	5.33%	4 89%
RGS Energy Group	1	$20 94	$21 43	$22 19	$22 60	E	$38 32	$39 35	$27 75	1.70	1 50	$1.80	4.70%	5.37%
Southern Co.	1	$14 02	$13 82	$15 67	$11 20	L	$22 75	$35 72	$20 89	2.03	2.11	$1 34	5.89%	4.73%
Teco Energy, Inc	1	$11 42	$10 73	$11 93	$13 25	E	$26 41	$33 19	$25 09	1.99	2 31	$1 38	5.23%	4.74%
TXU Corp	5	$29 21	$30 15	$30 13	$32 45	E	$45 10	$50 00	$34 81	1.39	1.36	$2 40	5 32%	5 66%
UIL Holdings	1	$31 74	$32 59	$34 03	$34 45	E	$49 75	$51 89	$43 78	1.44	1.40	$2 88	5.79%	6 02%
Vectren Corp	5	$0 00	$11 55	$11 91	$13 35	E	$21 20	$26 50	$19 76	1 59	1 83	$1 06	5.00%	4 58%
XCEL Energy	11	$18 25	$16 42	$16 37	$17 30	E	$27 31	$31 85	$24 19	1 58	1.66	$1 50	5 49%	5.35%
AVERAGE		$18.39	$19 20	$19.98	$21.01		$34.06	$42.82	$30 41	1.69	1.90	$1.75	5.26%	4.84%
COMPARATIVE GAS COMPANIES														
AGL Resources		$11 42	$11 59	$11 50	$12 00	E	$21 43	$24 50	$18 95	1.79	1 85	$1 08	5.04%	4.97%
Atmos Energy		$12 21	$12 09	$12 28	$15 25	E	$19 60	$26 25	$19 46	1 29	1 66	$1 16	5 92%	5.08%
Energen Corp.		$11 25	$12 13	$13 31	$15 65	E	$23 18	$40 25	$21 50	1 48	2 13	$0 70	3 02%	2.27%
KeySpan		$23 18	$20 28	$20 65	$21 40	E	$33 13	$43 63	$29 10	1.55	1.73	$1 78	5 37%	4.90%
Laclede		$14 57	$14 96	$14 99	$15 25	E	$23 70	$25 48	$21 25	1.55	1 55	$1 34	5.65%	5.74%
New Jersey Resources		$16 33	$17 03	$18 65	$22 45	E	$46 95	$48 80	$37 26	2.09	2.09	$1 76	3.75%	4 09%
NICOR Inc.		$15 97	$16 80	$15 56	$16 85	E	$38 97	$43 88	$34 00	2 31	2.40	$1 76	4.52%	4.52%
Northwest Nat. Gas		$16 59	$17 12	$17 93	$18 45	E	$24 45	$26 75	$21 65	1.33	1.33	$1 24	5.07%	5.12%
NUI		$17 59	$18 61	$19 79	$19 30	E	$22 70	$33 94	$20 03	1.18	1.38	$0.98	4 32%	3.63%
Peoples Energy		$21 03	$21 66	$22 02	$24 10	E	$38 42	$46 94	$34 35	1.59	1.76	$2 04	5.31%	5.02%
Piedmont National Gas		$14 91	$15 71	$16 52	$18 90	E	$33 60	$39 44	$29 19	1 78	1.94	$1 54	4.58%	4.49%
SEMCO Energy		$7 61	$7 95	$7 50	$8 10	E	$12 10	$16 03	$12 10	1 49	1.84	$0 84	6 94%	5 85%
South Jersey Industries		$15 70	$16 61	$17 54	$16 40	E	$33 70	$33 70	$27 60	2.05	1.81	$1 48	4.39%	4 83%
WGL Holding		$13 86	$14 72	$15 31	$16 50	E	$27 72	$31 50	$25 26	1.68	1.78	$1 26	4.55%	4 44%
AVERAGE		$15.16	$15.52	$15.97	$17 19		$28.55	$34.41	$25 13	1 65	1 80	$1 35	4 89%	4.64%

Sources [A] Most current Value Line at time of prep of sch. Duke adjusted for split.
[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%
Allete	$1.49	$1.67	14.51%	14.50%	13.66%
Ameren	$2.81	$3.33	14.54%	13.50%	12.55%
American Elec. PWR	$2.69	$1.04	4.09%	14.00%	10.54%
Cinergy	$2.10	$2.50	14.68%	13.50%	12.84%
Cleco Corporation	$1.19	$1.46	14.99%	15.50%	12.86%
CMS Energy Corp.	$2.85	$2.53	12.45%	12.50%	13.64%
Dominion Res	$2.99	$2.50	9.27%	14.00%	11.32%
DPL INC.	$1.35	$1.49	18.63%	23.00%	15.19%
DQE, INC	$2.65	$1.31	7.99%	15.00%	13.96%
DTE Energy CO.	$3.33	$3.27	11.87%	12.50%	12.70%
Duke Energy	$1.80	$2.01	15.52%	15.00%	15.31%
FPL Group, Inc	$4.07	$4.14	13.38%	15.00%	13.93%
Hawaiian Electric	$2.89	$2.54	9.82%	12.50%	11.10%
IDACORP, Inc.	$2.43	$3.50	16.73%	11.50%	12.32%
Great Plains En'gy	$1.26	$2.05	14.21%	13.50%	8.88%
MDU Resources	$1.52	$1.80	14.23%	13.00%	13.74%
Nisource Inc.	$1.27	$1.39	10.11%	15.50%	12.28%
NSTAR	$2.77	$3.19	12.30%	14.50%	11.34%
Pinnacle West	$3.18	$3.35	12.39%	11.00%	12.35%
Progress Energy	$2.55	$2.34	9.81%	13.00%	12.48%
P.S. Enterprise GP.	$3.12	$3.55	18.85%	16.00%	15.43%
RGS Energy Group	$2.44	$2.60	11.92%	11.00%	11.52%
Southern Co.	$1.83	$2.01	13.63%	14.50%	13.15%
Teco Energy, Inc	$1.53	$1.97	17.39%	15.50%	13.81%
TXU Corp	$3.19	$3.23	10.72%	11.00%	10.75%
UIL Holdings	$3.71	$4.26	12.79%	11.50%	11.53%
Vectren Corp	$1.48	$1.17	9.97%	14.00%	25.63%
XCEL Energy	$1.43	$1.60	9.76%	14.00%	8.75%
AVERAGE	$2.37	$2.41	12.76%	14.02%	13.12%
		Median	12.79%	14.00%	12.70%
COMPARATIVE GAS COMPANIES					
AGL Resources	$0.91	$1.29	11.17%	13.50%	7.91%
Atmos Energy	$0.81	$1.03	8.45%	17.50%	6.67%
Energen Corp	$1.32	$1.82	14.31%	21.00%	11.29%
KeySpan	$1.62	$2.10	10.26%	13.50%	7.46%
Laclede	$1.47	$1.37	9.15%	11.50%	9.96%
New Jersey Resources	$2.49	$2.69	15.08%	13.50%	14.93%
NICOR Inc	$2.57	$2.94	18.17%	16.50%	15.69%
Northwest Nat. Gas	$1.70	$1.79	10.21%	11.00%	10.09%
NUI	$1.75	$2.07	10.78%	12.00%	9.67%
Peoples Energy	$2.39	$2.71	12.41%	12.00%	11.20%
Piedmont National Gas	$1.86	$2.01	12.47%	12.00%	12.15%
SEMCO Energy	$0.96	$0.90	11.65%	15.50%	12.34%
South Jersey Industries	$2.01	$2.16	12.65%	12.00%	12.44%
WGL Holding	$1.47	$1.79	11.92%	12.00%	10.29%
	$1.67	$1.91	12.05%	13.82%	10.86%
		Median	11.79%	12.75%	10.74%

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

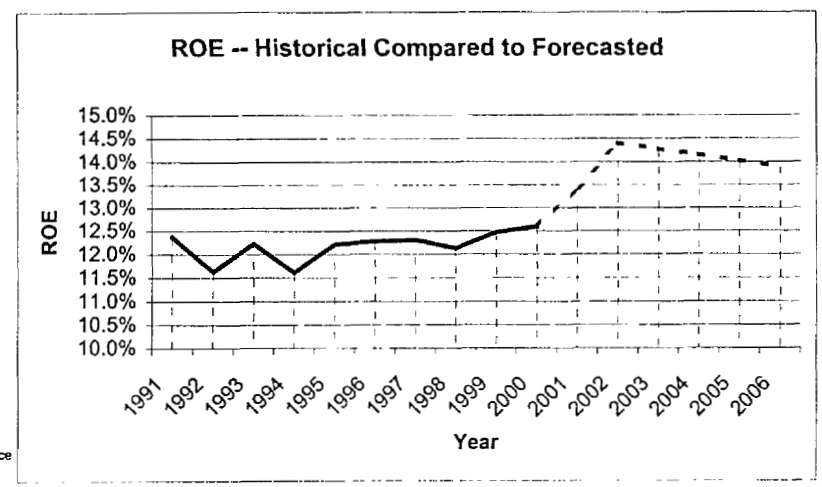
		Y/E Book [2] [A]	Earnings 2000 [A]	Dividends [B]	Zack's Consensus 5 Year Growth Rate 11/30/01 [B]	Y/E Book in 2004 at Zack's Growth [C]	Y/E Book in 2005 at Zack's Growth [C]	Earnings 2005 at Zack's Growth [C]	Return on Equity to achieve Zack's Growth [C]		VALUE LINE BETA [A]
COMPARATIVE ELECTRIC COMPANIES											
Allegheny Energy		$15.76	$2.11	$1.72	9.20%	$17.71	$18.32	$3.28	18.19%	AYE	0.60
Allete		$12.06	$1.67	$1.07	9.50%	$15.09	$16.03	$2.63	16.90%	ALE	0.45
Ameren		$23.30	$3.33	$2.54	4.43%	$26.83	$27.81	$4.14	15.14%	AEE	0.55
American Elec. PWR		$25.01	$1.04	$2.40	6.67%	$18.60	$16.72	$1.44	8.13%	AEP	0.55
Cinergy		$17.36	$2.50	$1.80	6.09%	$20.61	$21.55	$3.36	15.94%	CIN	0.55
Cleco Corporation		$10.04	$1.46	$0.88	10.00%	$13.00	$13.94	$2.35	17.46%	CNL	0.55
CMS Energy Corp.		$19.48	$2.53	$1.46	8.42%	$24.74	$26.34	$3.79	14.84%	CMS	0.60
Dominion Res.		$28.45	$2.50	$2.58	9.64%	$28.05	$27.92	$3.96	14.16%	D	0.50
DPL INC.		$6.80	$1.49	$0.94	8.50%	$9.51	$10.34	$2.24	22.58%	DPL	0.60
DQE, INC.		$14.02	$1.31	$1.68	4.50%	$12.37	$11.90	$1.63	13.45%	DQE	0.45
DTE Energy CO.		$28.15	$3.27	$2.06	7.00%	$33.90	$35.60	$4.59	13.20%	DTE	0.55
Duke Energy		$13.61	$2.01	$1.10	12.70%	$18.56	$20.22	$3.65	18.85%	DUK	0.55
FPL Group, Inc.		$31.82	$4.14	$2.24	7.12%	$40.87	$43.55	$5.84	13.83%	FPL	0.40
Hawaiian Electric		$25.43	$2.54	$2.48	3.68%	$25.69	$25.77	$3.07	11.94%	HE	0.50
IDACORP, Inc.		$21.82	$3.50	$1.86	10.00%	$30.19	$32.83	$5.64	17.89%	IDA	0.50
Great Plains En'gy		$14.88	$2.05	$1.66	6.00%	$16.69	$17.21	$2.74	16.19%	GXP	0.55
MDU Resources		$13.55	$1.80	$0.92	11.26%	$18.18	$19.68	$3.07	16.21%	MDU	0.50
Nisource Inc.		$16.61	$1.39	$1.16	7.55%	$17.72	$18.05	$2.00	11.18%	NI	0.45
NSTAR		$25.31	$3.19	$2.06	6.40%	$30.60	$32.14	$4.35	13.87%	NST	0.50
Pinnacle West		$28.09	$3.35	$1.60	3.86%	$36.78	$39.46	$5.12	13.43%	PNW	0.45
Progress Energy		$26.32	$2.34	$2.12	6.95%	$27.36	$27.67	$3.27	11.90%	PGN	NMF
P.S. Enterprise GP.		$19.21	$3.55	$2.16	6.83%	$25.79	$27.72	$4.94	18.46%	PEG	0.50
RGS Energy Group		$22.19	$2.60	$1.80		$25.39	$26.19	$2.60		RGS	0.50
Southern Co		$15.67	$2.01	$1.34	5.31%	$18.73	$19.59	$2.60	13.59%	SO	NMF
Teco Energy, Inc.		$11.93	$1.97	$1.38	8.02%	$14.87	$15.77	$3.02	19.72%	TE	0.50
TXU Corp.		$30.13	$3.23	$2.40	8.77%	$34.24	$35.51	$4.92	14.10%	TXU	0.60
UIL Holdings		$34.03	$4.26	$2.88	3.00%	$39.98	$41.58	$4.94	12.11%	UIL	0.50
Vectren Corp.		$11.91	$1.17	$1.06	8.42%	$12.45	$12.62	$1.75	13.99%	VVC	NMF
XCEL Energy		$16.37	$1.60	$1.50	8.17%	$16.86	$17.01	$2.37	13.99%	XEL	NMF
AVERAGE	Average	$19.98	$2.41	$1.75	7.69%	$21.82	$22.57	$3.28	15.33%		0.51
	Median				7.86%				14.13%		0.50
COMPARATIVE GAS COMPANIES											
AGL Resources		$11.50	$1.29	$1.08	9.85%	$12.49	$12.79	$1.80	14.21%	ATG	0.55
Atmos Energy		$12.28	$1.03	$1.16	12.20%	$11.58	$11.35	$1.83	15.97%	ATO	0.55
Energen Corp		$13.31	$1.82	$0.70	6.36%	$18.55	$20.07	$2.48	12.83%	EGN	0.75
KeySpan		$20.65	$2.10	$1.78	9.00%	$22.25	$22.74	$3.23	14.37%	KSE	0.55
Laclede		$14.99	$1.37	$1.34	7.50%	$15.13	$15.18	$1.97	12.98%	LG	0.50
New Jersey Resources		$18.65	$2.69	$1.76	6.64%	$23.03	$24.31	$3.71	15.67%	NJR	0.55
NICOR Inc.		$15.56	$2.94	$1.76	6.38%	$21.08	$22.69	$4.01	18.30%	GAS	0.60
Northwest Nat. Gas		$17.93	$1.79	$1.24	5.00%	$20.42	$21.12	$2.28	11.00%	NWN	0.55
NUI		$19.79	$2.07	$0.98	9.67%	$25.31	$27.04	$3.28	12.55%	NUI	0.70
Peoples Energy		$22.02	$2.71	$2.04	6.67%	$25.18	$26.10	$3.74	14.60%	PGL	0.70
Piedmont National Gas		$16.52	$2.01	$1.54	6.73%	$18.74	$19.39	$2.79	14.61%	PNY	0.55
SEMCO Energy		$7.50	$0.90	$0.84	5.88%	$7.78	$7.86	$1.20	15.32%	SEN	0.60
South Jersey Industries		$17.54	$2.16	$1.48	4.50%	$20.58	$21.43	$2.69	12.82%	SJI	0.45
WGL Holding		$15.31	$1.79	$1.26	5.50%	$17.74	$18.43	$2.34	12.94%	WGL	0.60
	Average	$15.97	$1.91	$1.35	7.06%	$18.56	$19.32	$2.67	14.15%		0.59
	Median				6.66%				14.29%		0.55

[A] Value Line
[B] Zacks.com
[C] 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%
Allete	14 1%	13 9%	10 5%	8 2%	8.4%	10 9%	11 6%	11 0%	12 7%	13 0%	12 5%	13 5%	13 8%	14 2%	14 5%	14 8%
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%
American Elec PWR	11 8%	11.0%	12 0%	11 8%	12 2%	12 9%	13 3%	11 1%	10 4%	4 0%	14 0%	14 0%	14 0%	14 0%	14 0%	14 0%
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%
Cleco Corporation	14 3%	13 7%	12 2%	12 7%	13 2%	13 4%	12 9%	12 7%	12 9%	14 9%	14 5%	14 5%	14 8%	15 2%	15 5%	15 8%
CMS Energy Corp	14 4%	9 4%	16 0%	16 2%	13 9%	14 1%	13 6%	10 3%	12 9%	12 1%	10 5%	12 5%	12 5%	12 5%	12 5%	12 5%
Dominion Res	11 9%	10 4%	11 6%	10 5%	9 0%	9 6%	11 0%	6 3%	12 0%	8 0%	12 0%	15 0%	14 7%	14 3%	14 0%	13 7%
DPL INC	11.1%	13 9%	13 5%	13 7%	14.1%	14 3%	14 0%	13 6%	14 0%	22 3%	27 5%	27 5%	26 0%	24 5%	23 0%	21 5%
DQE, INC	12 0%	12 1%	11 0%	12.3%	12 8%	12 0%	11 6%	12 1%	14 8%	10 5%	8 5%	14 0%	14 3%	14 7%	15 0%	15 3%
DTE Engergy CO	18 8%	17 9%	14.9%	11.7%	12 7%	11 8%	11 7%	12 0%	12 4%	11 7%	7 0%	12 5%	12 5%	12 5%	12 5%	12 5%
Duke Engergy	13 0%	10 9%	13 2%	13 0%	13 9%	14 0%	12 0%	15 2%	14 8%	14 7%	16 0%	16 5%	16 0%	15 5%	15 0%	14 5%
FPL Group, Inc.	12 9%	12 2%	12 5%	11 4%	12 6%	12 6%	12 8%	13 0%	13 0%	12 5%	13 5%	13 5%	14 0%	14 5%	15 0%	15 5%
Hawaiian Electnc	9 4%	11 3%	9 6%	10 7%	10 6%	10 2%	10 6%	11 4%	11 0%	9 8%	12 0%	12 5%	12 5%	12 5%	12 5%	12 5%
IDACORP, Inc	9 2%	8 7%	10 9%	10 0%	11 6%	11 9%	12 2%	12 2%	12 1%	16 0%	13 0%	12 5%	12 2%	11 8%	11 5%	11 2%
Great Plain En'gy	11 4%	9 8%	11 8%	11 6%	13 2%	11 5%	11 9%	13 1%	9 0%	13 8%	10 5%	13 0%	13 2%	13 3%	13 5%	13 7%
MDU Resources	12 5%	11 4%	12 0%	11 9%	12 1%	12 7%	13 9%	13 3%	12 4%	12 5%	14 5%	14 0%	13 7%	13 3%	13 0%	12.7%
Nisource Inc	12 9%	12 9%	14 0%	14 5%	15 4%	16 0%	15 1%	16 9%	11 9%	nmf	11 0%	14 5%	14 8%	15 2%	15 5%	15 8%
NSTAR	10 2%	10 8%	11 7%	11 9%	9.8%	12 3%	12 3%	12 6%	9 1%	13 0%	14 5%	14 5%	14 5%	14 5%	14 5%	14 5%
Pinnacle West	nmf	10 2%	12 2%	9 8%	9 3%	9 2%	11 6%	11 2%	12 2%	11 9%	12 0%	11 5%	11 3%	11 2%	11 0%	10.8%
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%
P.S Enterprise GP	11.4%	9 6%	12 7%	12 8%	12 2%	11 5%	10 7%	12 6%	17 2%	19 1%	18 0%	18 0%	17 3%	16 7%	16 0%	15 3%
RGS Energy Group	9 8%	9 4%	9 8%	9 0%	8 5%	11 4%	11.1%	11 4%	11 6%	12 0%	10 0%	11 0%	11 0%	11 0%	11 0%	11 0%
Southern Co.	11 2%	13 2%	13 0%	12 1%	12 6%	12 2%	11 2%	12 2%	13 6%	12 3%	14 5%	15 0%	14 8%	14 7%	14 5%	14 3%
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%
TXU Corp	10 2%	9 4%	10 8%	8 4%	11 6%	11 6%	9 7%	10 2%	10 7%	11 0%	11 5%	11 5%	11 3%	11 2%	11 0%	10 8%
UIL Holdings	11.1%	10 5%	11 6%	10 4%	11 0%	9 7%	10 4%	9 4%	11 4%	12 5%	11 5%	11 5%	11 5%	11 5%	11 5%	11 5%
Vectren Corp									12 6%	9 7%	11 5%	14 0%	14 0%	14 0%	14 0%	14 0%
XCEL Energy	12 0%	8 9%	10 8%	12 2%	13 0%	12 3%	9 5%	11 2%	8 6%	9 7%	13 0%	13 5%	13.7%	13 8%	14 0%	14.2%
Average	*12.4%*	*11.6%*	*12 2%*	*11 6%*	*12.2%*	*12.3%*	*12.3%*	*12.1%*	*12.5%*	*12.6%*	*13 4%*	*14.4%*	*14.3%*	*14.1%*	*14 0%*	*13 9%*

Source Most Current Value Line at Time of Prep 1991 - 2002
The value for 2005 is simply the number from value line's 2004-2006 range
Values for 2003, 2004 and 2006 were interpalated from the 2002 and 2005 values

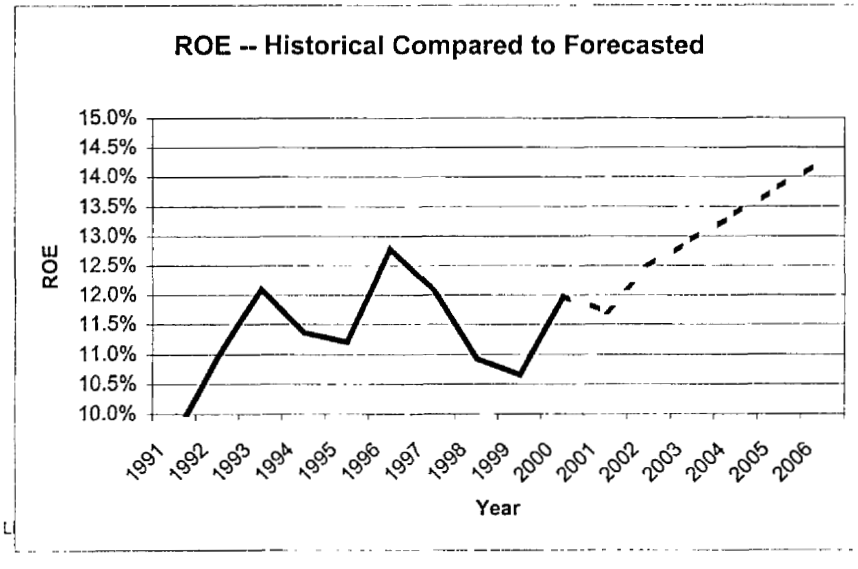


Source

Comparative Gas Companies
Return On Common Equity

	Historical										Forecast					
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
AGL Resources	10.8%	11 5%	10.8%	11.3%	12 5%	12.1%	11.3%	12 3%	7 9%	11.5%	12.5%	13.0%	13 2%	13.3%	13.5%	13.7%
Atmos Energy	8 8%	10.4%	12.3%	9 8%	11 9%	13 9%	12 0%	14.9%	6 6%	8.2%	10.0%	12.0%	13 8%	15.7%	17 5%	19.3%
Energen Corp.	11.6%	12 1%	12 9%	13.1%	11.1%	11.4%	9 6%	11.0%	11.0%	13 8%	15 0%	15.5%	17.3%	19.2%	21.0%	22 8%
KeySpan	9.5%	9.1%	10 6%	11 2%	11 1%	10.7%	10.9%	nmf	8.2%	10.0%	11.0%	13 0%	13 2%	13.3%	13.5%	13.7%
Laclede	10.8%	9.9%	13.2%	11 3%	9.2%	13.6%	12.9%	10.8%	9 5%	9.1%	10.5%	11.5%	11 5%	11 5%	11.5%	11.5%
New Jersey Resources	6 3%	10 2%	11.5%	12 9%	13.1%	13.5%	14 3%	14 4%	14.8%	14 6%	12.5%	13.0%	13 2%	13.3%	13 5%	13.7%
NICOR Inc.	15.2%	15.1%	15.4%	15.9%	14 4%	16 6%	16.7%	14 6%	15 4%	19.2%	17.5%	17.5%	17.2%	16 8%	16.5%	16.2%
Northwest Nat. Gas	5.5%	5.5%	13 2%	11.8%	10.9%	12 7%	11.0%	6.0%	9.9%	10 0%	9 5%	10 0%	10.3%	10.7%	11 0%	11.3%
NUI	4 0%	10.1%	11.3%	7 6%	7.9%	8.3%	9 0%	8.2%	9.4%	10 4%	8.5%	10.0%	10 7%	11.3%	12.0%	12.7%
Peoples Energy	12.1%	11.4%	11.7%	11.6%	9.7%	15.2%	13 7%	10.7%	11.0%	12 4%	13 5%	13 0%	12.7%	12.3%	12.0%	11.7%
Piedmont National Gas	8 6%	13.3%	13.2%	11.8%	11.4%	12.6%	13.1%	13 2%	11.8%	12.1%	10 5%	11 0%	11.3%	11.7%	12.0%	12.3%
SEMCO Energy	10.1%	11.6%	11.0%	10 5%	10 4%	13 3%	10.3%	6 6%	11.9%	12.3%	10 0%	13 0%	13.8%	14.7%	15.5%	16 3%
South Jersey Industries	9.4%	11.5%	10 5%	8.0%	11.2%	10 6%	10.6%	8.2%	11.9%	12 2%	12 0%	12 0%	12.0%	12.0%	12.0%	12.0%
WGL Holding	11 7%	11 7%	11.7%	12.2%	12 0%	14 4%	13 7%	11.1%	9.9%	11.7%	11.0%	10 5%	11.0%	11.5%	12.0%	12.5%
Average	*9 6%*	*11.0%*	*12.1%*	*11.4%*	*11.2%*	*12.8%*	*12 1%*	*10 9%*	*10.7%*	*12.0%*	*11.7%*	*12.5%*	*12.9%*	*13.4%*	*13.8%*	*14.3%*
Recommended											*13.0%*	*13.0%*	*13.0%*	*13 0%*	*13.0%*	*13.0%*

Source: Most Current Value Line at Time of Prep 1991 - 2002
The value for 2005 is simply the number from value line's 2004-2006 range.
Values for 2003, 2004 and 2006 were interpalated from the 2002 and 2005 values.



Source: Most Current Value L

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 84%	5 26%
2 Retention Ratio:			
a) Market-to-book	[B]	1 90	1 69
b) Div. Yld on Book	[C]	9.19%	8.91%
c) Return on Equity	[A]	13 00%	13.00%
d) Retention Rate	[D]	29 30%	31 48%
3 Reinvestment Growth	[E]	3 81%	4.09%
4 New Financing Growth (sv)	[F]	0.72%	0.55%
5 Total Estimate of Investor Anticipated Growth	[G]	4.53%	4.65%
6 Increment to Dividend Yield for Growth to Next Year	[H]	0 11%	0 12%
7 Indicated Cost of Equity	[I]	9 48%	10 03%

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

		Median	Mean	Source:
[A]	Value Line Expectation	14.00%	14 02%	Schedule JAR 3, Page 2
	Expectation Derived from Zack's Consensus Growth Rate	14.13%	15 33%	Schedule JAR 3, P 3
	Earned Return on Equity in 2000	12.79%	12 76%	Schedule JAR 3, Page 2
	Earned Return on Equity in 1999	12 70%	13 12%	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 80% [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

PROGRESS ENERGY
DISCOUNTED CASH FLOW (DCF) INDICATED COST OF EQUITY

		BASED ON AVERAGE MARKET PRICE FOR Year Ending 11/30/01	BASED UPON MARKET PRICE AS OF 11/30/01
1 Dividend Yield On Market Price	[B]	4 81%	5 11%
2 Retention Ratio:			
a) Market-to-book	[B]	1 61	1 46
b) Div. Yld on Book	[C]	7.76%	7.48%
c) Return on Equity	[A]	12 50%	12.50%
d) Retention Rate	[D]	37 96%	40 18%
3 Reinvestment Growth	[E]	4.74%	5 02%
4 New Financing Growth (sv)	[F]	0 49%	0.37%
5 Total Estimate of Investor Anticipated Growth	[G]	5.23%	5.39%
6 Increment to Dividend Yield for Growth to Next Year	[H]	0.13%	0.14%
7 Indicated Cost of Equity	[I]	10 17%	10 64%

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

			Source:
[A]	Value Line Expectation	13 00%	Schedule JAR 3, Page 2
	Expectation Derived from Zack's Consensus Growth Rate	11 90%	Schedule JAR 3, P. 3
	Earned Return on Equity in 2000	9 81%	Schedule JAR 3, Page 2
	Earned Return on Equity in 1999	12 48%	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 80%	[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 GAS COMPANIES
DISCOUNTED CASH FLOW (DCF) INDICATED COST OF EQUITY

			BASED ON AVERAGE MARKET PRICE FOR Year Ending 11/30/01	BASED UPON MARKET PRICE AS OF 11/30/01
1	Dividend Yield On Market Price	[B]	4.64%	4.89%
2	Retention Ratio:			
	a) Market-to-book	[B]	1.80	1.65
	b) Div. Yld on Book	[C]	8.37%	8.09%
	c) Return on Equity	[A]	12.50%	12.50%
	d) Retention Rate	[D]	33.06%	35.31%
3	Reinvestment Growth	[E]	4.13%	4.41%
4	New Financing Growth (sv)	[F]	0.64%	0.52%
5	Total Estimate of Investor Anticipated Growth	[G]	4.78%	4.94%
6	Increment to Dividend Yield for Growth to Next Year	[H]	0.11%	0.12%
7	**Indicated Cost of Equity**	[I]	9.52%	9.95%

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

		Median	Mean	Source.
[A]	Value Line Expectation	12.75%	13.82%	Schedule JAR 3, Page 2
	Expectation Derived from Zack's Consensus Growth Rate	14.29%	14.15%	Schedule JAR 3, P 3
	Earned Return on Equity in 2000	11.79%	12.05%	Schedule JAR 3, Page 2
	Earned Return on Equity in 1999	10.74%	10.86%	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 = 0.60% [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 and High end of Forecast Range

	Year	[1] Year End Book	[2] Retention Rate	[3] Dividend	[4] Earnings Per Share	[5] Retained Earnings Per Share	[6] External Financing Rate	[7] Increment to book from Ext. Fin.	[8] Total Increment 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	0 00%	[K]	[L]	[M]	[N]
	2001	$21.01	36.04%	$1.75	$2.74	$0.99			$0.99	$35 56	1.69		($35.56)		($35.56)
	2002	$22.35	43.04%	$1.77	$3 11	$1.34			$1 34	$37 83	1.69	14 34%		$1 77	$1.77
First	2003	$24.05	45.87%	$1 79	$3.32	$1.52			$1.52	$40.70	1.69	14.29%		$1.79	$1.79
Stage	2004	$25.75	48.36%	$1 82	$3.52	$1.70			$1.70	$43.58	1.69	14 15%		$1 82	$1 82
	2005	$27.44	50 58%	$1 84	$3.73	$1.89			$1.89	$46.45	1.69	14 02%		$1.84	$1.84
	2006	$28 92	36 04%	$2.34	$3.66	$1.32	0 80%	$0.16	$1.48	$48 94	1.69	13 00%		$2.34	$2.34
	2007	$30.47	36.04%	$2.47	$3 86	$1.39	0 80%	$0.16	$1.56	$51.58	1.69	13 00%		$2.47	$2 47
	2008	$32.11	36.04%	$2.60	$4.07	$1.47	0 80%	$0.17	$1.64	$54.35	1.69	13.00%		$2.60	$2.60
	2009	$33.84	36.04%	$2.74	$4.29	$1.55	0 80%	$0.18	$1.73	$57.27	1.69	13 00%		$2.74	$2.74
	2010	$35.66	36 04%	$2.89	$4.52	$1 63	0 80%	$0.19	$1.82	$60.35	1 69	13.00%		$2.89	$2.89
	2011	$37.58	36.04%	$3.04	$4.76	$1.72	0 80%	$0.20	$1.92	$63 60	1.69	13 00%		$3.04	$3 04
	2012	$39.60	36 04%	$3.21	$5 02	$1.81	0 80%	$0.21	$2.02	$67.02	1.69	13.00%		$3.21	$3.21
	2013	$41.73	36.04%	$3.38	$5.29	$1.91	0 80%	$0.22	$2.13	$70 62	1.69	13 00%		$3.38	$3.38
	2014	$43.97	36.04%	$3.56	$5.57	$2 01	0 80%	$0.24	$2.24	$74.42	1.69	13.00%		$3 56	$3 56
	2015	$46.34	36.04%	$3.75	$5 87	$2.12	0 80%	$0.25	$2 36	$78.42	1 69	13.00%		$3.75	$3.75
	2016	$48.83	36.04%	$3.96	$6 19	$2.23	0 80%	$0.26	$2.49	$82.64	1.69	13.00%		$3.96	$3.96
	2017	$51.45	36.04%	$4.17	$6 52	$2.35	0.80%	$0.28	$2.63	$87.09	1.69	13.00%		$4.17	$4.17
	2018	$54.22	36 04%	$4.39	$6.87	$2 48	0 80%	$0 29	$2.77	$91 77	1.69	13 00%		$4.39	$4.39
	2019	$57.14	36.04%	$4.63	$7.24	$2 61	0 80%	$0.31	$2 92	$96.70	1 69	13.00%		$4 63	$4.63
	2020	$60 21	36.04%	$4 88	$7.63	$2.75	0 80%	$0 32	$3.07	$101.90	1.69	13.00%		$4.88	$4.88
	2021	$63.45	36 04%	$5.14	$8 04	$2.90	0 80%	$0 34	$3.24	$107.38	1.69	13.00%		$5 14	$5.14
	2022	$66.86	36.04%	$5.42	$8.47	$3.05	0 80%	$0.36	$3.41	$113.16	1 69	13.00%		$5 42	$5.42
	2023	$70.46	36.04%	$5.71	$8.93	$3.22	0 80%	$0.38	$3.60	$119.25	1.69	13 00%		$5.71	$5.71
	2024	$74.24	36.04%	$6.02	$9.41	$3.39	0 80%	$0.40	$3 79	$125 66	1.69	13.00%		$6.02	$6 02
	2025	$78.24	36.04%	$6.34	$9 91	$3.57	0 80%	$0.42	$3.99	$132.42	1.69	13.00%		$6.34	$6.34
	2026	$82.44	36 04%	$6 68	$10 44	$3.76	0 80%	$0.44	$4.21	$139.54	1.69	13.00%		$6.68	$6.68
	2027	$86.88	36.04%	$7.04	$11.01	$3 97	0 80%	$0.47	$4.43	$147 04	1 69	13.00%		$7 04	$7 04
	2028	$91 55	36 04%	$7.42	$11 60	$4.18	0 80%	$0 49	$4.67	$154.95	1.69	13.00%		$7 42	$7.42
	2029	$96.47	36.04%	$7.82	$12.22	$4.41	0 80%	$0.52	$4.92	$163.28	1.69	13.00%		$7.82	$7.82
	2030	$101.66	36.04%	$8 24	$12.88	$4.64	0 80%	$0.55	$5.19	$172.06	1.69	13.00%		$8.24	$8.24
	2031	$107.13	36 04%	$8.68	$13.57	$4 89	0 80%	$0.58	$5 47	$181.31	1.69	13 00%		$8 68	$8.68
	2032	$112.89	36.04%	$9.15	$14.30	$5 15	0 80%	$0.61	$5 76	$191.07	1 69	13.00%		$9 15	$9 15
	2033	$118.96	36 04%	$9 64	$15 07	$5.43	0.80%	$0.64	$6.07	$201.34	1.69	13.00%		$9.64	$9 64
Second	2034	$125 36	36 04%	$10 16	$15.88	$5 72	0 80%	$0 67	$6.40	$212 17	1.69	13 00%		$10 16	$10 16
Stage	2035	$132.10	36.04%	$10.70	$16.73	$6 03	0 80%	$0 71	$6.74	$223.58	1.69	13.00%		$10.70	$10.70
	2036	$139.20	36.04%	$11.28	$17.63	$6.36	0 80%	$0.75	$7.10	$235.60	1.69	13.00%		$11.28	$11.28
	2037	$146.69	36.04%	$11.89	$18 58	$6.70	0 80%	$0.79	$7.49	$248 27	1 69	13 00%		$11.89	$11.89
	2038	$154.58	36 04%	$12.52	$19.58	$7 06	0 80%	$0.83	$7.89	$261 62	1.69	13 00%		$12.52	$12 52
	2039	$162 89	36.04%	$13.20	$20.64	$7.44	0 80%	$0.88	$8.31	$275.69	1 69	13.00%		$13.20	$13.20
	2040	$171.65	36.04%	$13.91	$21.75	$7.84	0 80%	$0 92	$8.76	$290.52	1.69	13.00%		$13.91	$13 91
	2041	$180.88	36.04%	$14 66	$22 91	$8.26	0.80%	$0.97	$9.23	$306 14	1.69	13 00%	$306.14	$14 66	$320.80
												Internal Rate of Return			10 64%

Source

[A] Schedule JAR 5, P8
[B] First Stage is (Col [4]-Col.[3]/Col.[4]). Second stage is equal to 2001 actual.
[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 and High end of Forecast Range

	Year	[1] Year End Book	[2] Retentio Rate	[3] Dividend $0.00	[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]	[C]	[D]	[E]	[F]	[G]	[H] $0.00	[I] M/B Chan	[J] 0.00%	[K]	[L]	[M]	[N]
	2001	$21.01	36.04%	$1.75	$2.74	$0.99			$0.99	$39.94	1 90		($39.94)		($39.94)
	2002	$22.35	43.04%	$1.77	$3.11	$1.34			$1 34	$42 48	1.90	14 34%		$1.77	$1.77
First	2003	$24 05	45 87%	$1.79	$3.32	$1.52			$1.52	$45.71	1.90	14.29%		$1 79	$1 79
Stage	2004	$25.75	48.36%	$1.82	$3 52	$1.70			$1.70	$48.93	1.90	14.15%		$1.82	$1.82
	2005	$27 44	50.58%	$1 84	$3 73	$1.89			$1.89	$52.16	1.90	14.02%		$1.84	$1.84
	2006	$28 97	36.04%	$2.35	$3.67	$1 32	0 80%	$0 20	$1.52	$55 05	1 90	13.00%		$2 35	$2.35
	2007	$30.58	36.04%	$2.48	$3.87	$1.39	0.80%	$0.21	$1.61	$58.11	1 90	13.00%		$2.48	$2 48
	2008	$32.27	36.04%	$2.61	$4.09	$1 47	0 80%	$0.23	$1.70	$61 34	1.90	13.00%		$2.61	$2.61
	2009	$34.07	36.04%	$2.76	$4.31	$1.55	0 80%	$0.24	$1.79	$64.74	1.90	13.00%		$2.76	$2.76
	2010	$35.96	36 04%	$2.91	$4.55	$1.64	0 80%	$0.25	$1.89	$68 34	1 90	13 00%		$2.91	$2.91
	2011	$37.95	36.04%	$3.07	$4.80	$1.73	0 80%	$0.27	$2.00	$72.14	1.90	13.00%		$3.07	$3.07
	2012	$40.06	36 04%	$3.24	$5.07	$1.83	0 80%	$0.28	$2 11	$76 14	1.90	13.00%		$3.24	$3 24
	2013	$42 29	36.04%	$3 42	$5 35	$1.93	0 80%	$0.30	$2.22	$80.37	1.90	13.00%		$3.42	$3.42
	2014	$44.63	36.04%	$3 61	$5.65	$2.04	0 80%	$0 31	$2.35	$84.83	1.90	13.00%		$3.61	$3.61
	2015	$47.11	36.04%	$3.81	$5.96	$2.15	0 80%	$0 33	$2 48	$89 54	1 90	13.00%		$3 81	$3 81
	2016	$49.73	36.04%	$4.03	$6.29	$2.27	0.80%	$0.35	$2.62	$94.51	1.90	13.00%		$4.03	$4.03
	2017	$52.49	36 04%	$4.25	$6.64	$2.39	0 80%	$0.37	$2 76	$99 76	1.90	13 00%		$4.25	$4.25
	2018	$55 41	36 04%	$4.49	$7 01	$2 53	0 80%	$0.39	$2.91	$105.30	1 90	13.00%		$4.49	$4.49
	2019	$58 48	36.04%	$4 73	$7 40	$2 67	0 80%	$0 41	$3.08	$111.15	1.90	13.00%		$4.73	$4.73
	2020	$61.73	36.04%	$5 00	$7.81	$2.82	0 80%	$0 43	$3 25	$117 32	1.90	13 00%		$5 00	$5.00
	2021	$65 16	36.04%	$5 27	$8.25	$2.97	0 80%	$0.46	$3.43	$123 84	1.90	13.00%		$5.27	$5 27
	2022	$68.78	36 04%	$5.57	$8 71	$3 14	0 80%	$0.48	$3.62	$130 71	1.90	13 00%		$5.57	$5.57
	2023	$72.59	36 04%	$5.88	$9 19	$3.31	0 80%	$0.51	$3.82	$137.97	1 90	13.00%		$5.88	$5.88
	2024	$76 63	36.04%	$6.20	$9.70	$3 50	0.80%	$0 54	$4.03	$145.64	1.90	13.00%		$6 20	$6.20
	2025	$80 88	36.04%	$6.55	$10.24	$3.69	0 80%	$0.57	$4 26	$153 72	1.90	13.00%		$6.55	$6 55
	2026	$85.37	36 04%	$6.91	$10 81	$3 89	0 80%	$0.60	$4 49	$162.26	1.90	13 00%		$6.91	$6.91
	2027	$90 11	36.04%	$7.30	$11.41	$4.11	0 80%	$0.63	$4.74	$171.27	1 90	13.00%		$7.30	$7 30
	2028	$95.12	36.04%	$7.70	$12.04	$4.34	0 80%	$0.66	$5.00	$180.78	1 90	13 00%		$7 70	$7 70
	2029	$100 40	36.04%	$8.13	$12.71	$4.58	0 80%	$0.70	$5 28	$190 82	1.90	13 00%		$8.13	$8.13
	2030	$105.97	36.04%	$8.58	$13.41	$4.83	0 80%	$0.74	$5 58	$201.41	1.90	13.00%		$8.58	$8.58
	2031	$111.86	36.04%	$9.06	$14 16	$5.10	0 80%	$0.78	$5.88	$212.60	1.90	13.00%		$9.06	$9 06
	2032	$118 07	36.04%	$9 56	$14 95	$5.39	0 80%	$0 82	$6 21	$224 40	1.90	13.00%		$9 56	$9 56
	2033	$124 63	36.04%	$10 09	$15.78	$5.69	0 80%	$0.87	$6.56	$236.87	1.90	13.00%		$10.09	$10 09
Second	2034	$131.55	36.04%	$10 65	$16.65	$6.00	0 80%	$0.92	$6.92	$250.02	1.90	13.00%		$10 65	$10 65
Stage	2035	$138.85	36 04%	$11.24	$17.58	$6 33	0 80%	$0.97	$7.30	$263.90	1.90	13.00%		$11.24	$11.24
	2036	$146 56	36 04%	$11.87	$18 55	$6 69	0 80%	$1.02	$7.71	$278.56	1 90	13.00%		$11.87	$11.87
	2037	$154.70	36.04%	$12 52	$19.58	$7.06	0 80%	$1 08	$8.14	$294.03	1 90	13.00%		$12.52	$12.52
	2038	$163.29	36.04%	$13.22	$20 67	$7.45	0 80%	$1.14	$8 59	$310 35	1 90	13.00%		$13 22	$13.22
	2039	$172.36	36.04%	$13.95	$21.82	$7.86	0 80%	$1.20	$9.07	$327.59	1.90	13.00%		$13.95	$13 95
	2040	$181.93	36 04%	$14.73	$23 03	$8.30	0 80%	$1.27	$9 57	$345.78	1.90	13.00%		$14.73	$14.73
	2041	$192.03	36.04%	$15.55	$24.31	$8.76	0.80%	$1.34	$10.10	$364.98	1.90	13 00%	$364 98	$15 55	$380.53
												Internal Rate of Return			10.23%

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]
[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 and Low End of Forecast Range

	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	$21.01	36.04%	$1 75	$2.74	$0.99			$0 99	$35.56	1 69		($35.56)		($35.56)
	2002	$22.35	43.04%	$1 77	$3.11	$1.34			$1 34	$37.83	1.69	14.34%		$1.77	$1 77
First	2003	$24 05	45.87%	$1 79	$3 32	$1.52			$1.52	$40 70	1.69	14.29%		$1.79	$1 79
Stage	2004	$25.75	48.36%	$1 82	$3 52	$1.70			$1.70	$43.58	1.69	14.15%		$1 82	$1.82
	2005	$27.44	50.58%	$1 84	$3 73	$1.89			$1 89	$46.45	1.69	14 02%		$1.84	$1 84
	2006	$28.81	36.04%	$2.16	$3.38	$1.22	0 80%	$0.16	$1 37	$48 77	1.69	12.00%		$2.16	$2.16
	2007	$30.26	36.04%	$2.27	$3.54	$1.28	0 80%	$0.16	$1.44	$51.21	1.69	12.00%		$2 27	$2 27
	2008	$31.77	36 04%	$2.38	$3.72	$1.34	0 80%	$0.17	$1.51	$53.77	1.69	12.00%		$2.38	$2.38
	2009	$33.36	36.04%	$2 50	$3.91	$1.41	0 80%	$0.18	$1.59	$56.45	1.69	12.00%		$2.50	$2.50
	2010	$35.02	36.04%	$2 62	$4.10	$1.48	0 80%	$0.19	$1.67	$59 28	1.69	12 00%		$2.62	$2 62
	2011	$36 77	36.04%	$2 76	$4 31	$1.55	0 80%	$0 20	$1 75	$62 24	1.69	12.00%		$2 76	$2 76
	2012	$38.61	36 04%	$2.89	$4.52	$1.63	0 80%	$0.21	$1.84	$65.35	1.69	12.00%		$2.89	$2 89
	2013	$40.54	36.04%	$3.04	$4.75	$1.71	0 80%	$0.22	$1 93	$68.62	1.69	12.00%		$3.04	$3.04
	2014	$42 57	36.04%	$3.19	$4.99	$1 80	0 80%	$0.23	$2.03	$72.04	1.69	12 00%		$3.19	$3 19
	2015	$44.70	36 04%	$3.35	$5.24	$1.89	0 80%	$0.24	$2.13	$75.65	1.69	12.00%		$3 35	$3 35
	2016	$46.93	36.04%	$3.52	$5.50	$1.98	0 80%	$0.25	$2 23	$79.43	1.69	12.00%		$3.52	$3.52
	2017	$49.27	36.04%	$3.69	$5.77	$2 08	0 80%	$0.27	$2 35	$83 40	1.69	12.00%		$3.69	$3.69
	2018	$51 74	36 04%	$3.88	$6 06	$2.18	0 80%	$0.28	$2.46	$87 57	1 69	12.00%		$3.88	$3 88
	2019	$54.32	36.04%	$4.07	$6.36	$2.29	0 80%	$0.29	$2 59	$91 94	1.69	12.00%		$4 07	$4.07
	2020	$57.04	36.04%	$4.27	$6.68	$2.41	0 80%	$0.31	$2 72	$96 54	1.69	12 00%		$4.27	$4 27
	2021	$59 89	36.04%	$4.49	$7.02	$2.53	0 80%	$0 32	$2 85	$101.36	1.69	12 00%		$4.49	$4.49
	2022	$62 88	36.04%	$4.71	$7.37	$2 66	0 80%	$0 34	$2 99	$106 43	1.69	12 00%		$4 71	$4.71
	2023	$66.03	36.04%	$4.95	$7.73	$2.79	0 80%	$0.36	$3.14	$111.75	1.69	12.00%		$4.95	$4.95
	2024	$69.33	36 04%	$5 19	$8.12	$2 93	0 80%	$0.37	$3.30	$117.34	1.69	12.00%		$5.19	$5.19
	2025	$72 79	36.04%	$5 45	$8 53	$3 07	0 80%	$0 39	$3.47	$123 20	1.69	12 00%		$5 45	$5 45
	2026	$76 43	36.04%	$5.73	$8 95	$3.23	0 80%	$0 41	$3.64	$129.36	1 69	12.00%		$5 73	$5.73
	2027	$80.25	36 04%	$6 01	$9.40	$3.39	0 80%	$0 43	$3.82	$135.82	1.69	12.00%		$6.01	$6.01
	2028	$84.26	36 04%	$6.31	$9.87	$3.56	0 80%	$0.45	$4 01	$142 61	1.69	12.00%		$6.31	$6.31
	2029	$88 47	36.04%	$6.63	$10.36	$3.74	0 80%	$0 48	$4 21	$149 74	1 69	12.00%		$6.63	$6 63
	2030	$92.90	36 04%	$6.96	$10.88	$3.92	0 80%	$0.50	$4.42	$157.23	1.69	12.00%		$6.96	$6.96
	2031	$97.54	36.04%	$7.31	$11.43	$4.12	0 80%	$0.53	$4.64	$165 09	1.69	12.00%		$7.31	$7.31
	2032	$102.42	36.04%	$7.67	$12 00	$4 32	0 80%	$0.55	$4 88	$173 34	1.69	12 00%		$7.67	$7 67
	2033	$107 53	36 04%	$8.06	$12 60	$4.54	0 80%	$0.58	$5 12	$182.00	1.69	12.00%		$8.06	$8.06
Second	2034	$112.91	36 04%	$8.46	$13.23	$4.77	0 80%	$0.61	$5 38	$191 10	1.69	12.00%		$8 46	$8 46
Stage	2035	$118 55	36 04%	$8.88	$13 89	$5 01	0 80%	$0.64	$5.64	$200 65	1.69	12.00%		$8.88	$8.88
	2036	$124 48	36.04%	$9.33	$14 58	$5 26	0 80%	$0 67	$5.93	$210.68	1 69	12 00%		$9.33	$9 33
	2037	$130.70	36.04%	$9 79	$15.31	$5.52	0 80%	$0 70	$6.22	$221.21	1.69	12 00%		$9.79	$9 79
	2038	$137.23	36.04%	$10 28	$16.08	$5.79	0 80%	$0.74	$6 53	$232 27	1.69	12.00%		$10.28	$10 28
	2039	$144.09	36.04%	$10.80	$16.88	$6 08	0 80%	$0.78	$6 86	$243.88	1.69	12.00%		$10.80	$10.80
	2040	$151.30	36 04%	$11.34	$17.72	$6.39	0 80%	$0.81	$7.20	$256.07	1 69	12 00%		$11.34	$11 34
	2041	$158.86	36 04%	$11.90	$18.61	$6.71	0.80%	$0 86	$7.56	$268.87	1.69	12 00%	$268 87	$11 90	$280 77
												Internal Rate of Return			10 01%

Source

[A] Schedule JAR 5, P8
[B] First Stage is (Col. [4]-Col.[3]/Col.[4]). Second stage is equal to 2001 actual.
[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 and Low End of Forecast Range

	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	$21.01	36 04%	$1.75	$2.74	$0 99			$0.99	$39.94	1 90		($39.94)		($39.94)
	2002	$22 35	43.04%	$1 77	$3.11	$1.34			$1.34	$42 48	1.90	14.34%		$1.77	$1.77
First	2003	$24.05	45 87%	$1.79	$3.32	$1.52			$1.52	$45 71	1.90	14 29%		$1.79	$1.79
Stage	2004	$25.75	48.36%	$1.82	$3 52	$1.70			$1.70	$48.93	1.90	14 15%		$1.82	$1.82
	2005	$27.44	50.58%	$1.84	$3.73	$1 89			$1.89	$52.16	1.90	14 02%		$1.84	$1 84
	2006	$28 86	36.04%	$2.16	$3.38	$1.22	0 80%	$0 20	$1.42	$54.86	1.90	12 00%		$2.16	$2 16
	2007	$30.36	36 04%	$2 27	$3.55	$1.28	0 80%	$0.21	$1.49	$57 69	1.90	12 00%		$2.27	$2.27
	2008	$31.93	36.04%	$2 39	$3.74	$1.35	0 80%	$0 22	$1.57	$60.68	1.90	12.00%		$2 39	$2.39
	2009	$33.58	36.04%	$2.51	$3.93	$1.42	0 80%	$0 23	$1.65	$63.82	1.90	12.00%		$2.51	$2 51
	2010	$35.31	36.04%	$2.64	$4.13	$1.49	0 80%	$0 25	$1.74	$67.12	1 90	12.00%		$2.64	$2.64
	2011	$37.14	36 04%	$2.78	$4 35	$1 57	0 80%	$0.26	$1.83	$70.59	1 90	12.00%		$2.78	$2.78
	2012	$39.06	36 04%	$2.92	$4 57	$1.65	0 80%	$0 27	$1 92	$74 24	1.90	12 00%		$2.92	$2 92
	2013	$41.08	36.04%	$3.08	$4.81	$1.73	0 80%	$0.29	$2 02	$78 08	1.90	12 00%		$3.08	$3.08
	2014	$43.21	36.04%	$3.23	$5.06	$1.82	0 80%	$0 30	$2 13	$82 12	1.90	12.00%		$3.23	$3.23
	2015	$45.44	36.04%	$3 40	$5.32	$1.92	0 80%	$0 32	$2.24	$86.37	1.90	12 00%		$3 40	$3 40
	2016	$47.79	36 04%	$3.58	$5.59	$2.02	0 80%	$0.33	$2 35	$90 84	1.90	12 00%		$3.58	$3 58
	2017	$50.27	36.04%	$3.76	$5.88	$2.12	0 80%	$0.35	$2 47	$95.54	1.90	12 00%		$3.76	$3 76
	2018	$52.87	36.04%	$3.96	$6.19	$2 23	0.80%	$0.37	$2.60	$100.48	1.90	12.00%		$3.96	$3.96
	2019	$55.60	36.04%	$4 16	$6.51	$2 35	0 80%	$0.39	$2.73	$105.68	1 90	12.00%		$4.16	$4 16
	2020	$58 48	36.04%	$4 38	$6.84	$2.47	0 80%	$0.41	$2 88	$111 14	1.90	12.00%		$4.38	$4.38
	2021	$61.50	36.04%	$4.60	$7.20	$2.59	0 80%	$0.43	$3 03	$116.89	1.90	12 00%		$4.60	$4.60
	2022	$64.69	36.04%	$4.84	$7.57	$2.73	0 80%	$0.45	$3.18	$122.94	1 90	12.00%		$4.84	$4 84
	2023	$68.03	36.04%	$5.09	$7.96	$2 87	0 80%	$0.48	$3.35	$129.30	1.90	12.00%		$5.09	$5.09
	2024	$71 55	36.04%	$5.36	$8.37	$3.02	0 80%	$0.50	$3 52	$135.99	1.90	12.00%		$5.36	$5 36
	2025	$75.25	36.04%	$5.63	$8.81	$3.17	0 80%	$0.53	$3.70	$143.02	1.90	12.00%		$5.63	$5 63
	2026	$79.15	36.04%	$5.92	$9.26	$3.34	0 80%	$0.55	$3.89	$150.42	1 90	12.00%		$5 92	$5 92
	2027	$83.24	36.04%	$6.23	$9.74	$3 51	0 80%	$0.58	$4.09	$158.20	1.90	12.00%		$6 23	$6.23
	2028	$87.55	36 04%	$6 55	$10.25	$3 69	0 80%	$0 61	$4.31	$166.39	1.90	12.00%		$6 55	$6.55
	2029	$92.07	36.04%	$6 89	$10.78	$3.88	0 80%	$0 64	$4.53	$175.00	1.90	12.00%		$6.89	$6.89
	2030	$96.84	36.04%	$7.25	$11 33	$4.09	0 80%	$0.68	$4 76	$184.05	1.90	12 00%		$7.25	$7.25
	2031	$101.85	36.04%	$7.62	$11 92	$4 30	0 80%	$0 71	$5 01	$193.57	1.90	12 00%		$7.62	$7.62
	2032	$107.12	36.04%	$8.02	$12.54	$4 52	0 80%	$0 75	$5 27	$203.58	1 90	12 00%		$8 02	$8.02
	2033	$112.66	36 04%	$8.43	$13 19	$4 75	0 80%	$0 79	$5.54	$214 11	1 90	12.00%		$8.43	$8.43
Second	2034	$118.48	36.04%	$8.87	$13 87	$5.00	0 80%	$0.83	$5 83	$225 19	1 90	12 00%		$8.87	$8.87
Stage	2035	$124.61	36.04%	$9.33	$14.59	$5 26	0 80%	$0.87	$6 13	$236.84	1.90	12 00%		$9.33	$9 33
	2036	$131.06	36 04%	$9.81	$15 34	$5 53	0 80%	$0.92	$6.45	$249.09	1 90	12.00%		$9 81	$9 81
	2037	$137.84	36.04%	$10.32	$16.13	$5 82	0 80%	$0.96	$6.78	$261.98	1 90	12.00%		$10 32	$10.32
	2038	$144.97	36.04%	$10.85	$16.97	$6.12	0 80%	$1.01	$7.13	$275.53	1 90	12.00%		$10 85	$10.85
	2039	$152 47	36.04%	$11.41	$17.85	$6.43	0 80%	$1.07	$7.50	$289.78	1 90	12.00%		$11 41	$11.41
	2040	$160.36	36.04%	$12.00	$18.77	$6.77	0 80%	$1 12	$7 89	$304 77	1.90	12 00%		$12.00	$12.00
	2041	$168.65	36.04%	$12 63	$19 74	$7.12	0 80%	$1.18	$8 30	$320 54	1.90	12.00%	$320 54	$12.63	$333.16
												Internal Rate of Return			9.62%

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 and Return on Book Equity Forecast by Value Line

	Year	[1] Year End Book	[2] Retention Rate	[3] Dividend	[4] Earnings Per Share	[5] Retained Earnings Per Share	[6] External Financing Rate	[7] Increment to book from Ext. Fin.	[8] Total Increment 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	0.00%	[K]	[L]	[M]	[N]
	2001	$21.01	36.04%	$1.75	$2.74	$0.99			$0.99	$35.56	1.69		($35.56)		($35.56)
	2002	$22.35	43.04%	$1.77	$3.11	$1.34			$1.34	$37.83	1.69	14.34%		$1.77	$1.77
First	2003	$24.05	45.87%	$1.79	$3.32	$1.52			$1.52	$40.70	1.69	14.29%		$1.79	$1.79
Stage	2004	$25.75	48.36%	$1.82	$3.52	$1.70			$1.70	$43.58	1.69	14.15%		$1.82	$1.82
	2005	$27.44	50.58%	$1.84	$3.73	$1.89			$1.89	$46.45	1.69	14.02%		$1.84	$1.84
	2006	$29.02	36.04%	$2.53	$3.95	$1.42	0.80%	$0.16	$1.58	$49.12	1.69	14.00%		$2.53	$2.53
	2007	$30.69	36.04%	$2.67	$4.18	$1.51	0.80%	$0.16	$1.67	$51.95	1.69	14.00%		$2.67	$2.67
	2008	$32.46	36.04%	$2.83	$4.42	$1.59	0.80%	$0.17	$1.77	$54.94	1.69	14.00%		$2.83	$2.83
	2009	$34.33	36.04%	$2.99	$4.68	$1.69	0.80%	$0.18	$1.87	$58.11	1.69	14.00%		$2.99	$2.99
	2010	$36.31	36.04%	$3.16	$4.94	$1.78	0.80%	$0.19	$1.98	$61.45	1.69	14.00%		$3.16	$3.16
	2011	$38.40	36.04%	$3.34	$5.23	$1.88	0.80%	$0.21	$2.09	$64.99	1.69	14.00%		$3.34	$3.34
	2012	$40.61	36.04%	$3.54	$5.53	$1.99	0.80%	$0.22	$2.21	$68.73	1.69	14.00%		$3.54	$3.54
	2013	$42.95	36.04%	$3.74	$5.85	$2.11	0.80%	$0.23	$2.34	$72.69	1.69	14.00%		$3.74	$3.74
	2014	$45.42	36.04%	$3.96	$6.19	$2.23	0.80%	$0.24	$2.47	$76.86	1.69	14.00%		$3.96	$3.96
	2015	$48.04	36.04%	$4.18	$6.54	$2.36	0.80%	$0.26	$2.62	$81.30	1.69	14.00%		$4.18	$4.18
	2016	$50.80	36.04%	$4.43	$6.92	$2.49	0.80%	$0.27	$2.77	$85.99	1.69	14.00%		$4.43	$4.43
	2017	$53.73	36.04%	$4.68	$7.32	$2.64	0.80%	$0.29	$2.93	$90.94	1.69	14.00%		$4.68	$4.68
	2018	$56.82	36.04%	$4.95	$7.74	$2.79	0.80%	$0.30	$3.09	$96.17	1.69	14.00%		$4.95	$4.95
	2019	$60.10	36.04%	$5.23	$8.18	$2.95	0.80%	$0.32	$3.27	$101.71	1.69	14.00%		$5.23	$5.23
	2020	$63.56	36.04%	$5.54	$8.66	$3.12	0.80%	$0.34	$3.46	$107.57	1.69	14.00%		$5.54	$5.54
	2021	$67.22	36.04%	$5.85	$9.15	$3.30	0.80%	$0.36	$3.66	$113.76	1.69	14.00%		$5.85	$5.85
	2022	$71.09	36.04%	$6.19	$9.68	$3.49	0.80%	$0.38	$3.87	$120.32	1.69	14.00%		$6.19	$6.19
	2023	$75.18	36.04%	$6.55	$10.24	$3.69	0.80%	$0.40	$4.09	$127.24	1.69	14.00%		$6.55	$6.55
	2024	$79.51	36.04%	$6.93	$10.83	$3.90	0.80%	$0.43	$4.33	$134.57	1.69	14.00%		$6.93	$6.93
	2025	$84.09	36.04%	$7.32	$11.45	$4.13	0.80%	$0.45	$4.58	$142.32	1.69	14.00%		$7.32	$7.32
	2026	$88.93	36.04%	$7.75	$12.11	$4.37	0.80%	$0.48	$4.84	$150.52	1.69	14.00%		$7.75	$7.75
	2027	$94.05	36.04%	$8.19	$12.81	$4.62	0.80%	$0.50	$5.12	$159.18	1.69	14.00%		$8.19	$8.19
	2028	$99.47	36.04%	$8.66	$13.55	$4.88	0.80%	$0.53	$5.42	$168.35	1.69	14.00%		$8.66	$8.66
	2029	$105.20	36.04%	$9.16	$14.33	$5.16	0.80%	$0.56	$5.73	$178.05	1.69	14.00%		$9.16	$9.16
	2030	$111.26	36.04%	$9.69	$15.15	$5.46	0.80%	$0.60	$6.06	$188.30	1.69	14.00%		$9.69	$9.69
	2031	$117.66	36.04%	$10.25	$16.02	$5.78	0.80%	$0.63	$6.41	$199.14	1.69	14.00%		$10.25	$10.25
	2032	$124.44	36.04%	$10.84	$16.95	$6.11	0.80%	$0.67	$6.78	$210.61	1.69	14.00%		$10.84	$10.84
	2033	$131.60	36.04%	$11.46	$17.92	$6.46	0.80%	$0.71	$7.17	$222.74	1.69	14.00%		$11.46	$11.46
Second	2034	$139.18	36.04%	$12.12	$18.95	$6.83	0.80%	$0.75	$7.58	$235.56	1.69	14.00%		$12.12	$12.12
Stage	2035	$147.20	36.04%	$12.82	$20.05	$7.23	0.80%	$0.79	$8.01	$249.13	1.69	14.00%		$12.82	$12.82
	2036	$155.67	36.04%	$13.56	$21.20	$7.64	0.80%	$0.83	$8.48	$263.47	1.69	14.00%		$13.56	$13.56
	2037	$164.64	36.04%	$14.34	$22.42	$8.08	0.80%	$0.88	$8.96	$278.65	1.69	14.00%		$14.34	$14.34
	2038	$174.12	36.04%	$15.17	$23.71	$8.55	0.80%	$0.93	$9.48	$294.69	1.69	14.00%		$15.17	$15.17
	2039	$184.14	36.04%	$16.04	$25.08	$9.04	0.80%	$0.99	$10.03	$311.66	1.69	14.00%		$16.04	$16.04
	2040	$194.75	36.04%	$16.96	$26.52	$9.56	0.80%	$1.04	$10.60	$329.61	1.69	14.00%		$16.96	$16.96
	2041	$205.96	36.04%	$17.94	$28.05	$10.11	0.80%	$1.10	$11.21	$348.59	1.69	14.00%	$348.59	$17.94	$366.53
												Internal Rate of Return			11.27%

Source

[A] Schedule JAR 5, P8
[B] First Stage is (Col. [4]-Col.[3])/Col.[4]). Second stage is equal to 2001 actual
[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 and Return on Book Equity Forecast by Value Line

	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]	[H] $0.00	[I] M/B Chan	[J] 0.00%	[K]	[L]	[M]	[N]
	2001	$21.01		$1.75						$39.94	1 90		($39.94)		($39.94)
	2002	$22 35	43.04%	$1.77	$3.11	$1 34			$1 34	$42.48	1 90	14.34%		$1.77	$1 77
First	2003	$24 05	45 87%	$1.79	$3.32	$1 52			$1 52	$45.71	1 90	14.29%		$1.79	$1.79
Stage	2004	$25.75	48.36%	$1 82	$3.52	$1.70			$1.70	$48 93	1.90	14.15%		$1.82	$1.82
	2005	$27 44	50 58%	$1.84	$3.73	$1 89			$1.89	$52 16	1 90	14.02%		$1.84	$1.84
	2006	$29.07	36 04%	$2.53	$3.96	$1.43	0 80%	$0.20	$1.63	$55 25	1.90	14.00%		$2.53	$2.53
	2007	$30.80	36.04%	$2.68	$4.19	$1.51	0 80%	$0.21	$1.73	$58.53	1.90	14.00%		$2 68	$2.68
	2008	$32 62	36.04%	$2.84	$4.44	$1.60	0 80%	$0.23	$1.83	$62.01	1.90	14.00%		$2.84	$2.84
	2009	$34.56	36.04%	$3.01	$4.70	$1.70	0 80%	$0.24	$1.94	$65.69	1.90	14 00%		$3 01	$3.01
	2010	$36.61	36.04%	$3.19	$4 98	$1.80	0 80%	$0.26	$2.05	$69.58	1 90	14.00%		$3.19	$3 19
	2011	$38 78	36.04%	$3.38	$5.28	$1.90	0 80%	$0.27	$2.17	$73.71	1.90	14.00%		$3.38	$3 38
	2012	$41.09	36 04%	$3.58	$5.59	$2.02	0 80%	$0.29	$2 30	$78.09	1.90	14.00%		$3 58	$3 58
	2013	$43.52	36 04%	$3 79	$5.92	$2.13	0 80%	$0.30	$2 44	$82.72	1.90	14.00%		$3 79	$3 79
	2014	$46.11	36 04%	$4 01	$6.27	$2.26	0 80%	$0.32	$2.58	$87.63	1.90	14 00%		$4.01	$4.01
	2015	$48.84	36.04%	$4.25	$6 65	$2 40	0 80%	$0 34	$2.74	$92.83	1 90	14.00%		$4.25	$4 25
	2016	$51.74	36.04%	$4.50	$7.04	$2 54	0 80%	$0.36	$2.90	$98.34	1.90	14.00%		$4.50	$4 50
	2017	$54.81	36.04%	$4.77	$7.46	$2 69	0 80%	$0 38	$3 07	$104.18	1.90	14.00%		$4 77	$4 77
	2018	$58 07	36.04%	$5 05	$7.90	$2.85	0 80%	$0.40	$3 25	$110 36	1.90	14.00%		$5.05	$5 05
	2019	$61.51	36.04%	$5.35	$8.37	$3.02	0 80%	$0 43	$3.45	$116 91	1 90	14.00%		$5.35	$5.35
	2020	$65 16	36.04%	$5.67	$8.87	$3.20	0 80%	$0 45	$3 65	$123 85	1 90	14.00%		$5.67	$5.67
	2021	$69 03	36.04%	$6 01	$9.39	$3.39	0 80%	$0 48	$3 87	$131.20	1 90	14.00%		$6 01	$6 01
	2022	$73.13	36.04%	$6 36	$9.95	$3.59	0 80%	$0.51	$4.10	$138.98	1.90	14.00%		$6 36	$6 36
	2023	$77.46	36.04%	$6.74	$10 54	$3 80	0 80%	$0.54	$4.34	$147.23	1 90	14.00%		$6.74	$6.74
	2024	$82 06	36.04%	$7.14	$11.17	$4 02	0 80%	$0 57	$4.60	$155 97	1 90	14.00%		$7.14	$7.14
	2025	$86.93	36.04%	$7.57	$11.83	$4.26	0 80%	$0.61	$4.87	$165.22	1.90	14.00%		$7.57	$7.57
	2026	$92.09	36.04%	$8 01	$12 53	$4.52	0 80%	$0.64	$5.16	$175.03	1.90	14.00%		$8 01	$8.01
	2027	$97.56	36.04%	$8 49	$13.28	$4 78	0 80%	$0 68	$5 47	$185 41	1 90	14 00%		$8 49	$8 49
	2028	$103 35	36 04%	$8.99	$14.06	$5.07	0 80%	$0.72	$5 79	$196.42	1 90	14.00%		$8 99	$8 99
	2029	$109 48	36.04%	$9.53	$14.90	$5.37	0 80%	$0.76	$6.13	$208.07	1 90	14.00%		$9.53	$9.53
	2030	$115.98	36.04%	$10 09	$15.78	$5.69	0 80%	$0.81	$6.50	$220.42	1.90	14.00%		$10 09	$10.09
	2031	$122.86	36.04%	$10.69	$16 72	$6 03	0 80%	$0.86	$6 88	$233.50	1.90	14.00%		$10.69	$10.69
	2032	$130.15	36.04%	$11 33	$17.71	$6 38	0 80%	$0 91	$7 29	$247 36	1.90	14.00%		$11.33	$11.33
	2033	$137 87	36.04%	$12 00	$18 76	$6 76	0 80%	$0 96	$7.72	$262.04	1.90	14.00%		$12 00	$12.00
Second	2034	$146 05	36.04%	$12.71	$19 87	$7.16	0 80%	$1.02	$8.18	$277.59	1 90	14.00%		$12 71	$12 71
Stage	2035	$154.72	36 04%	$13 47	$21.05	$7.59	0 80%	$1.08	$8 67	$294.06	1.90	14.00%		$13 47	$13 47
	2036	$163.90	36.04%	$14.26	$22.30	$8.04	0 80%	$1.14	$9.18	$311.51	1.90	14 00%		$14 26	$14.26
	2037	$173.63	36.04%	$15 11	$23 63	$8 52	0 80%	$1.21	$9.73	$330 00	1 90	14 00%		$15.11	$15.11
	2038	$183 93	36.04%	$16 01	$25.03	$9 02	0 80%	$1 28	$10 30	$349 58	1.90	14.00%		$16.01	$16.01
	2039	$194.85	36 04%	$16 96	$26.51	$9.56	0 80%	$1.36	$10 92	$370.33	1.90	14.00%		$16.96	$16.96
	2040	$206 41	36 04%	$17 96	$28.09	$10.12	0 80%	$1.44	$11 56	$392.31	1.90	14.00%		$17 96	$17 96
	2041	$218 66	36 04%	$19.03	$29.76	$10 72	0 80%	$1.52	$12.25	$415.59	1.90	14 00%	$415.59	$19 03	$434 62
												Internal Rate of Return			10 83%

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
Allete	$1.90	$2 15	$2.43	$2.72	$3.00
Ameren	$3 35	$3.45	$3.55	$3.65	$3.75
American Elec PWR	$3.70	$3.85	$4.15	$4.45	$4.75
Cinergy	$2.75	$2 90	$2.97	$3.03	$3 10
Cleco Corporation	$1.45	$1.65	$1.77	$1.88	$2.00
CMS Energy Corp.	$2.25	$2.75	$3.08	$3.42	$3.75
Dominion Res.	$3 65	$4.90	$5.35	$5.80	$6.25
DPL INC.	$1.75	$1.95	$2.13	$2.32	$2 50
DQE, INC.	$1.00	$1.65	$1.77	$1.88	$2.00
DTE Energy CO	$2.35	$4.20	$4 63	$5.07	$5.50
Duke Energy	$2.60	$3.00	$3 33	$3 67	$4.00
FPL Group, Inc	$4.60	$4.75	$4.92	$5.08	$5 25
Hawaiian Electric	$3.20	$3 40	$3.52	$3 63	$3.75
IDACORP, Inc.	$3 00	$3.05	$3.10	$3.15	$3.20
Great Plains En'gy	$1 60	$1.95	$2.05	$2.15	$2.25
MDU Resources	$2.35	$2.60	$2 90	$3 20	$3 50
Nisource Inc.	$1.90	$2.60	$2.90	$3.20	$3 50
NSTAR	$3.50	$3 75	$3.92	$4.08	$4.25
Pinnacle West	$3.60	$3.80	$3 97	$4.13	$4.30
Progress Energy	$3.40	$4.05	$4.30	$4.55	$4 80
P S Enterprise GP.	$3.70	$4.05	$4.30	$4 55	$4 80
RGS Energy Group	$2.25	$2.55	$2.62	$2.68	$2.75
Southern Co	$1.60	$1.75	$1.85	$1.95	$2.05
Teco Energy, Inc.	$2 20	$2.30	$2 37	$2.43	$2.50
TXU Corp.	$3.70	$4 00	$4.15	$4.30	$4.45
UIL Holdings	$4.10	$4 20	$4.33	$4.47	$4 60
Vectren Cor AVERAGE	$1.50	$1.95	$2.10	$2.25	$2 40
XCEL Energy	$2 30	$2.45	$2 72	$2.98	$3 25
	$2.74	$3.11	$3 32	$3.52	$3.73

Source: Most Current Value Line at Time of Prep: 2001 and 2002
The value for 2005 is simply the number from value line's 2004-2006 range.
Values for 2003 and 2004 were interpalated from the 2002 and 2005 values

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
Allete	$13 60	$14.75	$16.33	$17.92	$19 50
Ameren	$24.10	$25.00	$26.08	$27.17	$28.25
American Elec PWR.	$26.20	$27.70	$29 88	$32.07	$34.25
Cinergy	$18 50	$19 65	$20.83	$22 02	$23.20
Cleco Corporation	$10.60	$11 35	$12.32	$13.28	$14.25
CMS Energy Corp.	$21.05	$22 40	$25.02	$27.63	$30.25
Dominion Res	$29.85	$32.60	$36 32	$40.03	$43.75
DPL INC	$6 80	$7.60	$8 93	$10.27	$11.60
DQE, INC.	$11 75	$11.65	$12.38	$13 12	$13.85
DTE Energy CO.	$31 45	$33 55	$36.28	$39.02	$41.75
Duke Energy	$16.10	$18 20	$21.13	$24.07	$27.00
FPL Group, Inc.	$31 20	$31.80	$32.37	$32.93	$33 50
Hawaiian Electric	$26 40	$27.40	$28.60	$29.80	$31.00
IDACORP, Inc	$23 00	$24.20	$25.48	$26 77	$28.05
Great Plains En'gy	$15.05	$15.35	$15.90	$16 45	$17.00
MDU Resources	$16.00	$18.35	$21.23	$24.12	$27.00
Nisource Inc.	$17.15	$18 40	$20 10	$21.80	$23.50
NSTAR	$24.55	$26.15	$27 35	$28 55	$29.75
Pinnacle West	$30.20	$32.35	$34.65	$36.95	$39.25
Progress Energy	$28.35	$30 20	$32 43	$34.67	$36.90
P S Enterprise GP.	$20.75	$22.65	$25.02	$27.38	$29.75
RGS Energy Group	$22 60	$23.40	$24.27	$25.13	$26.00
Southern Co	$11.20	$11.75	$12 47	$13.18	$13.90
Teco Energy, Inc.	$13.25	$13.90	$14.60	$15.30	$16.00
TXU Corp	$32.45	$34.50	$36.22	$37.93	$39.65
UIL Holdings	$34.45	$35.75	$37.28	$38.82	$40.35
Vectren Corp	$13.35	$14.10	$15.18	$16.27	$17 35
XCEL Energy	$17.30	$18.40	$19.85	$21.30	$22 75
AVERAGE	$21.01	$22.35	$24.05	$25.75	$27.44

Source Most Current Value Line at Time of Prep 2001 and 2002.
The value for 2005 is simply the number from value line's 2004-2006 range
Values for 2003 and 2004 were interpalated from the 2002 and 2005 values

COMPARATIVE E.ECTRIC COMPANIES **Schecule JAR 6**
Value Line's Projection of Dividends Per Share Page 1

AMOUNT:	2000	2001	2002 Value Line Estimate	2003	2004	2005	Compound Annual Growth from 2000 to 2005
Allegheny Energy	$1.72	$1 72	$1 76	$1 80	$1 84	$1 88	1 79%
Allete	$1 07	$1 07	$1 07	$1.07	$1 07	$1 07	0 00%
Ameren	$2 54	$2 54	$2 54	$2 57	$2.59	$2 62	0 62%
Amencan Elec PWR	$2 40	$2 40	$2 40	$2 40	$2.40	$2 40	0 00%
Cinergy	$1 80	$1.80	$1 80	$1.83	$1.85	$1 88	0 87%
Cleco Corporation	$0.85	$0 87	$0 90	$0 92	$0 94	$0 96	2 46%
CMS Energy Corp	$1 46	$1 46	$1 46	$1 46	$1 46	$1 46	0 00%
Dominion Res.	$2 58	$2 58	$2.58	$2 58	$2 58	$2 58	0 00%
DPL INC	$0 94	$0 94	$0 94	$0.96	$0.98	$1 00	1.25%
DQE, INC	$1 62	$1 68	$1 68	$1.51	$1 33	$1 16	-6.46%
DTE Energy CO	$2 06	$2 06	$2 06	$2 06	$2 06	$2 06	0 00%
Duke Energy	$1 10	$1.10	$1.10	$1 10	$1.10	$1 10	0 00%
FPL Group, Inc.	$2 16	$2.24	$2.32	$2 40	$2 47	$2 55	3.38%
Hawaiian Electnc	$2 48	$2 48	$2 48	$2 49	$2 49	$2 50	0 16%
IDACORP, Inc.	$1 86	$1.86	$1 86	$1.86	$1 86	$1 86	0 00%
Great Plains En'gy	$1 66	$1 66	$1 66	$1 66	$1 66	$1 66	0 00%
MDU Resources	$0 86	$0 90	$0.94	$0 98	$1.02	$1 06	4 27%
Nisource Inc	$0 81	$1.16	$1 24	$1 36	$1 48	$1 60	14 58%
NSTAR	$2 02	$2 08	$2 14	$2 20	$2 26	$2 32	2 81%
Pinnacle West	$1 43	$1 53	$1 63	$1.73	$1 83	$1 93	6 18%
Progress Energy	$2 08	$2 14	$2 20	$2 26	$2 32	$2 38	2 73%
P S Enterprise GP	$2 16	$2 16	$2 16	$2 19	$2 21	$2 24	0 73%
RGS Energy Group	$1 80	$1.80	$1 80	$1 80	$1 80	$1 80	0 00%
Southern Co	$1 34	$1.34	$1 37	$1 42	$1 47	$1 52	2 55%
Teco Energy, Inc	$1 33	$1 37	$1 41	$1.47	$1 54	$1 60	3 77%
TXU Corp.	$2 40	$2.40	$2 40	$2 41	$2 43	$2 44	0 33%
UIL Holdings	$2 88	$2 88	$2 88	$2.88	$2 88	$2 88	0 00%
Vectren Corp	$0 98	$1 03	$1 07	$1.11	$1.15	$1 19	3 96%
XCEL Energy	$1 48	$1 50	$1 50	$1 58	$1 67	$1 75	3 41%
Average	$1 72	$1 75	$1 77	$1.79	$1 82	$1 84	0 29%
Percent Change from Prior Yr		1 76%	1 18%	1 36%	1 34%	1 33%	

Source Most Current Value Line at Time of Prep 2001 and 2002
The value for 2005 is simply the number from value line's 2004-2006 range
Values for 2003 and 2004 were interpalated from the 2002 and 2005 values

PERCENT CHANGE FROM PRIOR YEAR:	2001	2002	2003	2004	2005
Allegheny Energy	0 00%	2 33%	2 27%	2 22%	2 17%
Allete	0 00%	0 00%	0 00%	0.00%	0 00%
Ameren	0 00%	0 00%	1 05%	1.04%	1 03%
Amencan Elec. PWR.	0.00%	0.00%	0.00%	0 00%	0 00%
Cinergy	0 00%	0 00%	1 48%	1 46%	1 44%
Cleco Corporation	2 35%	3 45%	2 22%	2 17%	2 13%
CMS Energy Corp	0 00%	0 00%	0 00%	0.00%	0 00%
Dominion Res	0 00%	0 00%	0 00%	0 00%	0.00%
DPL INC	0 00%	0 00%	2.13%	2 08%	2.04%
DQE, INC	3 70%	0 00%	-10 32%	-11 50%	-13 00%
DTE Energy CO.	0 00%	0 00%	0.00%	0.00%	0 00%
Duke Energy	0 00%	0 00%	0 00%	0.00%	0 00%
FPL Group, Inc	3 70%	3 57%	3 30%	3 20%	3.10%
Hawaiian Electnc	0 00%	0 00%	0.27%	0.27%	0.27%
IDACORP, Inc	0.00%	0 00%	0 00%	0 00%	0.00%
Great Plains En'gy	0 00%	0 00%	0.00%	0 00%	0 00%
MDU Resources	4.65%	4 44%	4 26%	4 08%	3 92%
Nisource Inc.	43 21%	6 90%	9.68%	8 82%	8 11%
NSTAR	2 97%	2 88%	2 80%	2 73%	2 65%
Pinnacle West	6 99%	6 54%	6 13%	5.78%	5 46%
Progress Energy	2.88%	2 80%	2 73%	2.65%	2 59%
P S Enterprise GP	0.00%	0 00%	1 23%	1.22%	1.20%
RGS Energy Group	0.00%	0 00%	0 00%	0.00%	0 00%
Southern Co	0 00%	2 24%	3 65%	3 52%	3 40%
Teco Energy, Inc	3 01%	2 92%	4.49%	4 30%	4 12%
TXU Corp.	0 00%	0 00%	0 56%	0.55%	0 55%
UIL Holdings	0 00%	0.00%	0.00%	0.00%	0 00%
AVERAGE	2.72%	1.41%	1 41%	1.28%	1 16%

Source. Value Line

COMPARATIVE GAS COMPANIES SELECTED BY COMPANY
Value Line's Projection of Dividends Per Share

Schecule JAR 6
Page 2

AMOUNT:	2000	2001	2002 Value Line Estimate	2003	2004	2005	Compound Annual Growth from 2000 to 2005
AGL Resources	$1.08	$1.08	$1.08	$1 10	$1.13	$1.15	1.26%
Atmos	$1.14	$1.16	$1.18	$1.24	$1.29	$1.35	3 44%
Energen	$0.67	$0.69	$0.71	$0.74	$0.77	$0.80	3.61%
KeySpan Corp.	$1.78	$1.78	$1.78	$1.82	$1.86	$1 90	1.31%
Laclede Gas	$1.34	$1.35	$1.36	$1.39	$1 42	$1.45	1.59%
New Jersey Resources	$1.72	$1.76	$1.80	$1.84	$1 88	$1.92	2.22%
Nicor	$1 66	$1.74	$1.80	$1.88	$1.96	$2 04	4.21%
N W. Natural Gas	$1.24	$1.25	$1.26	$1.27	$1.29	$1.30	0 95%
NUI Corp	$0.98	$0.98	$0.98	$1.00	$1.03	$1.05	1.39%
Peoples Energy	$2.00	$2.04	$2.08	$2.11	$2.13	$2.16	1.55%
Piedmont Natural Gas	$1.44	$1.52	$1.60	$1.67	$1.75	$1.82	4.80%
SEMCO ENERGY	$0.84	$0.84	$0.88	$0.92	$0.96	$1.00	3 55%
South Jersey INDS	$1.46	$1.48	$1.52	$1.55	$1.57	$1.60	1.85%
WGL Holdings	$1.24	$1.26	$1.28	$1 30	$1.33	$1 35	1.71%
Average	$1.33	$1.35	$1.38	$1.42	$1 45	$1.49	2 39%
Percent Change from Prior Yr		1.83%	2 01%	2.73%	2 66%	2.59%	

PERCENT CHANGE FROM PRIOR YEAR:	2001	2002	2003	2004	2005
AGL Resources	0.00%	0.00%	2.16%	2.11%	2 07%
Atmos	1.75%	1.72%	4.80%	4.58%	4 38%
Energen	2 99%	2 90%	4.23%	4 05%	3 90%
KeySpan Corp.	0 00%	0.00%	2.25%	2.20%	2 15%
Laclede Gas	0.75%	0 74%	2.21%	2.16%	2 11%
New Jersey Resources	2.33%	2.27%	2.22%	2.17%	2 13%
Nicor	4 82%	3 45%	4 44%	4.26%	4.08%
N.W. Natural Gas	0.81%	0.80%	1 06%	1.05%	1 04%
NUI Corp.	0.00%	0 00%	2.38%	2.33%	2.27%
Peoples Energy	2.00%	1.96%	1.28%	1.27%	1.25%
Piedmont Natural Gas	5.56%	5 26%	4.58%	4.38%	4 20%
SEMCO ENERGY	0.00%	4.76%	4.55%	4.35%	4.17%
South Jersey INDS	1.37%	2 70%	1.75%	1.72%	1.69%
WGL Holdings	1.61%	1.59%	1.82%	1 79%	1.76%
AVERAGE	1.71%	2 01%	2.84%	2 74%	2.66%

Source. Value Line

Schedule JAR 7

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

	1994	1995	1996	1997	1998	1999	2000
COMPARATIVE ELECTRIC COMPANIES							
	1994	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**
Allegheny Energy	45 1%	46 6%	45.8%	48.8%	46.4%	42.1%	39.8%
Allete	46.4%	45.9%	43.3%	45.1%	50.2%	49.6%	46.7%
Ameren	52.6%	53.9%	53.9%	52.4%	54.8%	53 5%	51.8%
American Elec PWR	43.4%	43.7%	45.7%	46 9%	41.0%	43 5%	44 4%
Cinergy	43.1%	46.6%	48.6%	52 2%	48.5%	46.3%	48 2%
Cleco Corporation	47.5%	47.1%	49 7%	49 2%	51 9%	41.0%	39.7%
CMS Energy Corp.	25 9%	30.4%	33.4%	33.2%	29.0%	23.0%	22.9%
Dominion Res.	45.3%	46.6%	47.0%	37.9%	46.4%	37.8%	38.9%
DPL INC.	50 3%	51 3%	53 6%	54.6%	56.0%	51.6%	27.7%
DQE, INC	45.7%	46.9%	45 6%	47.7%	47.1%	41.2%	33.0%
DTE Energy CO.	43 4%	44.9%	46.0%	46.7%	46.1%	49.1%	49 7%
Duke Energy	51 0%	52 1%	53.7%	50.6%	52.1%	46 5%	44.2%
FPL Group, Inc	47.7%	54.2%	56.9%	60.4%	66.6%	59.2%	57.1%
Hawaiian Electric	45 7%	46 2%	46.3%	44.0%	43.1%	41.4%	39.9%
IDACORP, Inc.	44.9%	45 9%	45.1%	46.8%	44.2%	44 8%	45.9%
Great Plains En'gy	49 6%	49.2%	46 8%	42.8%	47.4%	49 7%	42.8%
MDU Resources	58.2%	57.0%	54.1%	55.0%	56.2%	53 6%	54 2%
Nisource Inc.	44.8%	45 3%	46 4%	41.1%	38 8%	35.5%	35 2%
NSTAR	40 4%	41 8%	44.5%	46.5%	50 1%	47.2%	39 4%
Pinnacle West	38 3%	40 4%	43.2%	45.6%	50 2%	50.0%	54.9%
Progress Energy	49.2%	48 3%	50.2%	53 2%	52.4%	52.5%	47.6%
P.S Enterprise GP	47.3%	47.9%	49.8%	48.2%	45 8%	40.9%	38 1%
RGS Energy Group	46.5%	47.5%	50.9%	54.7%	48.5%	46.5%	46 1%
Southern Co.	47.6%	47.4%	49.7%	43.5%	42.9%	37.8%	50 6%
Teco Energy, Inc.	50.1%	52.6%	55.4%	57.2%	54.1%	54 0%	52.3%
TXU Corp	41 5%	35.7%	38.2%	40.7%	33.3%	31.8%	31.4%
UIL Holdings	35 7%	32.7%	35.1%	38.0%	37.7%	44.6%	47.8%
Vectren Corp.						58 4%	53 0%
XCEL Energy	52 7%	53 2%	53.8%	51.0%	53.5%	40.5%	40 5%
AVERAGE	45.71%	46 48%	47.60%	47 64%	47.65%	45.30%	43 58%

Source Most Current Value Line at time of Prep

Schedule JAR 8

COMPARATIVE COMPANIES
EXTERNAL FINANCING RATE
(Millions of Shares)

	Common Stock Outstanding 2000	2004-06	Compound Annual Growth
ELECTRIC COMPANIES SELETED BY JVW			
Allegheny Energy	110.44	127.00	2.83%
Allete	74.70	84.50	2.50%
Ameren	137.22	137.20	0.00%
Amercan Elec. PWR.	322.02	325.00	0.18%
Cinergy	155.97	160.00	0.13%
Cleco Corporation	44.99	45.00	0.00%
CMS Energy Corp.	121.20	140.00	2.93%
Dominion Res.	245.80	260.00	1.13%
DPL INC.	127.77	125.00	-0.44%
DQE, INC.	55.00	54.00	-0.69%
DTE Energy CO.	142.65	155.00	2.95%
Duke Energy	739.00	810.00	2.05%
FPL Group, Inc	175.77	170.00	-0.67%
Hawaiian Electnc	32.99	34.50	0.90%
IDACORP, Inc.	37.61	37.60	-0.01%
Great Plains En'gy	61.91	61.91	0.00%
MDU Resources	65.03	76.00	3.17%
Nisource Inc.	209.55	220.00	1.37%
NSTAR	53.03	48.00	-1.57%
Pinnacle West	84.03	85.20	0.09%
Progress Energy	206.90	217.00	0.96%
P.S Enterprise GP	207.97	208.00	0.00%
RGS Energy Group	34.55	32.50	-1.23%
Southern Co	682.00	730.00	1.37%
Teco Energy, Inc	126.30	130.00	0.58%
TXU Corp	255.11	272.40	1.08%
UIL Holdings	14.08	14.40	0.45%
Vectren Corp	61.42	67.70	1.97%
XCEL Energy	339.79	358.60	1.05%
	169.95	179.48	
		Average	0.80%
		Median	0.58%
		Round to	0.80%
GAS COMPANIES			
AGL Resources	54.00	57.00	1.09%
Atmos	31.95	50.00	9.37%
Energen	30.11	35.00	3.06%
KeySpan Corp	136.35	140.00	0.53%
Laclede Gas	16.55	20.00	1.16%
New Jersey Resources	17.59	18.00	0.46%
Nicor	45.49	44.00	-0.66%
N W Natural Gas	25.23	25.00	-0.18%
NUI Corp.	12.98	14.00	1.52%
Peoples Energy	35.30	32.00	-1.94%
Piedmont Natural Gas	31.91	33.00	0.67%
SEMCO ENERGY	15.06	16.00	1.02%
South Jersey INDS.	11.50	13.50	3.26%
WGL Holdings	46.47	48.00	1.07%

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	5.26% [A]		
2	Interest rate on inflation indexed 30 year treasury bonds	Apr-29	3.42% [A]		Average of 2029 & 2031
3	Difference		1.85%		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		1.51% [A]		Average of three Feb Notes
9	Return over 90 day treasury bills	5.09%		5.69%	Line 5 minus line 8
10	Beta of Electric Companies		0.51		Schedule JAR 3, P. 3
11	Risk adjusted equity premium	2.62%		2.92%	Line 9 times Line 10
12	Reduction in equity premium applicable to utility companies	2.47%		2.77%	Line 9 minus line 11
RESULT					
13	Risk premium applicable to electric companies	6.13%		6.43%	Line 7 minus line 12
	Mid-point		6.28%		

Sources:

[A] New York Times:U.S. Treasuries, retrieved from paper 12/1/01

[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 51 [A]
Based on Long-term Treasury Bonds			
Interest rate on 20 year treasury bonds	5 00% [B]		5 00%
Applicable Risk Premium	4 00% [C]	-1.94% [D]	2 06%
	9.00%		**7.05%**
Based on Corporate Bonds			
Interest on corporate bonds	6 32% [D]		6 32%
Applicable Risk Premium	3 51% [C]	-1.71% [D]	1 80%
	9.83%		**8.12%**
Based on Intermediate Term U S Treasury Bonds			
Intereset on 10 year U S Treasury Bonds	4 74% [B]		4 74%
Applicable Risk Premium	3 90% [C]	-1 90% [D]	2 00%
	8.64%		**6.74%**
Based on U S Treasury Bills			
Interest on 90 day U S Treasury Bills	1 71% [B]		1.71%
Applicable Risk Premium	5 33% [C]	-2 59% [D]	2 74%
	7.04%		**4.45%**

SUMMARY OF INDICATED RISK PREMIUM FOR EQUITY WITH AVERAGE RISK

Lowest	7 04%	4 45%
Highest	9 83%	8 12%
Average	**8.63%**	**6.59%**

Sources

[A] Schedule JAR 3, P 3
[B] BondsOnline, 7/16/01 9 12am EDT
on 7/16/01 at 9 11am EDT
[C] Schedule JAR 10, P 2
[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 differnce from corporate bonds per above table
Intermediate Term U S Treasury Bonds	3 90% or less	Risk premium on large common stocks minus average differnce from corporate bonds per above table
U S. Treasury Bills	5 33% or less	Risk premium on large common stocks minus average differnce from corporate bonds per above table
Inflation	6 05% or less	Risk premium on large common stocks minus average differnce from corporate bonds per above table