ILLINOIS POWER COMPANY

Direct Testimony

of

Paul R. Moul, Managing Consultant
P. Moul & Associates

Concerning

Cost of Equity

Illinois Power Company
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ILLINOIS COMMERCE COMMISSION

DOCKET NO. 01-

PREPARED DIRECT TESTIMONY OF PAUL R. MOUL

JUNE 1, 2001

I. INTRODUCTION AND SUMMARY OF RECOMMENDATION

1. Q. Please state your name and address.

A. My name is Paul Ronald Moul. My business address is 251 Hopkins Road, Haddonfield, NJ 08033-3062. I am Managing Consultant of the firm P. Moul & Associates, an independent, financial and regulatory consulting firm. My educational background, business experience and qualifications are provided in IP Exhibit 4.2 that follows my direct testimony.

2. Q. What is the purpose of your testimony?

A. My testimony presents evidence, analysis, and a recommendation concerning the rate of return on common equity that the Illinois Commerce Commission ("ICC" or the "Commission") should allow Illinois Power Company ("IPC" or the "Company") an opportunity to earn on its electric delivery rate base. My analysis and recommendation is supported by the detailed financial data contained in IP Exhibit 4.11, which is a multi-page document that is divided into twelve (12) schedules. Additional evidence, in the form of appendices, follows my direct testimony, and is incorporated herein by reference. Those appendices deal

with the technical aspects of my testimony and are identified as IP Exhibits 4.3 through 4.10.

3. Q. Based upon your analysis, what is your conclusion concerning the appropriate rate of return on equity for IPC in this case?

A. My conclusion is that the Company should be afforded an opportunity to earn a rate of return on common equity of 12.5%. My recommended rate of return on common equity of 12.5% is used in conjunction with the capital structure ratios and senior capital cost rates developed by Company witness Mr. Daniel L. Mortland. The post-tax overall rate of return is 9.22% and is shown on Schedule 1. When applied to the Company's electric delivery rate base, this rate of return will compensate investors for the use of their capital and allow the Company to attract new senior capital (i.e., debt and preferred stock) based on its own financial profile.

4. Q. How is your testimony organized?

A. I have addressed the following issues and organized my testimony as follows:

I. Introduction and Summary of Recommendation

II. Electric Utility Risk Factors

III. Fundamental Risk Analysis

IV. Cost of Equity -- General Approach

V. Discounted Cash Flow Analysis

VI. Risk Premium Analysis

VII. Capital Asset Pricing Model

VIII. Credit Quality Issues and Conclusion

5. Q. How have you determined the cost of equity in this case?

A. In arriving at my recommended cost of equity, I employed capital market and financial data relied upon by investors to assess the relative risk, and hence the cost of equity, for a public utility, such as IPC. In this regard, I relied on three well-recognized market-determined measures: the Discounted Cash Flow ("DCF") model, the Risk Premium analysis, and the Capital Asset Pricing Model ("CAPM"). I have also considered, but did not use in my recommendation, the Comparable Earnings approach. I have not used the Comparable Earnings approach because it is my understanding that in recent years the Illinois Commerce Commission has not taken this approach into account in determining the cost of common equity. Those results are provided in IP Exhibit 4.10 and have been used for confirmation purposes. By considering the results of a variety of approaches, I determined that a 12.5% cost of equity for IPC is reasonable, and indeed represents the minimum required return for the Company. This is consistent with well-recognized principles for determining a fair rate of return. In this regard, the Commission should consider the principles that I have set forth in IP Exhibit 4.3. The end result of the rate of return finding by the Commission must cover the Company's interest and dividend payments, provide a reasonable level of earnings retention, produce an adequate level of internally generated funds to meet capital

requirements, be commensurate with the risk to which IPC's capital is exposed, and support reasonable credit quality.

6. Q. What market evidence have you considered in measuring the cost of equity in this case?

A. The models that I used to measure the cost of equity for the Company were applied with market data developed from two proxy groups. The first proxy group consists of eight publicly traded companies whose electric utility susidiaries are members of the Alliance RTO. The parent holding companies of the Alliance RTO members are: Ameren, American Electric Power, CMS Energy, DPL, Inc., DTE Energy, Dominion Resources, Exelon, and FirstEnergy. I will refer to these companies as the "Alliance RTO Group" throughout my testimony. I have not separately measured the cost of equity for component companies of the Alliance RTO Group, because the determination of the cost of equity for an individual company has become increasingly problematic. I have also not analyzed the market data for Dynegy because it is not usually considered an electric company. Rather, Dynegy is a marketer of natural gas liquids, electricity, and crude oil and has an SIC of 1311 which places it in the crude petroleum and natural gas classification of companies. By employing group average data for the Alliance RTO Group, rather than individual company analysis, I have minimized the affect of any background "noise" in the market data for an individual company.

The second proxy group is a group of natural gas distribution companies. These companies are listed on page 2 of Schedule 4, and I will refer to them as the "Gas Distribution Group" throughout my testimony. The Gas Distribution Group consists of the Atmos Energy Corporation, Laclede Gas Company, NICOR, Inc., Peoples Energy Corporation, and SEMCO Energy, Inc. The Commission is familiar with two of these companies and the three additional companies have operations nearby. Natural gas distribution companies constitute an appropriate proxy group in this proceeding because the risks of the gas distribution companies reflect business fundamentals similar to those which will evolve for electric companies offering transmission and distribution service. Indeed, the electric utility industry is moving toward a business model that is characteristic of the natural gas industry, which is still evolving, and includes: (i) a deregulated commodity, (ii) open access for transmission, (iii) delivery service that has been unbundled from the merchant function, (iv) customer choice, and (v) a residual obligation to provide bundled service, at least to certain customer segments.

7. Q. What time period have you used for the market data in your analysis?

A. I have used market data through March 2001 when assembling the stock prices for the proxy groups and interest rates for the other models of the cost of equity. In doing so, these inputs represented the latest monthly data that were available when my testimony was initially prepared for this case. I am aware that since March 2001, there have been further

reductions in short-term interest rates attributed to Federal Reserve policy initiatives – see IP Exhibit 4.7, pages 5-6. Indeed, the Federal Reserve Open Market Committee again reduced rates by 50 basis points on May 15, 2001, thereby bringing the fed funds rate to 4% and the discount rate to 3.5%. While short-term interest rates have fallen throughout 2001, long-term rates have not changed in the same direction. Indeed, the yield on 30-year Treasury bonds has averaged 5.67% and the yield on A-rated public utility bonds has averaged 7.94% in the second quarter of 2001 through May 11. These yields are not appreciably different, albeit they are somewhat higher, than the ones that I employed for the purpose of my pre-filed direct testimony. Therefore, I do not believe that consideration of an additional month of market data would lead to a change in my overall conclusion.

8. Q. Please summarize the basis for your recommended cost of equity in this proceeding.

A. By considering the results of a variety of approaches, I determined the cost of equity consistent with well-recognized principles for determining a fair rate of return. My cost of equity determination was derived from the results of the methods/models identified above. In general, the use of more than one method provides a superior foundation to arrive at the cost of equity. Moreover, at any point in time, individual methods may provide an incomplete measure of the cost of equity depending upon a variety of extraneous factors which may influence market sentiment. The

following table provides a summary of the indicated costs of equity using each of the three approaches.

	Alliance RTO Group	Gas Distribution Group
DCF	12.27%	11.68%
Risk Premium	13.00%	13.00%
CAPM	11.39%	12.79%

9. Q. You indicated that your recommendation represents the minimum level of required equity return for the Company. What factors cause you to reach that conclusion?

A. The cost of equity data presented above does not reflect fully the compensation that a utility is entitled to when determining a fair rate of return on common equity. For example, the cost of equity measures shown above make no provision for flotation costs associated with issuing new common stock. In addition, these cost rates do not reflect the additional compensation required for a utility when the DCF result that is related to the market value of stock is applied to the book value of a utility's common equity. Further, there is a difference in financial risk associated with the beta calculated from market values used in the CAPM when its result is applied to the utility's book common equity. Had these factors been included in the measures of the cost of equity shown above, the results would have been higher, as I will demonstrate later in my testimony.

10. Q. How have you used these data to determine cost of equity for the Company in this case?

A. I have analyzed the market-determined models of the cost of equity using a series of combinations. Those results are:

	Alliance RTO Group	Gas Distribution Group
DCF and RP	12.64%	12.34%
DCF and CAPM	11.83%	12.24%
DCF, RP and CAPM	12.22%	12.49%

From these combinations of the cost of equity and other factors, which I discuss in this testimony, I have determined that the Company's allowed rate of return on equity should be set at 12.50%.

II. ELECTRIC UTILITY RISK FACTORS

11. Q. What background information have you considered analyzing the Company's cost of equity?

A. IPC today is a combination electric and natural gas distribution utility. The Company has approximately 568,000 electric customers, and approximately 399,000 natural gas distribution customers. In its electric business segment, the Company has divested virtually all of its generation assets and today sells electricity that is generated by others.

On February 1, 2000, the parent company of IPC merged with a subsidiary of Dynegy, Inc. IPC is now an indirect wholly-owned subsidiary of Dynegy, a New York Stock Exchange listed company.

12. Q. Please identify some of the factors which make the electric utility industry different today than it was in the past.

A. Today, electric utilities are faced with meaningful changes in fundamentals, while cost of service pricing continues to dominate much of their business profile. With the passage of the National Energy Policy Act ("EPACT") and the issuance of Order Nos. 888 and 889 and Order No. 2000, sweeping changes are in the process of fundamentally altering the structure of the electric utility business. Further, the risk of self-generation and/or the risk of bypass will have an increasing influence on the business of electric utilities. With technological advances in microturbines and potential commercialization of fuel cells, stranded cost issues could arise in the transmission and distribution of electricity for incumbent utilities.

With the enactment of P.A. 90-561 on December 16, 1997, competition for electric generation is being introduced in Illinois. Full retail supplier choice for commercial and industrial customers has already occurred, and residential customers will have access to alternative suppliers beginning on May 1, 2002. While generation is in the process of becoming a non-regulated competitive business, the transmission and distribution of electricity will likely continue under some form of economic regulation.

13. Q. What are some of the risks facing a transmission and distribution utility, such as IPC?

A. The obligation to serve, as a provider of last resort, represents a key risk factor for the local delivery of electricity. In a newly restructured environment, the risks facing the electric utilities are clearly different from those that existed in the past. The transition to a restructured electric industry creates significant uncertainty. Investors generally are risk-averse, and with increased uncertainty will require compensation for higher risk. The challenges facing the transmission and distribution of electricity have substantially changed the risk and return equation for investors committing capital to electric utilities. Whereas the transmission and distribution of electricity formerly represented just one function within provision of a fully bundled electric service, this function must now operate as a profit center.

In a restructured environment, competitive issues have or will develop due to: (i) convergence of energy sources, (ii) by-pass arising from self-generation or distributed-generation, and (iii) the potential development of secondary markets for transmission and distribution rights.

New regulatory risks include: (i) the overall framework of ratesetting; (ii) cost allocation and rate design issues; and (iii) the level of return that the Commission will allow for unbundled delivery service.

Operational risks arise from: (i) the loss of coordination for the planning and construction of generation, transmission and distribution facilities, (ii) the needs of local distribution utilities to maintain reliability

and be the provider of last resort, (iii) siting challenges, (iv) weather events, and (v) the need to maintain, upgrade and expand the network.

The financial structure of the transmission and distribution business is uncertain due to: (i) the structure and term of relationship with end-users, (ii) the adequacy of a capital recovery, (iii) counter-party risk, (iv) potential for financial penalties associated with operational problems, (v) loss of diversification that formerly existed within an integrated system, (vi) the utilization of the transmission and distribution network which will rest with the generators and marketers, and (vii) more narrowly defined source of revenues.

14. Q. What risks exist for electric utilities when acting as a provider of last resort?

A. An electric utility could be faced with cost issues associated with providing service to customers that do not elect alternative suppliers of electricity. For example, the recovery of the cost of electricity purchased to serve end users that remain customers of the utility could cause financial distress. In the case where base rates must provide cost recovery for electricity acquired by a utility to serve its customers, cost recovery issues could arise for a utility that no longer has its own electric generating facilities. The California energy crisis represents a case-in-point where faulty restructuring provides the utilities with non-compensatory revenues relative to their costs.

15. Q. Are there other specific risk issues facing IPC?

A. Yes. The Company's risk profile is strongly influenced by electricity sold/delivered to industrial customers. The deliveries to industrial customers represent about one-half of net disposition of energy on the Company's system. Transmission of energy for others has substantially increased on the Company's system, whereby energy wheeled through the Company's network has grown to about 40% of the gross energy account. Sales and delivery to high volume customers are usually thought to be of higher risk than sales to other classes of customers. Success in this segment of the Company's market is subject to (i) the business cycle, (ii) the price of alternative energy sources, and (iii) pressures from alternative providers. Moreover, external factors can also influence the Company's deliveries to these customers which face competitive pressure on their own operations from other facilities outside the Company's service territory.

16. Q. Have the bond rating agencies reacted to the new business risks facing the electric utilities?

A. Yes. In response to these new business fundamentals, S&P established a risk-adjusted, or matrix approach to the financial benchmarks used to assess the credit quality of all regulated public utilities, including the electric companies. On June 18, 1999, S&P modified its benchmark criteria with a focus on the relative business risk of a firm regardless of its industry-type. The new benchmarks replaced former criteria that were directed toward specific types of utilities. Now, each electric company

will be measured against a uniform set of financial benchmarks applicable to all firms that are assigned to a specific business profile.

In this regard, S&P has categorized each electric company according to an assessment of its business profile. Each business profile is intended to represent a specific level of business risk. In assigning a business profile, S&P has enumerated the key items it considers: regulation, markets, operations, competitiveness, and management. Each regulated firm is assigned to a category on a scale of 1 (strong) to 10 (weak). In essence, business profile "1" equates to the lowest business risk, while business profile "10" equates to the highest business risk. According to S&P, the general breakdown of the electric industry is:

Business Profile	Number of Electric Companies	Percent of Industry
1	none	-
2	none	-
3	11	9%
4	47	39%
5	26	21%
6	23	19%
7	11	9%
8	4	3%
9	none	-
10	none	-
	122	100%

S&P has assigned IPC to the "6" business profile category, which places it above the average "5" business profile of the industry generally. This business profile ranking indicates that IPC has above-average business risk that warrants a rate of return higher than the average for the industry.

Indeed, 69% of the electric utility industry has less business risk than IPC, while only 12% of the industry has higher business risk than IPC.

III. FUNDAMENTAL RISK ANALYSIS

17. Q. Is it necessary to conduct a fundamental risk analysis to provide a framework for a determination of a utility's cost of equity?

A. Yes. It is necessary to establish a company's relative risk position within its industry through a fundamental analysis of various quantitative and qualitative factors that bear upon investors' assessment of overall risk. The qualitative factors which bear upon the Company's risk have already been discussed in Section II. The quantitative risk analysis follows in this Section III. The items that influence investors' evaluation of risk and their required returns are described in IP Exhibit 4.4. For this purpose, I have compared IPC to the S&P Public Utilities, an industry-wide proxy consisting of various regulated businesses, to the Alliance RTO Group, and to the Gas Distribution Group.

18. Q. What are the components of the S&P Public Utilities?

A. The S&P Public Utilities is a widely recognized index which is comprised of twenty-eight electric power companies and eleven natural gas companies. These companies are identified on pages 3 and 4 of Schedule 5. I have used this group as a broad-based measure of all types of utility companies.

19. Q. What criteria did you employ to assemble your first comparison group?

A. The Alliance RTO Group that I employed in this case includes companies that are engaged in similar business lines to Illinois Power, have publicly-traded common stock, and have rated credit quality (i.e., their debt is rated by major credit rating agencies, such as Standard & Poor's Corporation and Moody's Investor Service, Inc.). In order to qualify for the Alliance RTO Group, the companies had to have publicly-traded common stock listed on the New York Stock Exchange, an SIC code of 4911 or 4931, investment grade credit ratings, be listed in Editions One or Five of The Value Line Investment Survey in the category "Electric Utility (East or Central) Industry," and not be currently the target of a merger or acquisition. The Alliance RTO Group includes Ameren Corporation, American Electric Power Company, CMS Energy Corporation, Dominion Resources, Inc., DPL, Inc., DTE Energy Company, Exelon Corporation, and FirstEnergy Corporation.

20. Q. What criteria did you employ to assemble your Gas Distribution Group?

A. The Gas Distribution Group that I employed in this case includes companies that are engaged in the distribution of natural gas, have publicly-traded common stock, and have investment-grade rated credit quality. In order to qualify for the Gas Distribution Group, the companies had to have publicly-traded common stock listed on the New York Stock Exchange, an SIC Code of 4924, an investment grade credit ratings, be listed in Edition Three of The Value Line Investment Survey in the category "Natural Gas Distribution Industry," operate in the central region

of the U.S., and not be currently the target of a merger or acquisition. The Gas Distribution Group includes Atmos Energy Corporation, Laclede Gas Company, NICOR, Inc., Peoples Energy Corporation, and SEMCO Energy, Inc. Each of these companies has an SIC of 4924 and meets all of the selection criteria listed above. The advantage of analyzing the Gas Distribution Group rests with the business risk associated with the distribution of natural gas, which has many features similar to the delivery of electricity. Moreover, these companies are geographically close to IPC.

21. Q. How do the bond ratings compare for the Company, the Alliance RTO Group, the Gas Distribution Group, and the S&P Public Utilities?

A. Presently, the Company's corporate credit rating ("CCR") is BBB+ from S&P and Baa1 from Moody's. The CCR is a designation by S&P that focuses upon the credit quality of the issuer of the debt, rather than upon the debt obligation itself. The incorporation of "ultimate recovery risk" associated with senior secured debt led to the "notching" process that now permits separate ratings on specific debt obligations of each company. The CCR of the Company is somewhat weaker than that of the Alliance RTO Group which has an average A- rating from S&P and A3 from Moody's. The Gas Distribution Group has stronger credit quality as shown by an A+ rating from S&P and A1 rating from Moody's rating. For the S&P Public Utilities, the average composite rating is A- by S&P and A2 by Moody's. Many of the financial indicators that I will subsequently discuss are considered during the rating process.

22. Q. What factors influence the bond ratings assigned by the credit rating agencies?

A. The credit rating agencies consider various qualitative and quantitative factors in assigning grades of creditworthiness. On June 18, 1999, S&P modified its benchmark criteria with a focus on the relative business risk of a firm regardless of its industry-type. These benchmarks replaced former criteria that were directed toward specific types of utilities. Now, each electric company will be measured against a uniform set of financial benchmarks applicable to all firms that are assigned to a specific business profile. S&P has indicated that no rating changes should be expected from the new financial targets because they were developed by integrating prior financial benchmarks and historical industrial medians. The financial benchmarks for a utility with a "6" business profile include:

Rating	Pre-Tax Interest Coverage	Debt Leverage	Funds from Operations Interest Coverage	Funds from Operations to Total Debt
AA	6.2-5.2x	32.5-39.5%	6.6-5.7x	47.0-39.0%
A	5.2-4.0	39.5-46.0	5.7-4.5	39.0-31.0
BBB	4.0-2.6	46.0-53.5	4.5-3.1	31.0-22.0
BB	2.6-1.6	53.5-60.5	3.1-2.2	22.0-16.0
B	1.6-0.7	60.5-69.0	2.2-1.2	16.0-8.5

23. Q. How do the financial data compare for IPC, the Alliance RTO Group, Gas Distribution Group and the S&P Public Utilities?

A. The broad categories of financial data that I will discuss are shown on Schedules 2, 3, 4, and 5. The data cover the five-year period 1995-1999

because complete year 2000 data is not available from Compustat. I will highlight the important categories of relative risk as follows:

Size. In terms of capitalization, IPC is smaller than the average size of the Alliance RTO Group and the S&P Public Utilities. The companies in the Gas Distribution Group are smaller than those in the S&P Public Utilities and the Alliance RTO Group. All other things being equal, a smaller company is riskier than a larger company because a given change in revenue and expense has a proportionately greater impact on a smaller firm. As I will demonstrate later, the size of a firm can impact its cost of equity.

Market Ratios. Market-based financial ratios, such as earnings/price ratios and dividend yields, provide a partial measure of the investor-required cost of equity. If all other factors are equal, investors will require a higher return on equity for companies that exhibit greater risk, in order to compensate for that risk. That is to say, a firm that investors perceive to have higher risks will experience a lower price per share in relation to expected earnings; a high earnings/price ratio is thus indicative of greater risk[1].

There are no market ratios available for IPC. The average earnings/price ratios were higher for the Alliance RTO Group than for the Gas Distribution Group. The average earnings/price ratios were closer for

[1] For example, two otherwise similarly situated firms each reporting $1.00 earnings per share would have different market prices at varying levels of risk (i.e., the firm with a higher level of risk will have a lower share value, while the firm with a lower risk profile will have a higher share value).

the Alliance RTO Group and the S&P Public Utilities, albeit the ratios were higher for the Alliance RTO Group. The five-year average dividend yields were highest for the Alliance RTO Group, followed by the Gas Distribution Group and the S&P Public Utilities. The five-year average market-to-book ratio was highest for the Gas Distribution Group, followed by the S&P Public Utilities and the Alliance RTO Group which had fairly similar ratios.

Common Equity Ratio. The level of financial risk is measured by the proportion of long-term debt and other senior capital that is contained in a company's capitalization. Financial risk is also analyzed by comparing common equity ratios (the complement of the ratio of debt and other senior capital). That is to say, a firm with a high common equity ratio has lower financial risk, while a firm with a low common equity ratio has higher financial risk. The five-year average common equity ratios, based on permanent capital, were 36.0% for IPC, 42.0% for the Alliance RTO Group, 53.4% for the Gas Distribution Group, and 43.0% for the S&P Public Utilities. The common equity ratio of IPC declined significantly after restructuring charges, quasi-reorganization, and issuance of transitional funding instruments. Some other electric companies have experienced extraordinary charges related to restructuring issues.

Return on Book Equity. Greater variability (i.e., uncertainty) of a firm's earned returns signifies relative levels of risk, as shown by the coefficient of variation (standard deviation ÷ mean) of the rate of return on book

common equity. The higher the coefficients of variation, the greater degree of variability. For the five-year period, the coefficients of variation were 0.176 (1.9% ÷ 10.8%) for IPC, 0.055 (0.7% ÷12.7%) for the Alliance RTO Group, 0.137 (1.6% ÷ 11.7%) for the Gas Distribution Group, and 0.076 (0.9% ÷ 11.9%) for the S&P Public Utilities. The relative earnings variability reveals the highest risk for the IPC, followed by Gas Distribution Group, then the S&P Public Utilities and finally the Alliance RTO Group.

Operating Ratios. I have also compared operating ratios (the percentage of revenues consumed by operating expense, depreciation and taxes other than income).[2] The five-year average operating ratios were 76.8% for IPC, 76.1% for the Alliance RTO Group, 89.0% for the Gas Distribution Group and 80.8% for the S&P Public Utilities. These comparisons show fairly similar operating risk for IPC and the Alliance RTO Group, with the operating risk for the S&P Public Utilities and the Gas Distribution Group being higher.

Coverage. The level of fixed charge coverage (i.e., the multiple by which available earnings cover fixed charges, such as interest expense) provides an indication of the earnings protection for creditors. Higher levels of coverage, and hence earnings protection for fixed charges, are usually associated with superior grades of creditworthiness. The five-year average

[2] The complement of the operating ratio is the operating margin which provides a measure of profitability. The higher the operating ratio, the lower the operating margin.

interest coverage (excluding AFUDC) was 2.93 times for IPC, 3.18 times for the Alliance RTO Group, 3.38 times for the Gas Distribution Group and 3.09 times for the S&P Public Utilities. This comparison shows that IPC had somewhat weaker creditor support than the S&P Public Utilities, the Alliance RTO Group, and the Gas Distribution Group where coverages were higher.

Quality of Earnings. Measures of earnings quality usually are revealed by the percentage of Allowance for Funds Used During Construction ("AFUDC") related to income available for common equity, the effective income tax rate, and other cost deferrals. These measures of earnings quality usually influence a firm's internally generated funds because poor quality of earnings would not generate high levels of cash flow. Typically, quality of earnings has not been a significant concern for IPC, the Alliance RTO Group, the Gas Distribution Group, and the S&P Public Utilities.

Internally Generated Funds. Internally generated funds ("IGF") provide an important source of new investment capital for a utility and represent a key measure of financial strength. Historically, the five-year average percentage of internally generated funds ("IGF") to capital expenditures was 140.5% for IPC, 141.6% for the Alliance RTO Group, 85.5% for the Gas Distribution Group, and 128.3% for the S&P Public Utilities. The IGF percentage for IPC is similar to the Alliance RTO Group.

Betas. The financial data that I have been discussing relate primarily to company-specific risks. Market risk for firms with publicly-traded stock is measured by beta coefficients, which attempt to identify systematic risk, i.e., the risk associated with changes in the overall market for common equities. A comparison of market risk is shown by the Value Line betas provided on page 2 of Schedule 3 -- .57 as the average for the Alliance RTO Group, page 2 of Schedule 4 -- .60 as the average for the Gas Distribution Group, and page 4 of Schedule 5 -- .62 as the average for the S&P Public Utilities. Keeping in mind that the utility industry has changed dramatically during the past five years, the systematic risk percentage is 92% (.57 ÷ .62) for the Alliance RTO Group and 97% (.60 ÷ .62) for the Gas Distribution Group as compared with the S&P Public Utilities' average beta.

24. Q. Please summarize your risk evaluation of IPC, the Alliance RTO Group, and the Gas Distribution Group.

A. In my opinion, the risk of IPC is somewhat higher than that of the Alliance RTO Group. The Company's operating ratios and IGF percentage show fairly similar risk traits for IPC as for the Alliance RTO Group. However, more variable earnings, and the higher business profile designation that I discussed in Section II, indicate that IPC has more risk. In addition, the Company's lower common equity ratio shows higher financial risk for IPC. The fixed charge coverage has been weaker for IPC than for the Alliance RTO Group. Overall, the fundamental risk factors favor a

somewhat higher required rate of return for IPC than for the Alliance RTO Group. For the Gas Distribution Group, the risk measures show lower financial risk than for IPC (i.e., higher common equity ratio for the Gas Distribution Group), yet their betas show higher systematic risk. The earnings variability is higher for the Gas Distribution Group than for the Alliance RTO Group. The Gas Distribution Group also has weaker internally generated funds to capital expenditures. On balance, however, the overall risk of the Alliance RTO Group and the Gas Distribution Group are not dissimilar.

IV. COST OF EQUITY – GENERAL APPROACH

25. Q. Please describe the process you employed to determine the cost of equity for IPC.

A. Although my fundamental financial analysis provides the required framework to establish the risk relationships among IPC, the Alliance RTO Group, the Gas Distribution Group, and the S&P Public Utilities, the cost of equity must be measured by standard financial models that I describe in IP Exhibit 4.5. Differences in risk traits, such as size, business diversification, geographical diversity, regulatory policy, financial leverage, and bond ratings must be considered when analyzing the cost of equity. It is also important to reiterate that no one method or model of the cost of equity can be applied in an isolated manner. Rather, informed judgment must be used to take into consideration the relative risk traits of the firm. It is for this reason that I have used more than one method to

measure the Company's cost of equity. As noted in IP Exhibit 4.5 and elsewhere in my direct testimony, each of the methods used to measure the cost of equity contains certain incomplete and/or overly restrictive assumptions and constraints that are not optimal. Therefore, I favor considering the results from all methods that I used. In this regard, I have applied each of the methods with data taken from the Alliance RTO Group and the Gas Distribution Group and have arrived at a cost of equity of 12.5% for IPC.

V. DISCOUNTED CASH FLOW ANALYSIS

26. Q. Please describe your use of the Discounted Cash Flow approach to determine the cost of equity.

A. The details of my use of the DCF approach and the calculations and evidence in support of my conclusions are set forth in IP Exhibit 4.6. I will summarize them here. The Discounted Cash Flow ("DCF") model seeks to explain the value of an asset as the present value of future expected cash flows discounted at the appropriate risk-adjusted rate of return. In its simplest form, the DCF return on common stocks consists of a current cash (dividend) yield and future price appreciation (growth) of the investment. The cost of equity based on a combination of these two components represents the total return that investors can expect with regard to an equity investment.

Among other limitations of the model, there is a certain element of circularity in the DCF method when applied in rate cases. This is because

investors' expectations for the future depend upon regulatory decisions. In turn, when regulators depend upon the DCF model to set the cost of equity, they rely upon investor expectations which include an assessment of how regulators will decide rate cases. Due to the circularity, the DCF model may not fully reflect the true risk of a regulated firm.

As I describe in IP Exhibit 4.6, the DCF approach has other limitations that diminish its usefulness in the ratesetting process when stock prices diverge significantly from book values. When stock prices diverge from book values by a significant margin, the DCF method will lead to a misspecified cost of equity. If regulators rely upon the results of the DCF (which are based on the market price of the stock of the companies analyzed) and apply those results to a net original cost (book value) rate base, the resulting earnings will not produce the level of required return specified by the model when market prices vary from book value. This is to say, such distortions tend to produce DCF results that understate the cost of equity to the regulated firm when using a book value rate base. As I will explain later in my testimony, in at least one respect, the DCF model can be modified to account for differences in financial leverage when market prices and book values diverge.

27. Q. Please explain the dividend yield component of a DCF analysis.

A. The DCF methodology requires the use of an expected dividend yield to establish the investor-required cost of equity. For the twelve months ended March 2001, the monthly dividend yields of the Alliance RTO

Group and the Gas Distribution Group are shown graphically on Schedule 6. The monthly dividend yields shown on Schedule 6 reflect an adjustment to the month-end prices to reflect the build up of the dividend in the price that has occurred since the last ex-dividend date (i.e., the date by which a shareholder must own the shares to be entitled to the dividend payment – usually about two to three weeks prior to the actual payment). An explanation of this adjustment is provided in IP Exhibit 4.6.

For the twelve months ending March 2001, the average dividend yield was 5.04% for the Alliance RTO Group and 5.61% for the Gas Distribution Group based upon a calculation using annualized dividend payments and adjusted month-end stock prices. The dividend yields for the more recent six- and three- month periods were 4.59% and 4.68% for the Alliance RTO Group, respectively, and 5.25% and 5.38% for the Gas Distribution Group, respectively. I have used, for the purpose of my direct testimony, a dividend yield of 4.59% for the Alliance RTO Group and 5.25% for the Gas Distribution Group which represents the six-month average yield. The use of a six-month dividend yield will reflect current capital costs while avoiding spot yields.

For the purpose of a DCF calculation, the average dividend yields must be adjusted to reflect the prospective nature of the dividend payments i.e., the higher expected dividends for the future. Recall that the DCF is an expectational model that must reflect investor anticipated cash flows. I have adjusted the six-month average dividend yields in three

different but generally accepted manners, and used the average of the three as calculated in IP Exhibit 4.6. Those adjusted dividend yields are 4.77% for the Alliance RTO Group and 5.43% for the Gas Distribution Group.

28. Q. What investor-expected growth rate is appropriate in a DCF calculation?

A. Historical performance and analysts' forecasts support my opinion of the growth expected by investors. Although some DCF devotees would advocate that mathematical precision should be followed when selecting a growth rate (i.e., precise input variables often considered within the confines of retention growth), the fact is that investors, when establishing the market prices for a firm, do not behave in the same manner assumed by the constant growth rate model using accounting values. Rather, investors consider both company-specific variables and overall market sentiment (i.e., level of inflation rates, interest rates, economic conditions, etc.) when balancing their capital gains expectations with their dividend yield requirements. I follow an approach that is not rigidly formatted because investors are not influenced solely by a single set of company-specific variables weighted in a formulaic manner. Therefore, in my opinion, all relevant growth rate indicators using a variety of techniques must be evaluated.

29. Q. What data have you considered in your growth rate analysis?

A. For the reasons discussed below, primary emphasis has been given to forecasted growth rates. The bar graph provided on pages 1 and 2 of Schedule 7 shows the historical growth rates in earnings per share,

dividends per share, book value per share, and cash flow per share for the Alliance RTO Group and Gas Distribution Group, respectively. The historical growth rates were taken from the Value Line publication which provides historical data, as well as from Zacks. As shown on pages 1 and 2 of Schedule 7, the historical earnings per share growth was in the range of 0.07% to 3.98% for the Alliance RTO Group, and 0.84% to 1.80% for the Gas Distribution Group. The historical growth rates in earnings per share contain some instances of negative values for some individual companies. Obviously, negative growth rates provide no reliable guide to gauge investor expected growth for the future. Investor expectations always encompass long-term positive growth rates and, as such, could not be represented by sustainable negative rates of change. Therefore, statistics that include negative growth rates should not be given any weight when formulating a composite investors' growth expectation for the future. The prospect of rate increases granted by regulators, the continued obligation to provide service as required by customers, and the ongoing growth of customers mandate investor expectations of positive future growth rates. Stated simply there is no reason for investors to expect that a utility will wind up its business and distribute its common equity capital to shareholders, which would be symptomatic of a long-term permanent earnings decline. Although investors have knowledge that negative growth and losses can occur, their expectations always include positive growth. Because, in the long run, investors will always expect

positive growth, negative historic values will not provide a reasonable representation of future growth expectations. Rational investors always expect positive returns, otherwise they will hold cash rather than invest with the expectation of a loss.

Pages 1 and 2 of Schedule 8 provide projected earnings per share growth rates taken from analysts' forecasts compiled by IBES, Zacks, First Call, and Market Guide and from the Value Line publication. The IBES, Zacks, First Call, and Market Guide forecasts are limited to earnings per share growth, while Value Line makes projections of other financial variables. The Value Line forecasts of dividends per share, book value per share, and cash flow per share have also been included on pages 1 and 2 of Schedule 8 for the Alliance RTO Group and the Gas Distribution Group.

As to the five-year forecast growth rates, page 1 of Schedule 8 indicates that the projected earnings per share growth rates for the Alliance RTO Group are 6.75% by IBES, 6.91% by Zacks, 7.50% by First Call, 7.54% by Market Guide, and 8.30% by Value Line. For the Gas Distribution Group, the projected earnings per share growth rates are 6.20%, 6.24%, 6.40%, 5.82% and 8.60% by these services, respectively. Dividends per share growth rates are forecast by Value Line to be lower. The Value Line projections indicate that earnings per share will grow prospectively at a more rapid rate (i.e., 8.30% in the case of the Alliance RTO Group and 8.60% in the case of the Gas Distribution Group) than the

respective dividends per share growth rates (i.e., 1.83% and 3.10% for these groups), which indicate a declining dividend payout ratio for the future. As indicated earlier, and in IP Exhibit 4.6, with the constant price-earnings multiple assumption of the DCF model, growth for these companies will occur at the higher earnings per share growth rate, thus producing the capital gains yield expected by investors.

30. Q. Does an investment horizon, such as five years, invalidate the use of the DCF model?

A. No. In fact, it illustrates that the infinite form of the model contains an unrealistic assumption. Rather than viewing the DCF in the context of an endless stream of growing dividends (e.g., a century of cash flows), the growth in the share value (i.e., capital appreciation, or capital gains yield) is most relevant to investors' total return expectations. Hence, the sale price of a stock can be viewed as a liquidating dividend which can be discounted along with the annual dividend receipts during the investment-holding period to arrive at the investor expected return. The growth in the price per share will equal the growth in earnings per share absent any change in price-earnings (P-E) multiple -- a necessary assumption of the DCF. As such, my DCF analysis, which relies principally upon five-year forecasts of earnings per share growth, conforms to the type of analysis that influences the total return expectation of investors.

31. Q. What conclusion have you drawn from these data?

A. Although ideally historical and projected earnings per share and dividends per share growth indicators would be used to provide an assessment of investor growth expectations for a firm, the circumstances of the Alliance RTO Group and the Gas Distribution Group mandate that the greatest emphasis be placed upon projected earnings per share growth. The massive restructuring of the electric and gas industries suggests that historical evidence does not represent a complete measure of growth for these companies. I will expand on this concept later in my testimony. Rather, projections of future earnings growth provide the principal focus of investor expectations. In this regard, it is worthwhile to note that Professor Myron Gordon, the foremost proponent of the DCF model in rate cases, established that the best measure of growth in the DCF model is forecasts of earnings per share growth. Hence, to follow Professor Gordon's findings, projections of earnings per share growth, such as those published by IBES, Zacks, First Call, Market Guide, and Value Line, represent a reasonable assessment of investor expectations.

While I have employed IBES as one measure of investor expected growth, there is no reason to limit the analysts' forecasts to the IBES source alone. It is appropriate to consider all forecasts of earnings growth rates that are available to investors. In this regard, I have considered the forecasts from Zacks, First Call, Market Guide and Value Line. The Zacks, First Call, and Market Guide growth rates are consensus forecasts taken from a survey of analysts that make projections of growth for these

companies. The Zacks, First Call, and Market Guide estimates are obtained from the Internet and are widely available to investors free-of-charge. First Call is probably quoted most frequently in the financial press (such as The Wall Street Journal and Barron's The Dow Jones Business and Financial Weekly) when reporting on earnings forecasts. The Value Line forecasts are also widely available to investors and can be obtained by subscription or free-of-charge at most public and collegiate libraries. For the Alliance RTO Group, the forecasts of earnings per share data as shown on page 1 of Schedule 8 support my opinion that a prospective growth rate of 7.50% represents a reasonable expectation. For the Gas Distribution Group, a 6.25% growth rate is indicated. While the DCF growth rates cannot be established solely with a mathematical formulation, they are within the array of earnings per share growth rates shown by the analysts' forecasts. As previously indicated, the restructuring and consolidation now taking place in the utility industry will provide additional opportunities (both regulated and non-regulated) as the utility industry successfully adapts to the new business environment. Changes in fundamentals that will enhance the growth prospects for the future will undoubtedly develop beyond the next five years typically considered in the analysts' forecasts. Moreover, expectations concerning merger and acquisition ("M&A") activities also impact stock prices. M&A premiums have the effect of raising prices, and therefore reducing observed dividend yields, without necessarily showing up in higher long-term growth rate

forecasts. In that case, the traditional DCF calculation would understate the required cost of equity.

32. Q. At this point, what is the sum of the dividend yield and growth rate?

A. Although this summation would not provide a complete representation of the cost of equity, the dividend yield plus growth rate would provide the following returns:

	D_1/P_0	+	g	=	k
Alliance RTO Group	4.77%	+	7.50%	=	12.27%
Gas Distribution Group	5.43%	+	6.25%	=	11.68%

33. Q. In the development of a rate of return on common equity in the ratesetting context, should another component be included in the DCF model of the cost of equity?

A. Yes. As noted previously, and as demonstrated in IP Exhibit 4.6, the divergence of stock prices from book values creates a conflict within the DCF model when the results of a market-derived cost of equity are applied to the common equity account measured at book value in the ratesetting context. This is the situation today where the market price of stock exceeds its book value for most companies. This divergence of price and book value also creates a financial risk difference, whereby the capitalization of a utility measured at its market value contains relatively less debt and more equity than the capitalization measured at its book value. It is a well-accepted fact of financial theory that a relatively higher proportion of equity in the capitalization has less financial risk than

another capital structure more heavily weighted with debt. This is the situation for the Alliance RTO Group and the Gas Distribution Group where the market value of their capitalization contains far more equity than is shown by the book capitalization. The following comparison demonstrates this situation where the market capitalization is developed by taking the "Fair Value of Financial Instruments" (Disclosures about Fair Value of Financial Instruments -- Statements of Financial Accounting Standards ("FAS") No. 107) as shown in the annual reports for these companies and the market value of the common equity using the price of stock. The comparison of capital structure ratios is:

	Capitalization at Market Value (Fair Value)		Capitalization at Book Value Carrying Amounts	
	Alliance RTO Group	Gas Distribution Group	Alliance RTO Group	Gas Distribution Group
Debt	41.95%	32.92%	57.09%	45.39%
Preferred Stock	3.80	0.12	4.63	0.18
Common Equity	54.25	66.96	38.28	54.43
Total	100.00%	100.00%	100.00%	100.00%

With regard to the capital structure ratios represented by the book value shown above, there are some variances with the ratios shown on Schedules 3 and 4. These variances arise from the use of balance sheet values in computing the capital structure ratios shown on Schedules 3 and 4 and the use of the Carrying Amounts of the Financial Instruments reported according to FAS 107 (the Carrying Amounts prescribed by FAS 107 were used in the table shown above to be comparable to the Fair Value amounts used in the calculations).

34. Q. What are the implications of the capital structure ratios measured with the market value of the securities as compared to the book value of the capitalization?

A. The capital structure ratios measured at their book values show more financial leverage, and hence higher risk, than the capitalization measured at their market values. This means that a market derived cost of equity, using models such as DCF and CAPM, reflects a level of financial risk that is different from that shown by the book capitalization. Hence, it is necessary to adjust the market-determined cost of equity upward to reflect the higher financial risk related to the book value capitalization used for ratesetting purposes. Failure to make this modification would result in a mismatch of the lower financial risk related to market value used to measure the cost of equity and the higher financial risk of the book value capital structure used in the ratesetting process. That is to say, the cost of equity for the Alliance RTO Group that is related to the 38.28% common equity ratio using book value has higher financial risk than the 54.25% common equity ratio using market values. Likewise, there is higher financial risk associated with the 54.43% common equity ratio using book value for the Gas Distribution Group than the 66.96% common equity ratio measured at its market value for the Gas Distribution Group. Because the ratesetting process utilizes the book value capitalization, an adjustment should be made to the market-determined cost of equity

upward for the higher financial risk related to the book value of the capitalization.

35. Q. How is the DCF-determined cost of equity adjusted for the financial risk associated with the book value of the capitalization?

A. In pioneering work, Nobel laureates Modigliani and Miller developed several theories about the role of leverage in a firm's capital structure. As part of that work, Modigliani and Miller established that as the borrowing of a firm increases, the expected return on stockholders' equity also increases. This principle is incorporated into my leverage adjustment which recognizes that the expected return on equity increases to reflect the increased risk associated with the higher financial leverage shown by the book value capital structure, as compared to the market value capital structure that contains lower financial risk. Modigliani and Miller proposed several approaches to quantify the equity return associated with various degrees of debt leverage in a firms capital structure. These formulas point toward an increase in the equity return associated with the higher financial risk of the book value capital structure.

36. Q. How can the Modigliani and Miller theory be applied to calculate the rate of return on book common equity using the market-derived cost of equity as a starting point?

A. It is necessary to first calculate the cost of equity for a firm without any leverage. The cost of equity for an unleveraged firm using the capital structure ratios calculated with the market values is:

ku = ke - (((ku - i) 1-t) D/E) - (ku - d) P/E

Alliance RTO Group

10.65% = 12.27% - (((10.65% - 7.89%) .65) 41.95%/54.25%) - (10.65% - 7.23%) 3.80%/54.25%

Gas Distribution Group

10.75% = 11.68% - (((10.75% - 7.89%) .65) 32.92%/66.96%) - (10.75% - 7.23%) 0.12%/66.96%

where *ku* = cost of equity for an all-equity firm, *ke* = market determined cost of equity, *i* = cost of debt[3], *d* = dividend rate on preferred stock[4], *D* = debt ratio, *P* = preferred stock ratio, and *E* = common equity ratio. The formula shown above indicates that the cost of equity for a firm with 100% equity is 10.65% using the market value of the Alliance RTO Group capitalization and 10.75% using the Gas Distribution Group's data.

Having determined the cost of equity for a firm with 100% equity, I then calculated the rate of return on common equity using the book value capital structure. This provides:

ke = ku + (((ku - i) 1-t) D/E) + (ku - d) P/E

Alliance RTO Group

13.73% = 10.65% + (((10.65% - 7.89%) .65) 57.09%/38.28%) + (10.65% - 7.23%) 4.63%/38.28%

Gas Distribution Group

12.31% = 10.75% + (((10.75% - 7.89%) .65) 45.39%/54.43%) + (10.75% - 7.23%) 0.18%/54.43%

Hence the Modigliani and Miller theory shows that the cost of equity for the Alliance RTO Group increases by 1.46% (13.73% - 12.27%) when the common equity ratio declines from 54.25% using the market

[3] The cost of debt is the six-month average yield on Moody's A rated public utility bonds.

[4] The cost of preferred is the six-month average yield on Moody's "A" rated preferred stock.

value of equity to 38.28% using the book value of equity. For the Gas Distribution Group, the change is 0.63% (12.31% - 11.68%).

37. Q. Please provide the DCF return based upon your preceding discussion of dividend yield, growth, and leverage.

A. As previously explained, I utilized a six-month average dividend yield ("D_1/P_0") adjusted in a forward-looking manner for my DCF calculation. This dividend yield is used in conjunction with the growth rate ("*g*") previously developed. The DCF also includes the leverage modification ("*lev*.") to recognize that the book value equity ratio is used in the ratesetting process rather than the market value equity ratio related to the price of stock. The resulting DCF cost rates are:

	D_1/P_0	+	g	+	*lev.*	=	k
Alliance RTO Group	4.77%	+	7.50%	+	1.46%	=	13.73%
Gas Distribution Group	5.43%	+	6.25%	+	0.63%	=	12.31%

The DCF results shown above provide the rate of return on common equity when stated in terms of the book value capital structure. These results are higher than the values developed earlier, which related specifically to market values. Were I to use the DCF results shown above directly in my recommendation, the 12.5% cost of equity recommendation would be higher. I should reiterate that the simplified (i.e., Gordon) form of the DCF model contains a constant growth assumption. In addition, the DCF cost rate provides an explanation of the rate of return on common stock market prices without regard to the prospect of a change in the price-

earnings multiple. An assumption that there will be no change in the price-earnings multiple is not supported by the realities of the equity market because price-earnings multiples do not remain constant.

VI. RISK PREMIUM ANALYSIS

38. Q. Please describe your use of the Risk Premium approach to determine the cost of equity.

A. The details of my use of the Risk Premium approach and the evidence in support of my conclusions are set forth in IP Exhibit 4.8. I will summarize them here. With this method, the cost of equity capital is determined by corporate bond yields plus a premium to account for the fact that common equity is exposed to greater investment risk than debt capital.

39. Q. What long-term public utility debt cost rate did you use in your risk premium analysis?

A. In my opinion, a 7.50% yield represents a reasonable estimate of a prospective long-term debt cost rate for an A-rated public utility bonds. As I will subsequently show, the Moody's index and the Blue Chip forecasts support this figure.

The historical yields for long-term public utility debt are shown graphically on page 1 of Schedule 9. For the twelve months ended March 2001, the average monthly yield on Moody's A rated index of public utility bonds was 8.11%. For the six and three-month periods ending March 2001, the yields were 7.89% and 7.74%, respectively. As

described in IP Exhibit 4.7, there was generally a downward trend in public utility bond yields beginning in the second half of 2000.

I have determined the forecast yields on A rated public utility debt by using the Blue Chip Financial Forecasts ("Blue Chip") along with the spread in the yields that I describe above and in IP Exhibit 4.7. The Blue Chip Financial Forecasts is published monthly and contains consensus forecasts of a variety of interest rates compiled from a panel of 45 banking, brokerage, and investment advisory services. In early 1999, Blue Chip stopped publishing forecasts of yields on A rated public utility bonds because the Fed deleted these yields from its Statistical Release H.15. To independently project a forecast of the yields on A rated public utility bonds, I have combined the forecast yields on thirty-year Treasury bonds published on April 1, 2001 and the yield spread of 2.25% that I describe in IP Exhibit 4.7. These spreads can be traced to a general aversion to risk, as well as the perceived scarcity of long-term treasury obligations due to a shrinking supply of the issues. For comparative purposes, I have also shown the Blue Chip Financial Forecasts of Aaa rated and Baa rated corporate bonds. These forecasts are:

	Blue Chip Financial forecasts				
	Corporate bonds		30-Year	A-rated Utility	
Quarter	Aaa rated	Baa rated	Treasury	Spread	Yield
2nd Qtr. 2001	6.9%	7.7%	5.2%	2.25%	7.45%
3rd Qtr. 2001	6.8	7.5	5.2	2.25	7.45
4th Qtr. 2001	6.8	7.5	5.3	2.25	7.55
1st Qtr. 2002	6.9	7.5	5.3	2.25	7.55
2nd Qtr. 2002	7.0	7.6	5.4	2.25	7.65
3rd Qtr. 2002	7.1	7.7	5.5	2.25	7.75

Given these forecasts and the historical long-term interest rates, a 7.50% yield on A rated public utility bonds represents a reasonable expectation.

40. Q. What equity risk premium have you determined for public utilities?

A. IP Exhibit 4.8 provides a discussion of the financial returns that I relied upon to develop the appropriate equity risk premium for the S&P Public Utilities. It should be recognized that the S&P Public Utility index is a subset of the overall S&P 500 Composite index. The S&P Public Utility index is intended to represent firms engaged in regulated activities and today is comprised of electric companies and gas companies. With the equity risk premiums developed for the S&P Public Utilities as a base, I derived the equity risk premium for the Alliance RTO Group and the Gas Distribution Group. The S&P Public Utility index contains companies that are more closely aligned with these groups than some broader market indexes, such as the S&P 500 Composite index. In fact, seven of the eight companies in the Alliance RTO Group and two of the five companies in the Gas Distribution Group are contained in the S&P Public Utility index. Use of the S&P Public Utility index reduces the role of subjective judgment in establishing the risk premium for public utilities.

41. Q. What equity risk premium for the S&P Public Utilities have you determined for this case?

A. To develop an appropriate risk premium, I analyzed the results for the S&P Public Utilities by averaging (i) the midpoint of the range shown by the geometric mean and median and (ii) the arithmetic mean. This

procedure has been employed to provide a comprehensive way of measuring the central tendency of the historical returns. As shown by the values indicated on page 2 of Schedule 10, the indicated risk premiums for the various time periods analyzed are 5.65% (1928-2000), 6.77% (1952-2000), 6.53% (1974-2000), and 6.89% (1979-2000). The selection of the shorter periods taken from the entire historical series is designed to provide a risk premium that conforms more nearly to present investment fundamentals and removes some of the more distant data from the analysis.

42. Q. Do you have further support for the selection of the time periods used in your equity risk premium determination?

A. Yes. First, the terminal year of my analysis presented in Schedule 10 represents the most recent calendar year of data which is available at the time this testimony was prepared. Hence, all historical periods include data through 2000. Second, the selection of the initial year of each period was based upon the events that I described in IP Exhibit 4.8. These events were fixed in history and cannot be manipulated as later financial data becomes available. That is to say, using the Treasury-Federal Reserve Accord as a defining event, the year 1952 is fixed as the beginning point for the measurement period regardless of the financial results that subsequently occurred. As such, additional data is merely added to the earlier results when it becomes available, clearly showing that the periods chosen were not driven by the desired results of the study.

43. Q. What conclusions have you drawn from these data?

A. Using the summary values provided on page 2 of Schedule 10, the 1928-2000 period provides the lowest indicated risk premium, while the 1979-2000 period provides the highest risk premium for the S&P Public Utilities. Within these bounds, a common equity risk premium of 6.65% (6.77% + 6.53% = 13.30% ÷ 2) is shown from data covering the periods 1952-2000 and 1974-2000. Therefore, 6.65% represents a reasonable risk premium for the S&P Public Utilities in this case.

As noted earlier in my fundamental risk analysis, differences in risk characteristics must be taken into account when applying the results for the S&P Public Utilities to the Alliance RTO Group and Gas Distribution Group. I recognized these differences in the development of the equity risk premium in this case. I previously enumerated various differences in fundamentals among IPC, the Alliance RTO Group, the Gas Distribution Group and the S&P Public Utilities, including size, market ratios, common equity ratio, return on book equity, operating ratios, coverage, quality of earnings, internally generated funds, and betas. In my opinion, these differences indicate that 5.50% represents a reasonable common equity risk premium in this case for the Alliance RTO Group and Gas Distribution Group. This represents approximately 83% (5.50% ÷ 6.65% = 0.83) of the risk premium of the S&P Public Utilities and is reflective of the risk of the Alliance RTO Group and Gas Distribution Group compared with that of the S&P Public Utilities.

44. Q. What common equity cost rate would be appropriate using this equity risk premium and the yield on long-term public utility debt?

A. The cost of equity (i.e., "*k*") is represented by the sum of the prospective yield for long-term public utility debt (i.e., "*i*") and the equity risk premium (i.e., "*RP*"). The Risk Premium approach provides a cost of equity of:

$$i + RP = k$$

$$7.50\% + 5.50\% = 13.00\%$$

VII. CAPITAL ASSET PRICING MODEL

45. Q. How have you used the Capital Asset Pricing Model to measure the cost of equity in this case?

A. I have used the Capital Asset Pricing Model ("CAPM") in addition to my other methods. As with other models of the cost of equity, the CAPM contains a variety of assumptions, as I discuss in IP Exhibit 4.9. Therefore, this method should be used with other methods to measure the cost of equity as each will complement the other and will provide a result that will alleviate the unavoidable shortcomings found in each method.

46. Q. What are the features of the CAPM as you have used it?

A. The CAPM uses a yield on a risk-free interest bearing obligation plus a return representing a premium that is proportional to the systematic risk of an investment. The details of my use of the CAPM and evidence in support of my conclusions are set forth in IP Exhibit 4.9. To compute the cost of equity with the CAPM, three components are necessary: a risk-

free rate of return ("*Rf*"), the beta measure of systematic risk ("*ß*"), and the market risk premium ("*Rm – Rf*") derived from the total return on the market of equities reduced by the risk-free rate of return. The CAPM specifically accounts for differences in systematic risk (i.e., market risk as measured by the beta) between an individual firm or group of firms and the entire market of equities. As such, to calculate the CAPM it is necessary to employ firms with traded stocks. In this regard, I performed a CAPM calculation for the Alliance RTO Group and the Gas Distribution Group. In contrast, my Risk Premium approach also considers industry- and company-specific factors because it is not limited to measuring just systematic risk. As a consequence, my Risk Premium approach is more comprehensive than the CAPM. In addition, the Risk Premium approach provides a better measure of the cost of equity because it is founded upon the yields on corporate bonds rather than Treasury bonds. Due to the disconnection of the yields on corporate and Treasury bonds, the Risk Premium approach is preferable at this time.

47. Q. What betas have you considered in the CAPM?

A. For my CAPM analysis, I initially considered the Value Line betas. As shown on Schedule 11, page 1 indicates that the Value Line beta is .57 for the Alliance RTO Group and page 2 indicates that the Value Line beta is .60 for the Gas Distribution Group.

48. Q. What betas have you used in the CAPM determined cost of equity?

A. The betas must be reflective of the financial risk associated with the ratesetting capital structure that is measured at book value. Therefore, the Value Line betas cannot be used directly in the CAPM unless those betas are applied to capital structures measured with market values. To develop a CAPM cost rate applicable to a book value capital structure, the Value Line betas have been unleveraged and releveraged for the common equity ratios using book values. This adjustment has been made with the formula:

$$ß1 = ßu\ [1 + (1 - t)\ D/E + P/E]$$

where *ß1* = the leveraged beta, *ßu* = the unleveraged beta, *t* = income tax rate, *D* = debt ratio, *P* = preferred stock ratio, and *E* = common equity ratio. The average of the betas published by Value Line have been calculated with the market price of stock and therefore are related to the market value capitalization that contains a 54.25% common equity ratio for the Alliance RTO Group and a 66.96% common equity ratio for the Gas Distribution Group. By using the formula shown above and the capital structure ratios of the Alliance RTO Group measured at their market values, their average betas would become .36 for the Alliance RTO Group and .45 for the Gas Distribution Group, assuming they employed no leverage and were 100% equity financed. With the unleveraged betas as a basis, I calculated the leveraged beta of 0.75 for the Alliance RTO Group and .70 for the Gas Distribution Group associated with their book value capital structures.

The betas and their corresponding common equity ratios are:

	Market Values		Book Values	
	Beta	Common Equity Ratio	Beta	Common Equity Ratio
Alliance RTO Group	.57	54.25%	.75	38.28%
Gas Distribution Group	.60	68.96%	.70	54.43%

The leveraged betas that I employ in the CAPM cost of equity are 0.75 for the Alliance RTO Group and .70 for the Gas Distribution Group.

49. Q. What risk-free rate have you used in the CAPM?

A. For reasons explained in IP Exhibit 4.7, I have employed the yields on long-term 30-year Treasury bonds using both historical and forecast data to match the longer-term horizon associated with the ratesetting process. As shown on pages 3 and 4 of Schedule 11, I provided the historical yields on 30-year Treasury bonds. For the twelve months ended March 2001, the average yield was 5.73% as shown on page 4 of that schedule. For the six- and three-months ended March 2001, the yields on 30-year Treasury bonds were 5.57% and 5.44%, respectively. As shown on page 5 of Schedule 11, forecasts published by Blue Chip Financial Forecasts on April 1, 2001 indicate that the yields on 30-year Treasury bonds are expected to be in the range of 5.2% to 5.5% during the next six quarters. To conform to the use of the historical and forecast data that I employed in my analysis, I have used a 5.25% risk-free rate of return for CAPM purposes.

50. Q. What market premium have you used in the CAPM?

A. As developed in IP Exhibit 4.9, my calculation of the market premium is

developed from both historical market performance (i.e., 7.3%) and with the Value Line forecasts (i.e., 14.26%). The resulting market premium is 10.78% (7.3% + 14.26% = 21.56% ÷ 2) which represents the average market premium using the historical SBBI data and the forecasts by Value Line.

51. Q. What CAPM result have you determined?

A. Using the 5.25% risk-free rate of return, market betas of .57 for the Alliance RTO Group and .60 for the Gas Distribution Group, and the 10.78% market premium, the following results are indicated which relate to market value.

Market Value	*Rf* + *ß (Rm-Rf)* = *k*
Alliance RTO Group	5.25% + .57 (10.78%) = 11.39%
Gas Distribution Group	5.25% + .60 (10.78%) = 11.72%

When applying the CAPM to book values, the leveraged betas must be employed. The CAPM related to a book value capital structure uses a .75 beta for the Alliance RTO Group and .70 beta for the Gas Distribution Group.

Book Value	*Rf* + *ß (Rm-Rf)* = *k*
Alliance RTO Group	5.25% + .75 (10.78%) = 13.34%
Gas Distribution Group	5.25% + .70 (10.78%) = 12.80%

52. Q. Is the rate of return indicated by the CAPM fully reflective of the risk for the Gas Distribution Group?

A. No. The market value related CAPM results is 11.72% for the Gas

Distribution Group. I should note that there would be an understatement of a firm's cost of equity with the CAPM unless the size of a firm is considered. That is to say, as the size of a firm decreases, its risk, and hence its required return increases. Moreover, in his discussion of the cost of capital, Professor Brigham has indicated that smaller firms have higher capital costs than otherwise similar larger firms (see Fundamentals of Financial Management, fifth edition, page 623). Also, the Fama/French study (see "The Cross-Section of Expected Stock Returns", The Journal of Finance, June 1992) established that size of a firm helps explain stock returns. In an October 15, 1995 article in Public Utility Fortnightly, entitled Equity and the Small-Stock Effect, by Michael Annin, it was demonstrated that the CAPM could understate the cost of equity significantly according to a company's size. This was further demonstrated in the SBBI Yearbook which indicated that the returns for stocks in lower deciles (i.e., smaller stocks) had returns in excess of those shown by the simple CAPM. In this regard, the Gas Distribution Group had an average market capitalization of its equity of $833 million which would place it in the sixth decile according to the size of the companies traded on the New York Stock Exchange. (The Alliance RTO Group's market capitalization is over $5 billion placing it in the large cap category.) Therefore, the Gas Distribution Group must be viewed as a portfolio consisting of those in the 6th through 8th deciles with market capitalization between $333 million and $840 million. This would

indicate a size premium of 1.07% above the CAPM cost rate according to the SBBI 2001 Yearbook. Absent such an adjustment, the CAPM would understate the required return unless the average size of the Gas Distribution Group is considered. The CAPM results would be 12.79% (11.72% + 1.07%) with the size adjustment for the Gas Distribution Group.

VIII. CREDIT QUALITY ISSUES AND CONCLUSION

53. Q. What credit quality issues must be considered as part of a fair rate of return determination for the Company?

A. IPC issues its own long-term debt and preferred stock directly in the public markets. As such, the Company must have the financial strength characteristics that will, at a minimum, permit it to maintain a financial profile that is commensurate with the requirements to obtain a solid investment grade bond rating. It is important, therefore, that the Commission provide the Company with an opportunity to experience an adequate rate of return so that its credit profile conforms to the standards for strong credit quality. In this regard, a variety of quantitative and qualitative measures must be considered when determining an appropriate rate of return on common equity.

54. Q. What measures of credit quality have you considered in the context of the Company's proposed rate of return?

A. I analyzed the Company's proposed rate of return by reference to two benchmarks of credit quality in order to satisfy the capital attraction and

maintenance of credit standards of a fair rate of return. It is important that the Commission provide the Company with a reasonable opportunity to achieve adequate credit quality so that its financial condition is commensurate with its service obligations to customers. In the area of fixed charge coverage, the rate of return on common equity represents a critical component because it is the equity return that provides the margin whereby interest charges are earned more than one time. In this regard, coverage of the Company's senior capital costs reveals the level of protection that IPC can supply for its fixed obligations. Normally, before-income tax coverage is used for the purpose of a company's debt interest coverage and overall after-income tax coverage is the measure employed with regard to interest charges and preferred stock dividends.

Public utilities must compete in the capital markets to attract needed future capital and, as such, interest coverage should be used as a test to measure the adequacy of the rate of return. Of course, it is not the only factor to be considered in testing the appropriate rate of return and must be viewed in relation to an individual company's degree of financial leverage and cash flow benchmarks. Maintenance of a strong A bond rating financial profile is the appropriate regulatory objective and an AA bond rating should be encouraged. Although IPC's current credit quality rating is BBB+ by Standard & Poor's Corporation ("S&P") and Baa1 by Moody's Investor Service, Inc. ("Moody's"), the objective should be the opportunity to attain an A bond rating. In my opinion, an A bond rating is

the minimum goal necessary to provide a public utility with a sufficient degree of financial flexibility in order to attract capital on reasonable terms during all economic conditions. Customers benefit from strong credit quality because the Company will be able to attain lower financing costs that are passed on to customers in the form of a lower embedded cost of debt.

Using a 39.67% composite federal and state income tax rate, Schedule 1 shows that the pre-tax coverage of interest expense would be 3.00 times assuming that the Company could actually earn its 9.22% weighted coverage cost of capital. The fixed charge coverages shown on Schedule 1 were developed from the components used to calculate the weighted average cost of capital using the statutory federal and state income tax rates. Again, those coverages assume that the Company will be able to actually achieve a 12.50% rate of return on common equity that I recommend in this proceeding. The leverage shown on Schedule 1 indicates a total debt ratio of 57.49%. The pre-tax interest coverage and debt leverage shown on Schedule 1 should be viewed in the context of S&P bond rating criteria that I previously discussed. However, the rating agencies have indicated that securities such as the Transitional Funding Instruments which are issued by a special purpose entity that is bankruptcy remote from the utility are not an obligation of the utility and will be disregarded or discounted in analyzing its credit quality. If the Transitional Funding Instruments were removed from calculation of the

leverage and coverage results shown on Schedule 1, then the debt ratio would be 48.65% and the pre-tax interest coverage would be 3.86 times. It is important to recognize that the benchmarks against which the Company's performance are measured represent levels expected to be achieved, rather than the opportunity provided in the ratesetting process. Although the financial ratios shown on Schedule 1 suggest BBB credit quality, the removal of the Transitional Funding Instruments from the calculation of the ratios would improve the Company's ratios and move them toward the A rating benchmarks. The credit quality benchmarks established by S&P for a business profile "6" include pre-tax interest coverage of 4.0 times to 5.2 times and debt leverage of 39.5% to 46.0% for an A bond rating. Therefore, the rate of return that IPC has requested in this proceeding, which includes my recommended cost of common equity, cannot be viewed to be excessive.

55. Q. What is your conclusion concerning the Company's cost of equity?

A. Based upon the application of a variety of methods and models described previously, it is my opinion that the cost of equity is at least 12.50%. It is essential that the Commission employ a variety of techniques to measure the Company's cost of equity because of the limitations and infirmities that are inherent in each method. Indeed, my studies indicate that the Company's 12.50% rate of return on common equity is within the range of the results shown by the Alliance RTO Group and the Gas Distribution Group. This is shown by the following summary of results:

	Alliance RTO Group	Gas Distribution Group
DCF and RP	12.64%	12.34%
DCF and CAPM	11.83%	12.24%
DCF, RP and CAPM	12.22%	12.49%

In reaching my conclusion that the Company's rate of return on common equity is 12.50%, I have considered the array of equity cost rates shown in the table above. Those results justify an equity return in the range of 11.83% to 12.64%. I have recommended a 12.50% return on equity from this range due to the high risk traits of IPC. In this regard, the Company's business profile is in the "6" category, as compared to the average "5" business profile of the Alliance RTO Group and the average "4" business profile of the Gas Distribution Group. This comparison indicates that IPC requires a higher equity return as compensation for its higher business risk. In addition, the Company's CCR is BBB+, as compared to the average credit rating of A- for the Alliance RTO Group and the average credit rating of A+ for the Gas Distribution Group. Again, these comparisons point to higher risk for IPC which indicates that the Company's return needs to be near the high end of the range shown by the Alliance RTO Group and Gas Distribution Group results.

56. Q. Does this conclude your prepared direct testimony?

A. Yes.

EDUCATIONAL BACKGROUND, BUSINESS EXPERIENCE AND QUALIFICATIONS

I was awarded a degree of Bachelor of Science in Business Administration by Drexel University in 1971. While at Drexel, I participated in the Cooperative Education Program which included employment, for one year, with American Water Works Service Company, Inc., as an internal auditor, where I was involved in the audits of several operating water companies of the American Water Works System and participated in the preparation of annual reports to regulatory agencies and assisted in other general accounting matters.

Upon graduation from Drexel University, I was employed by American Water Works Service Company, Inc., in the Eastern Regional Treasury Department where my duties included preparation of rate case exhibits for submission to regulatory agencies, as well as responsibility for various treasury functions of the thirteen New England operating subsidiaries.

In 1973, I joined the Municipal Financial Services Department of Betz Environmental Engineers, a consulting engineering firm, where I specialized in financial studies for municipal water and sewer systems.

In 1974, I joined Associated Utility Services, Inc., now known as AUS Consultants. I held various positions with the Utility Services Group of AUS Consultants, concluding my employment there as a Senior Vice President.

In 1994, I formed P. Moul & Associates, an independent financial and regulatory consulting firm. In my capacity as Managing Consultant and for the past twenty-seven years, I have continuously studied the rate of return requirements for cost of service-regulated firms. In this regard, I have supervised the preparation of rate of return studies which were employed in connection with my testimony and in the past for other individuals. I have presented direct testimony on the subject of fair rate of return, evaluated rate of return testimony of other witnesses, and presented rebuttal testimony.

My studies and prepared direct testimony have been presented before twenty-eight (28) federal, state

and municipal regulatory commissions, consisting of: the Federal Energy Regulatory Commission; state public utility commissions in Alabama, Connecticut, Delaware, Florida, Georgia, Hawaii, Illinois, Indiana, Iowa, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, New Hampshire, New Jersey, New York, North Carolina, Ohio, Tennessee, Pennsylvania, South Carolina, Virginia, and West Virginia; and the Philadelphia Gas Commission. My testimony has been offered in over 200 rate cases involving electric power, natural gas distribution and transmission, resource recovery, solid waste collection and disposal, telephone, wastewater, and water service utility companies. While my testimony has involved principally fair rate of return and financial matters, I have also testified on capital allocations, capital recovery, cash working capital, income taxes, factoring of accounts receivable, and take-or-pay expense recovery. My testimony has been offered on behalf of municipal and investor-owned public utilities and for the staff of a regulatory commission. I have also testified at an Executive Session of the State of New Jersey Commission of Investigation concerning the BPU regulation of solid waste collection and disposal.

I was a co-author of a verified statement submitted to the Interstate Commerce Commission concerning the 1983 Railroad Cost of Capital (Ex Parte No. 452). I was also co-author of comments submitted to the Federal Energy Regulatory Commission regarding the Generic Determination of Rate of Return on Common Equity for Public Utilities in 1985, 1986 and 1987 (Docket Nos. RM85-19-000, RM86-12-000, RM87-35-000 and RM88-25-000). Further, I have been the consultant to the New York Chapter of the National Association of Water Companies which represented the water utility group in the Proceeding on Motion of the Commission to Consider Financial Regulatory Policies for New York Utilities (Case 91-M-0509). I have also submitted comments to the Federal Energy Regulatory Commission in its Notice of Proposed Rulemaking (Docket No. RM99-2-000) concerning Regional Transmission Organizations and on behalf of the Edison Electric Institute in its intervention in the case of Southern California Edison Company (Docket No. ER97-2355-000).

In late 1978, I arranged for the private placement of bonds on behalf of an investor-owned public utility. I have assisted in the preparation of a report to the Delaware Public Service Commission relative to the operations of the Lincoln and Ellendale Electric Company. I was also engaged by the Delaware P.S.C. to review and report on the proposed financing and disposition of certain assets of Sussex Shores Water Company (P.S.C. Docket Nos. 24-79 and 47-79). I was a co-author of a Report on Proposed Mandatory Solid Waste Collection Ordinance prepared for the Board of County Commissioners of Collier County, Florida.

I have been a consultant to the Bucks County Water and Sewer Authority concerning rates and charges for wholesale contract service with the City of Philadelphia. My municipal consulting experience also included an assignment for Baltimore County, Maryland, regarding the City/County Water Agreement for Metropolitan District customers (Circuit Court for Baltimore County in Case 34/153/87-CSP-2636).

I am a member of the Society of Utility and Regulatory Financial Analysis (formerly the National Society of Rate of Return Analysts) and have attended several Financial Forums sponsored by the Society. I attended the first National Regulatory Conference at the Marshall-Wythe School of Law, College of William and Mary. I also attended an Executive Seminar sponsored by the Colgate Darden Graduate Business School of the University of Virginia concerning Regulated Utility Cost of Equity and the Capital Asset Pricing Model. In October 1984, I attended a Standard & Poor's Seminar on the Approach to Municipal Utility Ratings, and in May 1985, I attended an S&P Seminar on Telecommunications Ratings.

My lecture and speaking engagements include:

Date	Occasion	Sponsor
December 2000	Pennsylvania Public Utility Law Conference: Non-traditional Players In the Water Industry	Pennsylvania Bar Institute
July 2000	EEI Member Workshop Developing Incentives Rates: Application and Problems	Edison Electric Institute
February 2000	The Sixth Annual FERC Briefing	Exnet and Bruder, Gentile & Marcoux, LLP
March 1994	Seventh Annual Proceeding	Electric Utility Business Environment Conference
May 1993	Financial School	New England Gas Assoc.
April 1993	Twenty-Fifth Financial Forum	National Society of Rate of Return Analysts
June 1992	Rate and Charges Subcommittee Annual Conference	American Water Works Association
May 1992	Rates School	New England Gas Assoc.
October 1989	Seventeenth Annual Eastern Utility Rate Seminar	Water Committee of the National Association of Regulatory Utility Commissioners Florida Public Service Service Commission and University of Utah
October 1988	Sixteenth Annual Eastern Utility Rate Seminar	Water Committee of the National Association of Regulatory Utility Commissioners, Florida Public Service Commission and Univer-sity of Utah
May 1988	Twentieth Financial Forum	National Society of Rate of Return Analysts
October 1987	Fifteenth Annual Eastern Utility Rate Seminar	Water Committee of the National Association of Regulatory Utility Commissioners, Florida Public Service Commis-sion and University of Utah
September 1987	Rate Committee	American Gas Association

	Meeting	
Date	Occasion	Sponsor
May 1987	Pennsylvania Chapter annual meeting	National Association of Water Companies
October 1986	Eighteenth Financial Forum	National Society of Rate of Return
October 1984	Fifth National on Utility Ratemaking Fundamentals	American Bar Association
March 1984	Management Seminar	New York State Telephone Association
February 1983	The Cost of Capital Seminar	Temple University, School of Business Admin.
May 1982	A Seminar on Regulation and The Cost of Capital	New Mexico State University, Center for Business Research and Services
October 1979	Economics of Regulation	Brown University

RATESETTING PRINCIPLES

Under traditional cost of service regulation, an agency engaged in ratesetting, such as the Commission, serves as a substitute for competition. In setting rates, a regulatory agency must carefully consider the public's interest in reasonably priced, as well as safe and reliable, service. The level of rates must also provide an opportunity to earn a rate of return for the public utility and its investors that is commensurate with the risk to which the invested capital is exposed so that the public utility has access to the capital required to meet its service responsibilities to its customers. Without an opportunity to earn a fair rate of return, a public utility will be unable to attract sufficient capital required to meet its responsibilities over time.

It is important to remember that regulated firms must compete for capital in a global market with non-regulated firms, as well as municipal, state and federal governments. Traditionally, a public utility has been responsible under its service agreements for providing a particular type of service to its customers within a specific market area. Although this relationship with its customers has been changing, it remains quite different from a non-regulated firm which is free to enter and exit competitive markets in accordance with available business opportunities.

As established by the landmark Bluefield and Hope cases,[1] several tests must be satisfied to demonstrate the fairness or reasonableness of the rate of return. These tests include a determination of whether the rate of return is (i) similar to that of other financially sound businesses having similar or comparable risks, (ii) sufficient to ensure confidence in the financial integrity of the public utility, and (iii) adequate to maintain and support the credit of the utility, thereby enabling it to attract, on a reasonable cost basis, the funds necessary to satisfy its capital requirements so that it can meet the obligation to provide adequate and reliable service to the public.

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1 Bluefield Water Works & Improvement Co. v. P.S.C. of West Virginia, 262 U.S. 679 (1923) and F.P.C. v. Hope Natural Gas Co., 320 U.S. 591 (1944).

A fair rate of return must not only provide the utility with the ability to attract new capital, it must also be fair to existing investors. An appropriate rate of return which may have been reasonable at one point in time may become too high or too low at a subsequent point in time, based upon changing business risks, economic conditions and alternative investment opportunities. When applying the standards of a fair rate of return, it must be recognized that the end result must provide for the payment of interest on the company's debt, the payment of dividends on the company's stock, the recovery of costs associated with securing capital, the maintenance of reasonable credit quality for the company, and support of the company's financial condition, which today would include those measures of financial performance in the areas of interest coverage and adequate cash flow derived from a reasonable level of earnings.

EVALUATION OF RISK

The rate of return required by investors is directly linked to the perceived level of risk. The greater the risk of an investment, the higher is the required rate of return necessary to compensate for that risk, all else being equal. Because investors will seek the highest rate of return available, considering the risk involved, the rate of return must at least equal the investor-required, market-determined cost of capital if public utilities are to attract the necessary investment capital on reasonable terms.

In the measurement of the cost of capital, it is necessary to assess the risk of a firm. The level of risk for a firm is often defined as the uncertainty of achieving expected performance, and is sometimes viewed as a probability distribution of possible outcomes. Hence, if the uncertainty of achieving an expected outcome is high, the risk is also high. As a consequence, high-risk firms must offer investors higher returns than low risk firms which pay less to attract capital from investors. This is because the level of uncertainty, or risk of not realizing expected returns, establishes the compensation required by investors in the capital markets. Of course, the risk of a firm must also be considered in the context of its ability to actually experience adequate earnings which conform to a fair rate of return. Thus, if there is a high probability that a firm will not perform well due to fundamentally poor market conditions, investors will demand a higher return.

The investment risk of a firm is comprised of its business risk and financial risk. Business risk is all risk other than financial risk, and is sometimes defined as the staying power of the market demand for a firm's product or service and the resulting inherent uncertainty of realizing expected pre-tax returns on the firm's assets. Business risk encompasses all operating factors, e.g., productivity, competition, management ability, etc. that bear upon the expected pre-tax operating income attributed to the fundamental nature of a firm's business. Financial risk results from a firm's use of borrowed funds (or similar sources of capital with fixed payments) in its capital structure, i.e., financial leverage. Thus, if a firm

did not employ financial leverage by borrowing any capital, its investment risk would be represented by its business risk.

It is important to note that in evaluating the risk of regulated companies, financial leverage cannot be considered in the same context as it is for non-regulated companies. Financial leverage has a different meaning for regulated firms than for non-regulated companies. For regulated public utilities, the cost of service formula gives the benefits of financial leverage to consumers in the form of lower revenue requirements. For non-regulated companies, all benefits of financial leverage are retained by the common stockholder. Although retaining none of the benefits, regulated firms bear the risk of financial leverage. Therefore, a regulated firm's rate of return on common equity must recognize the greater financial risk shown by the higher leverage typically employed by public utilities.

Although no single index or group of indices can precisely quantify the relative investment risk of a firm, financial analysts use a variety of indicators to assess that risk. For example, the creditworthiness of a firm is revealed by its bond ratings. If the stock is traded, the price-earnings multiple, dividend yield, and beta coefficients (a statistical measure of a stock's relative volatility to the rest of the market) provide some gauge of overall risk. Other indicators, which are reflective of business risk, include the variability of the rate of return on equity, which is indicative of the uncertainty of actually achieving the expected earnings; operating ratios (the percentage of revenues consumed by operating expenses, depreciation, and taxes other than income tax), which are indicative of profitability; the quality of earnings, which considers the degree to which earnings are the product of accounting principles or cost deferrals; and the level of internally generated funds. Similarly, the proportion of senior capital in a company's capitalization is the measure of financial risk which is often analyzed in the context of the equity ratio (i.e., the complement of the debt ratio).

COST OF EQUITY--GENERAL APPROACH

Through a fundamental financial analysis, the relative risk of a firm must be established prior to the determination of its cost of equity. Any rate of return recommendation which lacks such a basis will inevitably fail to provide a utility with a fair rate of return except by coincidence. With a fundamental risk analysis as a foundation, standard financial models can be employed by using informed judgment. The methods which have been employed to measure the cost of equity include: the Discounted Cash Flow ("DCF") model, the Risk Premium ("RP") approach, the Capital Asset Pricing Models ("CAPM") and the Comparable Earnings ("CE") approach.

The traditional DCF model, while useful in providing some insight into the cost of equity, is not an approach that should be used exclusively. The divergence of stock prices from company-specific fundamentals can provide a misleading cost of equity calculation. As reported in The Wall Street Journal on June 6, 1991, a statistical study published by Goldman Sachs indicated that only 35% of stock price growth in the 1980's could be attributed to earnings and interest rates. Further, 38% of the rise in stock prices during the 1980's was attributed to unknown factors. The Goldman Sachs study highlights the serious limitations of a model, such as DCF, which is founded upon identification of specific variables to explain stock price growth. That is to say, when stock price growth exceeds growth in a company's earnings per share, models such as DCF will misspecify investor expected returns which are comprised of capital gains, as well as dividend receipts. As such, a combination of methods should be used to measure the cost of equity.

The Risk Premium analysis is founded upon the prospective cost of long-term debt, i.e., the yield that the public utility must offer to raise long-term debt capital directly from investors. To that yield must be added a risk premium in recognition of the greater risk of common equity over debt. This additional risk is, of course, attributable to the fact that the payment of interest and principal to creditors has priority

over the payment of dividends and return of capital to equity investors. Hence, equity investors require a higher rate of return than the yield on long-term corporate bonds.

The CAPM is a model not unlike the traditional Risk Premium. The CAPM employs the yield on a risk-free interest-bearing obligation plus a premium as compensation for risk. Aside from the reliance on the risk-free rate of return, the CAPM gives specific quantification to systematic (or market) risk as measured by beta.

The Comparable Earnings approach measures the returns expected/experienced by other non-regulated firms and has been used extensively in rate of return analysis for over a half century. However, its popularity diminished in the 1970s and 1980s with the popularization of market-based models. Recently, there has been renewed interest in this approach. Indeed, the financial community has expressed the view that the regulatory process must consider the returns which are being achieved in the non-regulated sector so that public utilities can compete effectively in the capital markets. Indeed, with additional competition being introduced throughout the traditionally regulated pipeline and utility industries, returns expected to be realized by non-regulated firms have become increasing relevant in the ratesetting process. The Comparable Earnings approach considers directly those requirements and it fits the established standards for a fair rate of return set forth in the Bluefield and Hope decisions. The Hope decision requires that a fair return for a utility must be equal to that earned by firms of comparable risk.

DISCOUNTED CASH FLOW ANALYSIS

Discounted Cash Flow ("DCF") theory seeks to explain the value of an economic or financial asset as the present value of future expected cash flows discounted at the appropriate risk-adjusted rate of return. Thus, if $100 is to be received in a single payment 10 years subsequent to the acquisition of an asset, and the appropriate risk-related interest rate is 8%, the present value of the asset would be $46.32 (Value = $100 ÷ $(1.08)^{10}$) arising from the discounted future cash flow. Conversely, knowing the present $46.32 price of an asset (where price = value), the $100 future expected cash flow to be received 10 years hence shows an 8% annual rate of return implicit in the price and future cash flows expected to be received.

In its simplest form, the DCF theory considers the number of years from which the cash flow will be derived and the annual compound interest rate which reflects the risk or uncertainty associated with the cash flows. It is appropriate to reiterate that the dollar values to be discounted are future cash flows.

DCF theory is flexible and can be used to estimate value (or price) or the annual required rate of return under a wide variety of conditions. The theory underlying the DCF methodology can be easily illustrated by utilizing the investment horizon associated with a preferred stock not having an annual sinking fund provision. In this case, the investment horizon is infinite, which reflects the perpetuity of a preferred stock. If *P* represents price, *Kp* is the required rate of return on a preferred stock, and *D* is the annual dividend (*P* and *D* with time subscripts), the value of a preferred share is equal to the present value of the dividends to be received in the future discounted at the appropriate risk-adjusted interest rate, *Kp*. In this circumstance:

$$P_0 = \frac{D_1}{(1 + Kp)} + \frac{D_2}{(1 + Kp)^2} + \frac{D_3}{(1 + Kp)^3} + \ldots + \frac{D_n}{(1 + Kp)^n}$$

If $D_1 = D_2 = D_3 = \ldots D_n$, as is the case for preferred stock, and ***n*** approaches infinity, as is the case for non-callable preferred stock without a sinking fund, then this equation reduces to:

$$P_0 = \frac{D_1}{Kp}$$

This equation can be used to solve for the annual rate of return on a preferred stock when the current price and subsequent annual dividends are known. For example, with D_1 = \$1.00, and P_0 = \$10, then Kp = \$1.00 ÷ \$10, or 10%.

The dividend discount equation, first shown, is the generic DCF valuation model for all equities, both preferred and common. While preferred stock generally pays a constant dividend, permitting the simplification subsequently noted, common stock dividends are not constant. Therefore, absent some other simplifying condition, it is necessary to rely upon the generic form of the DCF. If, however, it is assumed that $D_1, D_2, D_3 \ldots D_n$ are systematically related to one another by a constant growth rate *(g)*, so that $D_0 (1 + g) = D_1$, $D_1 (1 + g) = D_2$, $D_2 (1 + g) = D_3$ and so on approaching infinity, and if *Ks* (the required rate of return on a common stock) is greater than ***g***, then the DCF equation can be reduced to:

$$P_0 = \frac{D_1}{Ks - g} \quad or \quad P_0 = \frac{D_0 (1 + g)}{Ks - g}$$

which is the periodic form of the "Gordon" model.[1] Proof of the DCF equation is found in all modern basic finance textbooks. This DCF equation can be easily solved as:

1 Although the popular application of the DCF model is often attributed to the work of Myron J. Gordon in the

$$Ks = \frac{D_0 (1 + g)}{P_0} + g$$

which is the periodic form of the Gordon Model commonly applied in estimating equity rates of return in rate cases. When used for this purpose, *Ks* is the annual rate of return on common equity demanded by investors to induce them to hold a firm's common stock. Therefore, the variables D_0, P_0 and g must be estimated in the context of the market for equities, so that the rate of return, which a public utility is permitted the opportunity to earn, has meaning and reflects the investor-required cost rate.

Application of the Gordon model with market derived variables is straightforward. For example, using the most recent prior annualized dividend (D_0) of \$0.80, the current price (P_0) of \$10.00, and the investor expected dividend growth rate (g) of 5%, the solution of the DCF formula provides a 13.4% rate of return. The dividend yield component in this instance is 8.4%, and the capital gain component is 5%, which together represent the total 13.4% annual rate of return required by investors. The capital gain component of the total return may be calculated with two adjacent future year prices. For example, in the eleventh year of the holding period, the price per share would be \$17.10 as compared with the price per share of \$16.29 in the tenth year which demonstrates the 5% annual capital gain yield.

Some DCF devotees believe that it is more appropriate to estimate the required return on equity with a model which permits the use of multiple growth rates. This may be a plausible approach to DCF, where investors expect different dividend growth rates in the near term and long run. If two growth rates, one near term and one long-run, are to be used in the context of a price $(\boldsymbol{P_0})$ of \$10.00, a dividend $(\boldsymbol{D_0})$ of \$0.80, a near-term growth rate of 5.5%, and a long-run expected growth rate of 5.0% beginning at year 6, the required rate of return is 13.57% solved with a computer by iteration.

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mid-1950's, J.B. Williams exposited the DCF model in its present form nearly two decades earlier.

Use of DCF in Ratesetting

The DCF method can provide a misleading measure of the cost of equity in the ratesetting process when stock prices diverge from book values by a significant margin. When the difference between share values and book values is significant, the results from the DCF can result in a misspecified cost of equity when those results are applied to book value. This is because investor expected returns, as described by the DCF model, are related to the market value of common stock. This discrepancy is shown by the following example. If it is assumed, hypothetically, that investors require a 12.5% return on their common stock investment value (i.e., the market price per share) when share values represent 150% of book value, investors would require a total annual return of $1.50 per share on a $12.00 market value to realize their expectations. If, however, this 12.5% market-determined cost rate is applied to an original cost rate base which is equivalent to the book value of common stock of $8.00 per share, the utility's actual earnings per share would be only $1.00. This would result in a $.50 per share earnings shortfall which would deny the utility the ability to satisfy investor expectations.

As a consequence, a utility could not withstand these DCF results applied in a rate case and also sustain its financial integrity. This is because $1.00 of earnings per share and a 75% dividend payout ratio would provide earnings retention growth of just 3.125% (i.e., $1.00 x .75 = $0.75, and $1.00 - $0.75 = $0.25 ÷ $8.00 = 3.125%). In this example, the earnings retention growth rate plus the 6.25% dividend yield ($0.75 ÷ $12.00) would equal 9.375% (6.25% + 3.125%) as indicated by the DCF model. This DCF result is the same as the utility's rate of dividend payments on its book value (i.e., $0.75 ÷ $8.00 = 9.375%). This situation provides the utility with no earnings cushion for its dividend payment because the DCF result equals the dividend rate on book value (i.e., both rates are 9.375% in the example). Moreover, if the price employed in my example were higher than 150% of book value, a "negative"

earnings cushion would develop and cause the need for a dividend reduction because the DCF result would be less than the dividend rate on book value. For these reasons, the usefulness of the DCF method significantly diminishes as market prices and book values diverge.

Further, there is no reason to expect that investors would necessarily value utility stocks equal to their book value. In fact, it is rare that utility stocks trade at book value. Moreover, high market-to-book ratios may be reflective of general market sentiment. Were regulators to use the results of a DCF model that fails to produce the required return when applied to an original cost rate base, they would penalize a company with high market-to-book ratios. This clearly would penalize a regulated firm and its investors that purchased the stock at its current price. When investor expectations are not fulfilled, the market price per share will decline and a new, different equity cost rate would be indicated from the lower price per share. This condition suggests that the current price would be subject to disequilibrium and would not allow a reasonable calculation of the cost of equity. This situation would also create a serious disincentive for management initiative and efficiency. Within that framework, a perverse set of goals and rewards would result, i.e., a high authorized rate of return in a rate case would be the reward for poor financial performance, while low rates of return would be the reward for good financial performance.

Dividend Yield

The historical annual dividend yields for the Alliance RTO Group are shown on Schedule 3. The 1995-1999 five-year average dividend yield was 5.6% for the Alliance RTO Group. As shown on Schedule 4, the 1995-1999 five-year average dividend yield was 4.8% for the Gas Distribution Group. The monthly dividend yields for the past twelve months are shown graphically on Schedule 6. These dividend yields reflect an adjustment to the month-end closing prices to remove the pro rata accumulation of the quarterly dividend amount since the last ex-dividend date.

The ex-dividend date usually occurs two business days before the record date of the dividend (i.e., the date by which a shareholder must own the shares to be entitled to the dividend payment--usually about two to three weeks prior to the actual payment). During a quarter (here defined as 91 days), the price of a stock moves up rateably by the dividend amount as the ex-dividend date approaches. The stock's price then falls by the amount of the dividend on the ex-dividend date. Therefore, it is necessary to calculate the fraction of the quarterly dividend since the time of the last ex-dividend date and to remove that amount from the price. This adjustment reflects normal recurring pricing of stocks in the market, and establishes a price which will reflect the true yield on a stock.

A six-month average dividend yield has been used to recognize the prospective orientation of the ratesetting process as explained in the direct testimony. For the purpose of a DCF calculation, the average dividend yields must be adjusted to reflect the prospective nature of the dividend payments, i.e., the higher expected dividends for the future rather than the recent dividend payment annualized. An adjustment to the dividend yield component, when computed with annualized dividends, is required based upon investor expectation of quarterly dividend increases.

The procedure to adjust the average dividend yield for the expectation of a dividend increase during the initial investment period will be at a rate of one-half the growth component, developed below. The DCF equation, showing the quarterly dividend payments as $\boldsymbol{D_0}$, may be stated in this fashion:

$$K = \frac{D_0(1+g)^0 + D_0(1+g)^0 + D_0(1+g)^1 + D_0(1+g)^1}{P_0} + g$$

The adjustment factor, based upon one-half the expected growth rate developed in my direct testimony, will be 3.750% (7.50% x .5) for the Alliance RTO Group and 3.125% (6.25% x .5) for the Gas

Distribution Group, which assumes that two dividend payments will be at the expected higher rate during the initial investment period. Using the six-month average dividend yield as a base, the prospective (forward) dividend yield would be 4.76% (4.59% x 1.03750) for the Alliance RTO Group and 5.41% (5.25% x 1.03125) for the Gas Distribution Group.

Another DCF model that reflects the discrete growth in the quarterly dividend ***(D_0)*** is as follows:

$$K = \frac{D_0(1+g)^{.25} + D_0(1+g)^{.50} + D_0(1+g)^{.75} + D_0(1+g)^{1.00}}{P_0} + g$$

This procedure confirms the reasonableness of the forward dividend yield previously calculated. The quarterly discrete adjustment provides a dividend yield of 4.80% (4.59% x 1.04645) for the Alliance RTO Group and 5.45% (5.25% x 1.03877) for the Gas Distribution Group. The use of an adjustment is required for the periodic form of the DCF in order to properly recognize that dividends grow on a discrete basis.

In either of the preceding DCF dividend yield adjustments, there is no recognition for the compound returns attributed to the quarterly dividend payments. Investors have the opportunity to reinvest quarterly dividend receipts. Recognizing the compounding of the periodic quarterly dividend payments ***(D_0)***, results in a third DCF formulation: $k = \left[\left(1 + \frac{D_0}{P_0}\right)^4 - 1\right] + g$

This DCF equation provides no further recognition of growth in the quarterly dividend. Combining discrete quarterly dividend growth with quarterly compounding would provide the following DCF formulation, stating the quarterly dividend payments ***(D_0)***:

$$k = \left[\left(1 + \frac{D_0(1+g)^{.25}}{P_0}\right)^4 - 1\right] + g$$

A compounding of the quarterly dividend yield provides another procedure to recognize the necessity for an adjusted dividend yield. The unadjusted average quarterly dividend yield was 1.1475% (4.59% ÷ 4) for the Alliance RTO Group and 1.3125% (5.25% ÷ 4) for the Gas Distribution Group. The compound dividend yield would be 4.76% (1.011684^4 - 1) for the Alliance RTO Group and 5.44% (1.013325^4-1) for the Gas Distribution Group, recognizing quarterly dividend payments in a forward-looking manner. These dividend yields conform with investors' expectations in the context of reinvestment of their cash dividend.

For the Alliance RTO Group, a 4.77% forward-looking dividend yield is the average (4.76% + 4.80% + 4.76% = 14.32% ÷ 3) of the adjusted dividend yield using the form $D_0/P_0\ (1+.5g)$, the dividend yield recognizing discrete quarterly growth, and the quarterly compound dividend yield with discrete quarterly growth. For the Gas Distribution Group, the average adjusted dividend yield is 5.43% (5.41% + 5.45% + 5.44% = 16.30% ÷ 3).

Growth Rate

If viewed in its infinite form, the DCF model is represented by the discounted value of an endless stream of growing dividends. It would, however, require 100 years of future dividend payments so that the discounted value of those payments would equate to the present price so that the discount rate and the rate of return shown by the simplified Gordon form of the DCF model would be about the same. A century of dividend receipts represents an unrealistic investment horizon from almost any perspective. Because stocks are not held by investors forever, the growth in the share value (i.e., capital appreciation, or capital gains yield) is most relevant to investors' total return expectations. Hence, investor expected returns in the equity market are provided by capital appreciation of the investment as well as receipt of dividends. As such, the sale price of a stock can be viewed as a liquidating dividend which can be

discounted along with the annual dividend receipts during the investment holding period to arrive at the investor expected return.

In its constant growth form, the DCF assumes that with a constant return on book common equity and constant dividend payout ratio, a firm's earnings per share, dividends per share and book value per share will grow at the same constant rate, absent any external financing by a firm. Because these constant growth assumptions do not actually prevail in the capital markets, the capital appreciation potential of an equity investment is best measured by the expected growth in earnings per share. Since the traditional form of the DCF assumes no change in the price-earnings multiple, the value of a firm's equity will grow at the same rate as earnings per share. Hence, the capital gains yield is best measured by earnings per share growth using company-specific variables.

Investors consider both historical and projected data in the context of the expected growth rate for a firm. An investor can compute historical growth rates using compound growth rates or growth rate trend lines. Otherwise, an investor can rely upon published growth rates as provided in widely-circulated, influential publications. However, a traditional constant growth DCF analysis that is limited to such inputs suffers from the assumption of no change in the price-earnings multiple, i.e., that the value of a firm's equity will grow at the same rate as earnings. Some of the factors which actually contribute to investors' expectations of earnings growth and which should be considered in assessing those expectations, are: (i) the earnings rate on existing equity, (ii) the portion of earnings not paid out in dividends, (iii) sales of additional common equity, (iv) reacquisition of common stock previously issued, (v) changes in financial leverage, (vi) acquisitions of new business opportunities, (vii) profitable liquidation of assets, and (viii) repositioning of existing assets. The realities of the equity market regarding total return expectations, however, also reflect factors other than these inputs. Therefore, the DCF model contains overly restrictive

limitations when the growth component is stated in terms of earnings per share (the basis for the capital gains yield) or dividends per share (the basis for the infinite dividend discount model). In these situations, there is inadequate recognition of the capital gains yields arising from stock price growth which could exceed earnings or dividends growth.

To assess the growth component of the DCF, analysts' projections of future growth influence investor expectations as explained above. One influential publication is The Value Line Investment Survey which contains estimated future projections of growth. The Value Line Investment Survey provides growth estimates which are stated within a common economic environment for the purpose of measuring relative growth potential. The basis for these projections is the Value Line 3 to 5 year hypothetical economy. The Value Line hypothetical economic environment is represented by components and subcomponents of the National Income Accounts which reflect in the aggregate assumptions concerning the unemployment rate, manpower productivity, price inflation, corporate income tax rate, high-grade corporate bond interest rates, and Fed policies. Individual estimates begin with the correlation of sales, earnings and dividends of a company to appropriate components or subcomponents of the future National Income Accounts. These calculations provide a consistent basis for the published forecasts. Value Line's evaluation of a specific company's future prospects are considered in the context of specific operating characteristics that influence the published projections. Of particular importance for regulated firms, Value Line considers the regulatory quality, rates of return recently authorized, the historic ability of the firm to actually experience the authorized rates of return, the firm's budgeted capital spending, the firm's financing forecast, and the dividend payout ratio. The wide circulation of this source and frequent reference to Value Line in financial circles indicate that this publication has an influence on investor judgment with regard to expectations for the future.

There are other sources of earnings growth forecasts. One of these sources is the Institutional Brokers Estimate System ("IBES"). The IBES service provides data on consensus earnings per share forecasts and five-year earnings growth rate estimates. The earnings estimates are obtained from financial analysts at brokerage research departments and from institutions whose securities analysts are projecting earnings for companies in the IBES universe of companies. The IBES forecasts provide the basis for the earnings estimates published in the S&P Earnings Guide which covers 3000 publicly traded stocks. Other services that tabulate earnings forecasts and publish them are Zacks Investment Research, First Call/Thomson Financial, and Market Guide. As with the IBES forecasts, Zacks, First Call/Thomson and Market Guide provide consensus forecasts collected from analysts for most publically traded companies.

In each of these publications, forecasts of earnings per share for the current and subsequent year receive prominent coverage. That is to say, IBES, Zacks, First Call/Thomson, Market Guide, and Value Line show estimates of current-year earnings and projections for the next year. While the DCF model typically focusses upon long-run estimates of growth, stock prices are clearly influenced by current and near-term earnings prospects. Therefore, the near-term earnings per share growth rates should also be factored into a growth rate determination.

Although forecasts of future performance are investor influencing[2], equity investors may also rely upon the observations of past performance. Investors' expectations of future growth rates may be determined, in part, by an analysis of historical growth rates. It is apparent that any serious investor would advise himself/herself of historical performance prior to taking an investment position in a firm. Earnings

2 As shown in a National Bureau of Economic Research monograph by John G. Cragg and Burton G. Malkiel, Expectations and the Structure of Share Prices, University of Chicago Press 1982.

per share and dividends per share represent the principal financial variables which influence investor growth expectations.

Other financial variables are sometimes considered in rate case proceedings. For example, a company's internal growth rate, derived from the return rate on book common equity and the related retention ratio, is sometimes considered. This growth rate measure is represented by the Value Line forecast "*B*x*R*" shown on Schedule 8. Internal growth rates are often used as a proxy for book value growth. Unfortunately, this measure of growth is often not reflective of investor-expected growth. This is especially important when there is an indication of a prospective change in dividend payout ratio, earned return on book common equity, change in market-to-book ratios or other fundamental changes in the character of the business. Nevertheless, I have also shown the historical and projected growth rates in book value per share and internal growth rates.

INTEREST RATES

Interest rates can be viewed in their traditional nominal terms (i.e., the stated rate of interest) and in real terms (i.e., the stated rate of interest less the expected rate of inflation). Absent consideration of inflation, the real rate of interest is determined generally by supply factors which are influenced by investors willingness to forego current consumption (i.e., to save) and demand factors that are influenced by the opportunities to derive income from productive investments. Added to the real rate of interest is compensation required by investors for the inflationary impact of the declining purchasing power of their income received in the future. Although interest rates are clearly influenced by the changing annual rate of inflation, it is important to note that the expected rate of inflation that is reflected in current interest rates may be quite different than the prevailing rate of inflation.

Rates of interest also vary by the type of interest bearing instrument. Investors require compensation for the risk associated with the term of the investment and the risk of default. The risk associated with the term of the investment is usually shown by the yield curve, i.e., the difference in rates across maturities. The typical structure is represented by a positive yield curve which provides progressively higher interest rates as the maturities are lengthened. Flat (i.e., relatively level rates across maturities) or inverted (i.e., higher short-term rates than long-term rates) yield curves occur less frequently.

The risk of default is typically associated with the creditworthiness of the borrower. Differences in this regard can be traced to the credit quality ratings assigned by the bond rating agencies, such as Moody's Investors Service, Inc. and Standard & Poor's Corporation. Obligations of the United States Treasury are usually considered to be free of default risk, and hence reflect only the real rate of interest, compensation for expected inflation, and maturity risk. The Treasury has been issuing inflation-indexed notes which automatically provide compensation to investors for future inflation, thereby providing a lower

current yield on these issues.

Interest Rate Environment

Federal Reserve Board ("Fed") policy actions which impact directly short-term interest rates also substantially affect investor sentiment in long-term fixed-income securities markets. In this regard, the Fed has often pursued policies designed to build investor confidence in the fixed-income securities market. Formative Fed policy has had a long history, as exemplified by the historic 1951 Treasury-Federal Reserve Accord, and more recently, deregulation within the financial system which increased the level and volatility of interest rates. The Fed has indicated that it will follow a monetary policy designed to promote noninflationary economic growth.

As background to the recent levels of interest rates, history shows that the Fed began a series of moves toward lower short-term interest rates in mid-1990 -- at the outset of the last recession. Monetary policy was influenced at that time by (i) steps taken to reduce the federal budget deficit, (ii) slowing economic growth, (iii) rising unemployment, and (iv) measures intended to avoid a credit crunch. Thereafter, the Federal government initiated several bold proposals to deal with future borrowings by the Treasury. With lower expected federal budget deficits and reduced Treasury borrowings, together with limitations on the supply of new 30-year Treasury bonds, long-term interest rates declined to a twenty-year low, reaching a trough of 5.78% in October 1993.

On February 4, 1994, the Fed began a series of increases in the Fed Funds rate (i.e., the interest rate on excess overnight bank reserves). The initial increase represented the first rise in short-term interest rates in five years. The series of seven increases doubled the Fed Funds rate to 6%. The increases in short-term interest rates also caused long-term rates to move up, continuing a trend which began in the fourth quarter of 1993. The cyclical peak in long-term interest rates was reached on November 7 and 14, 1994 when 30-year Treasury bonds attained an 8.16% yield. Thereafter, long-term Treasury bond

yields generally declined.

Beginning in mid-February 1996, long-term interest rates moved upward from their previous lows. After initially reaching a level of 6.75% on March 15, 1996, long-term interest rates continued to climb and reached a peak of 7.19% on July 5 and 8, 1996. For the period leading up to the 1996 Presidential election, long-term Treasury bonds generally traded within this range. After the election, interest rates moderated, returning to a level somewhat below the previous trading range. Thereafter, in December 1996, interest rates returned to a range of 6.5% to 7.0%, which existed for much of 1996.

On March 25, 1997, the Fed decided to tighten monetary conditions through a one-quarter percentage point increase in the Fed Funds rate. This tightening increased the Fed Funds rate to 5.5%, although the discount rate was not changed and remained at 5%. In making this move, the Fed stated that it was concerned by persistent strength of demand in the economy, which it feared would increase the risk of inflationary imbalances that could eventually interfere with the long economic expansion.

In the fourth quarter of 1997, the yields on Treasury bonds began to decline rapidly in response to an increase in demand for Treasury securities caused by a flight to safety triggered by the currency and stock market crisis in Asia. Liquidity provided by the Treasury market makes these bonds an attractive investment in times of crisis. This is because Treasury securities encompass a very large market which provides ease of trading and carry a premium for safety. During the fourth quarter of 1997, Treasury bond yields pierced the psychologically important 6% level for the first time since 1993.

Through the first half of 1998, the yields on long-term Treasury bonds fluctuated within a range of about 5.6% to 6.1% reflecting their attractiveness and safety. In the third quarter of 1998, there was further deterioration of investor confidence in global financial markets. This loss of confidence followed the moratorium (i.e., default) by Russia on its sovereign debt and fears associated with problems in Latin America. While not significant to the global economy in the aggregate, the August 17 default by Russia

had a significant negative impact on investor confidence, following earlier discontent surrounding the crisis in Asia. These events subsequently led to a general pull back of risk-taking as displayed by banks growing reluctance to lend, worries of an expanding credit crunch, lower stock prices, and higher yields on bonds of riskier companies. These events contributed to the failure of the hedge fund, Long-Term Capital Management.

In response to these events, the Fed cut the Fed Funds rate just prior to the mid-term Congressional elections. The Fed's action was based upon concerns over how increasing weakness in foreign economies would affect the U.S. economy. As recently as July 1998, the Fed had been more concerned about fighting inflation than the state of the economy. The initial rate cut was the first of three reductions by the Fed. Thereafter, the yield on long-term Treasury bonds reached a 30-year low of 4.70% on October 5, 1998. Long-term Treasury yields below 5% had not been seen since 1967. Unlike the first rate cut that was widely anticipated, the second rate reduction by the Fed was a surprise to the markets. A third reduction in short-term interest rates occurred in November 1998 when the Fed reduced the discount rate to 4.5% and the Fed Funds rate to 4.75%.

All of these events prompted an increase in the prices for Treasury bonds, which led to the low yields described above. Another factor that contributed to the decline in yields on long-term Treasury bonds was a reduction in the supply of new Treasury issues coming to market due to the Federal budget surplus -- the first in nearly 30 years. The dollar amount of Treasury bonds being issued declined by 30% in two years thus resulting in higher prices and lower yields. In addition, rumors of some struggling hedge funds unwinding their positions further added to the gains in Treasury bond prices.

The financial crisis that spread from Asia to Russia and to Latin America pushed nervous investors from stocks into Treasury bonds, thus increasing demand for bonds, just when supply was slowing. There was also a move from corporate bonds to Treasury bonds to take advantage of appreciation in the

Treasury market. This resulted in a certain amount of exuberance for Treasury bond investments that formerly was reserved for the stock market. Moreover, yields in the fourth quarter of 1998 became extremely volatile as shown by Treasury yields that fell from 5.10% on September 29 to 4.70 percent on October 5, and thereafter returned to 5.10% on October 13. A decline and rebound of 40 basis points in Treasury yields in a two-week time frame is remarkable.

Beginning in mid-1999, the Fed raised interest rates on six occasions, reversing its actions in the fall of 1998. On June 30, 1999, August 24, 1999, November 16, 1999 and February 2, 2000, March 21, 2000, and May 16, 2000, the Fed raised the Fed Funds rate to 6.50%. This brought the Fed Funds to its highest level since 1991, and was 175 basis points higher than the level that occurred at the height of the Asian currency and stock market crisis. Similarly, the Fed increased the discount rate to 6.00% with its actions on August 24, 1999, November 16, 1999, February 2, 2000, March 21, 2000, and May 16, 2000. This brought the discount rate up by one and one-half percentage points from its low in the fourth quarter of 1998. At the time, these actions were taken in response to more normally functioning financial markets, tight labor markets, and a reversal of the monetary ease that was required earlier in response to the global financial market turmoil.

As the year 2000 drew to a close, economic activity slowed and consumer confidence began to weaken. In two steps at the beginning and at the end of January 2001, the Fed reduced the Fed Funds rate by one percentage point. These actions brought the Fed Funds rate to 5.50% and the discount rate was also lowered to 5.00%. The Fed described its actions as “a rapid and forceful response of monetary policy” to eroding consumer and business confidence exemplified by weaker retail sales and business spending on capital equipment and cut backs in manufacturing production. Subsequently, on March 20, 2001, April 18, 2001, and May 15, 2001 the Fed again lowered the Fed Funds and discount rate in three 50 basis points decrements. These actions took the Fed Funds rate to 4.0% and the discount rate to

3.5%. The Fed observed: "The erosion in current and prospective profitability, in combination with considerable uncertainty about the business outlook, seems likely to hold down capital spending going forward. This potential restraint, together with the possible effects of earlier reductions in equity wealth on consumption and the risk of slower growth abroad, continues to weigh on the economy." In taking its action, the Fed concluded that, "…the risks are weighted mainly toward conditions that may generate economic weakness in the foreseeable future."

Public Utility Bond Yields

The Risk Premium analysis of the cost of equity is represented by the combination of a firm's borrowing rate for long-term debt capital plus a premium that is required to reflect the additional risk associated with the equity of a firm as explained in IP Exhibit 4.8. Due to the senior nature of the long-term debt of a firm, its cost is lower than the cost of equity due to the prior claim which lenders have on the earnings and assets of a corporation.

As a generalization, all interest rates track to varying degrees of the benchmark yields established by the market for Treasury securities. Public utility bond yields usually reflect the underlying Treasury yield associated with a given maturity plus a spread to reflect the specific credit quality of the issuing public utility. Market sentiment can also have an influence on the spreads as described below. The spread in the yields on public utility bonds and Treasury bonds varies with market conditions, as does the relative level of interest rates at varying maturities shown by the yield curve.

Pages 1 and 2 of Schedule 11 provide the recent history of long-term (i.e., maturities as close as possible to 30 years) public utility bond yields for each of the "investment grades" (i.e., Aaa, Aa, A and Baa). The top four rating categories shown on Schedule 11 are generally regarded as eligible for bank investments under commercial banking regulations. These investment grades are distinguished from "junk" bonds which have ratings of Ba and below. During the four quarters ended March 2001, the average of

the daily yields for A rated public utility bonds was 8.11% and the median was 8.14%. The overall range of yields was 8.87% to 7.59%, which provided a midpoint yield of 8.23%. The distribution of the yields was: 33% of the daily yields were less than 8.00%, 59% of the daily yields were 8.00% to 8.49%, and 8% of the daily yields were 8.50% and above.

A relatively long history of the spread between the yields on long-term A rated public utility bonds and long-term Treasury bonds is shown on page 3 of Schedule 9. There, it is shown that the spread in these yields declined after the 1987 stock market crash. Those spreads stabilized at about the one percentage point level for the years 1992 through 1997. With the aversion to risk and flight to quality described earlier, a significant widening of the spread in the yields between corporate (e.g., public utility) and Treasury bonds developed in 1998, after an initial widening of the spread that began in the fourth quarter of 1997. The significant widening of spreads in 1998 was unexpected by some technically savvy investors, as shown by the debacle at the Long-Term Capital Management hedge fund. When Russia defaulted its debt on August 17, some investors had to cover short positions when Treasury prices spiked upward. Short covering by investors that guessed wrong on the relationship between corporate and Treasury bonds also contributed to run-up in Treasury bond prices by increasing the demand for them. This helped to contribute to a widening of the spreads between corporate and Treasury bonds.

As indicated by the dynamics described earlier, there has been a disconnection from the previous relationship between the yields on corporate debt and Treasury bonds. As shown on page 3 of Schedule 9 the spread in yields between A rated public utility bonds and 30-year Treasury bonds widened from about one percentage point prior to 1998 to 1.46% in 1998, 1.75% in 1999, and 2.30% in 2000. In essence, the cost of corporate debt and equity has disconnected from the yields on long-term Treasury bonds due to a general aversion to risk and the shrinking supply of long-term Treasury bonds. As shown by the data presented graphically on page 4 of Schedule 9, the interest rate spread between the yields on

30-year Treasury bonds and A rated public utility bonds settled at about 2.30 percentage points in the fourth quarter of 2000 and first quarter of 2001. This situation continues to point to the high cost of corporate capital vis-à-vis the yield on Treasury obligations.

Risk-Free Rate of Return in the CAPM

Regarding the risk-free rate of return, pages 3 and 4 of Schedule 11 provides the yields on the broad spectrum of Treasury Notes and Bonds. Some practitioners of the CAPM would advocate the use of short-term treasury yields (and some would argue for the yields on 91-day Treasury Bills). Other advocates of the CAPM would advocate the use of longer-term treasury yields as the best measure of a risk-free rate of return. As Ibbotson has indicated:

> The Cost of Capital in a Regulatory Environment. When discounting cash flows projected over a long period, it is necessary to discount them by a long-term cost of capital. Additionally, regulatory processes for setting rates often specify or suggest that the desired rate of return for a regulated firm is that which would allow the firm to attract and retain debt and equity capital over the long term. Thus, the long-term cost of capital is typically the appropriate cost of capital to use in regulated ratesetting. (Stocks, Bonds, Bills and Inflation - 1992 Yearbook, pages 118-119)

As indicated above, 30-year Treasury bond yields represent the correct measure of the risk-free rate of return in the traditional CAPM. Very short term yields on Treasury bills should be avoided for several reasons. First, rates should be set on the basis of financial conditions that will exist during the effective period of the proposed rates. Second, 91-day Treasury bill yields are more volatile than longer-term yields and are greatly influenced by Fed monetary policy, political, and economic situations. Moreover, Treasury bill yields have been shown to be empirically inadequate for the CAPM. Some advocates of the theory would argue that the risk-free rate of return in the CAPM should be derived from quality long-term corporate bonds.

During the four quarters ended March 2001, the yield on 30-year Treasury bonds was shown by

the following measures of central tendency: 5.73% as the average, 5.75% as the median, and 5.75% as the midpoint of the highest (6.25%) and lowest (5.25%) daily yields. The associated distribution of the yields was: 22% of the daily yields were less than 5.49%, 69% of the daily yields were 5.50% to 5.99%, and 9% of the daily yields were 6.00% and above.

RISK PREMIUM ANALYSIS

Determination of the cost of equity requires recognition of the risk premium required by common equities over long-term corporate bond yields. In the case of senior capital, a company contracts for the use of long-term debt capital at a stated coupon rate for a specific period of time and in the case of preferred stock capital at a stated dividend rate, usually with provision for redemption through sinking fund requirements. In the case of senior capital, the cost rate is known with a high degree of certainty because the payment for use of this capital is a contractual obligation, and the future schedule of payments is known. In essence, the investor-expected cost of senior capital is equal to the realized return over the entire term of the issue, absent default.

The cost of equity, on the other hand, is not fixed, but rather varies with investor perception of the risk associated with the common stock. Because no precise measurement exists as to the cost of equity, informed judgment must be exercised through a study of various market factors which motivate investors to purchase common stock. In the case of common equity, the realized return rate may vary significantly from the expected cost rate due to the uncertainty associated with earnings on common equity. This uncertainty highlights the added risk of a common equity investment.

As one would expect from traditional risk and return relationships, the cost of equity is affected by expected interest rates. Yields on long-term corporate bonds traditionally consist of a real rate of return without regard to inflation, an increment to reflect investor perception of expected future inflation, the investment horizon shown by the term of the issue until maturity, and the credit risk associated with each rating category.

The Risk Premium approach recognizes the required compensation for the more risky common equity over the less risky secured debt position of a lender. The cost of equity stated in

terms of the familiar risk premium approach is:

$$k = i + RP$$

where, the cost of equity *("**k**")* is equal to the interest rate on long-term corporate debt *("**i**")*, plus an equity risk premium *("**RP**")* which represents the additional compensation for the riskier common equity.

Equity Risk Premium

The equity risk premium is determined as the difference in the rate of return on debt capital and the rate of return on common equity. Because the common equity holder has only a residual claim on earnings and assets, there is no assurance that achieved returns on common equities will equal expected returns. This is quite different from returns on bonds, where the investor realizes the expected return during the entire holding period, absent default. It is for this reason that common equities are always more risky than senior debt securities. There are investment strategies available to bond portfolio managers that immunize bond returns against fluctuations in interest rates because bonds are redeemed through sinking funds or at maturity, whereas no such redemption is mandated for public utility common equities.

It is well recognized that the expected return on more risky investments will exceed the required yield on less risky investments. Neither the possibility of default on a bond nor the maturity risk detracts from the risk analysis, because the common equity risk rate differential (i.e., the investor-required risk premium) is always greater than the return components on a bond. It should also be noted that the investment horizon is typically long run for both corporate debt and equity, and that the risk of default (i.e., corporate bankruptcy) is a concern to both debt and equity investors. Thus, the required yield on a bond provides a benchmark or starting point with which to track and measure the cost rate of common equity

capital. There is no need to segment the bond yield according to its components, because it is the total return demanded by investors that is important for determining the risk rate differential for common equity. This is because the complete bond yield provides the basis to determine the differential, and as such, consistency requires that the computed differential must be applied to the complete bond yield when applying the risk premium approach. To apply the risk rate differential to a partial bond yield would result in a misspecification of the cost of equity because the computed differential was initially determined by reference to the entire bond return.

The risk rate differential between the cost of equity and the yield on long-term corporate bonds can be determined by reference to a comparison of holding period returns (here defined as one year) computed over long time spans. This analysis assumes that over long periods of time investors' expectations are on average consistent with rates of return actually achieved. Accordingly, historical holding period returns must not be analyzed over an unduly short period because near-term realized results may not have fulfilled investors' expectations. Moreover, specific past period results may not be representative of investment fundamentals expected for the future. This is especially apparent when the holding period returns include negative returns which are not representative of either investor requirements of the past or investor expectations for the future. The short-run phenomenon of unexpected returns (either positive or negative) demonstrates that an unduly short historical period would not adequately support a risk premium analysis. It is important to distinguish between investors' motivation to invest, which encompass positive return expectations, and the knowledge that losses can occur. No rational investor would forego payment for the use of capital, or expect loss of principle, as a basis for investing. Investors will hold cash rather than invest with the expectation of a loss.

Within these constraints, page 1 of Schedule 10 provides the historical holding period returns for

the S&P Public Utility Index which has been independently computed and the historical holding period returns for the S&P Composite Index which have been reported in Stocks, Bonds, Bills and Inflation published by Ibbotson & Associates. The tabulation begins with 1928 because January 1928 is the earliest monthly dividend yield for the S&P Public Utility Index. I have considered all reliable data for this study to avoid the introduction of a particular bias to the results. The measurement of the common equity return rate differential is based upon actual capital market performance using realized results. As a consequence, the underlying data for this risk premium approach can be analyzed with a high degree of precision. Informed professional judgment is required only to interpret the results of this study, but not to quantify the component variables.

The risk rate differentials for all equities, as measured by the S&P Composite, are established by reference to long-term corporate bonds. For public utilities, the risk rate differentials are computed with the S&P Public Utilities as compared with public utility bonds.

The measurement procedure used to identify the risk rate differentials consisted of arithmetic means, geometric means, and medians for each series. Measures of central tendency of the results from the historical periods provide the best indication of representative rates of return. In regulated ratesetting, the correct measure of the equity risk premium is the arithmetic mean because a utility must expect to earn its cost of capital in each year in order to provide investors with their long-term expectations. In other contexts, such as pension determinations, compound rates of return, as shown by the geometric means, may be appropriate. The median returns are also appropriate in ratesetting because they are a measure of the central tendency of a single period rate of return. Median values have also been considered in this analysis because they provide a return which divides the entire series of annual returns in half and are representative of a return that symbolizes, in a meaningful way, the central tendency of all annual returns

contained within the analysis period. Medians are regularly included in many investor-influencing publications.

As previously noted, the arithmetic mean provides the appropriate point estimate of the risk premium. As further explained in IP Exhibit 4.9, the long-term cost of capital in rate cases requires the use of the arithmetic means. To supplement my analysis, I have also used the rates of return taken from the geometric mean and median for each series to provide the bounds of the range to measure the risk rate differentials. This further analysis shows that when selecting the midpoint from a range established with the geometric means and medians, the arithmetic mean is indeed a reasonable measure for the long-term cost of capital. For the years 1928 through 2000, the risk premiums for each class of equity are:

	S&P Composite	S&P Public Utilities
Arithmetic Mean	6.66%	5.90%
Geometric Mean	5.05%	3.96%
Median	12.51%	6.81%
Midpoint of Range	8.78%	5.39%
Average	7.72%	5.65%

The empirical evidence suggests that the common equity risk premium is higher for the S&P Composite Index compared to the S&P Public Utilities.

If, however, specific historical periods were also analyzed in order to match more closely historical fundamentals with current expectations, the results provided on page 2 of Schedule 10 should also be considered. One of these sub-periods included the 49-year period, 1952-2000. These years follow the historic 1951 Treasury-Federal Reserve Accord which affected monetary policy and the market for government securities.

A further investigation was undertaken to determine whether realignment has taken place subsequent to the historic 1973 Arab Oil embargo and during the deregulation of the financial markets. In each case, the public utility risk premiums were computed by using the arithmetic mean, and the geometric means and medians to establish the range shown by those values. The time periods covering the more recent periods 1974 through 2000 and 1979 through 2000 contain events subsequent to the initial oil shock and the advent of monetarism as Fed policy, respectively. For the 49-year, 27-year and 22-year periods, the public utility risk premiums were 6.77%, 6.53%, and 6.89% respectively, as shown by the average of the specific point-estimates and the midpoint of the ranges provided on page 2 Schedule 10.

CAPITAL ASSET PRICING MODEL

Modern portfolio theory provides a theoretical explanation of expected returns on portfolios of securities. The Capital Asset Pricing Model ("CAPM") attempts to describe the way prices of individual securities are determined in efficient markets where information is freely available and is reflected instantaneously in security prices. The CAPM states that the expected rate of return on a security is determined by a risk-free rate of return plus a risk premium which is proportional to the non-diversifiable (or systematic) risk of a security.

The CAPM theory has several unique assumptions that are not common to most other methods used to measure the cost of equity. As with other market-based approaches, the CAPM is an expectational concept. There has been significant academic research conducted that found that the empirical market line, based upon historical data, has a less steep slope and higher intercept than the theoretical market line of the CAPM. For equities with a beta less than 1.0, such as utility common stocks, the CAPM theoretical market line will underestimate the realistic expectation of investors in comparison with the empirical market line which shows that the CAPM may potentially misspecify investors' required return.

The CAPM considers changing market fundamentals in a portfolio context. The balance of the investment risk, or that characterized as unsystematic, must be diversified. Some argue that diversifiable (unsystematic) risk is unimportant to investors. But this contention is not completely justified because the business and financial risk of an individual company, including regulatory risk, are widely discussed within the investment community and therefore influence investors in regulated firms. In addition, I note that the CAPM assumes that through portfolio diversification, investors will minimize the effect of the unsystematic (diversifiable) component of investment risk. Because it is not known whether the average investor holds

a well-diversified portfolio, the CAPM must also be used with other models of the cost of equity.

To apply the traditional CAPM theory, three inputs are required: the beta coefficient *("**ß**")*, a risk-free rate of return *("**Rf**")*, and a market premium *("**Rm - Rf**")*. The cost of equity stated in terms of the CAPM is:

$$k = Rf + ß\,(Rm - Rf)$$

As previously indicated, it is important to recognize that the academic research has shown that the security market line was flatter than that predicted by the CAPM theory and it had a higher intercept than the risk-free rate. These tests indicated that for portfolios with betas less than 1.0, the traditional CAPM would understate the return for such stocks. Likewise, for portfolios with betas above 1.0, these companies had lower returns than indicated by the traditional CAPM theory. Once again, CAPM assumes that through portfolio diversification investors will minimize the effect of the unsystematic (diversifiable) component of investment risk. Therefore, the CAPM must also be used with other models of the cost of equity, especially when it is not known whether the average public utility investor holds a well-diversified portfolio.

Beta

The beta coefficient is a statistical measure which attempts to identify the non-diversifiable (systematic) risk of an individual security and measures the sensitivity of rates of return on a particular security with general market movements. Under the CAPM theory, a security that has a beta of 1.0 should theoretically provide a rate of return equal to the return rate provided by the market. When employing stock price changes in the derivation of beta, a stock with a beta of 1.0 should exhibit a movement in price which would track the movements in the overall market prices of stocks. Hence, if a particular investment has a beta of 1.0, a one percent increase in the return on the market will result, on

average, in a one percent increase in the return on the particular investment. An investment which has a beta less than 1.0 is considered to be less risky than the market.

The beta coefficient *("ß")*, the one input in the CAPM application which specifically applies to an individual firm, is derived from a statistical application which regresses the returns on an individual security (dependent variable) with the returns on the market as a whole (independent variable). The beta coefficients for utility companies typically describe a small proportion of the total investment risk because the coefficients of determination (R^2) are low.

Page 1 of Schedule 11 provides the adjusted betas published by Value Line. By way of explanation, the Value Line beta coefficient is derived from a "straight regression" based upon the percentage change in the weekly price of common stock and the percentage change weekly of the New York Stock Exchange Composite Average using a five-year period. The raw historical beta is adjusted by Value Line for the measurement effect resulting in overestimates in high beta stocks and underestimates in low beta stocks. Value Line then rounds its betas to the nearest .05 increment.Value Line does not consider dividends in the computation of their betas.

Market Premium

The final element necessary to apply the CAPM is the market premium. The market premium by definition is the rate of return on the total market less the risk-free rate of return *("Rm - Rf")*. In this regard, the market premium in the CAPM has been calculated from the total return on the market of equities using forecast and historical data. The future market return is established with forecasts by Value Line using estimated dividend yields and capital appreciation potential.

With regard to the forecast data, I have relied upon the Value Line forecasts of capital appreciation and the dividend yield on the 1,700 stocks in the Value Line Survey. According to the

March 30, 2001, edition of The Value Line Investment Survey Summary and Index (see page 6 of Schedule 11), the total return on the universe of Value Line equities is:

	Dividend Yield	+	Median Appreciation Potential	=	Median Total Return
As of March 30, 2001	2.1%	+	17.41%[1]	=	19.51%

The tabulation shown above provides the dividend yield and capital gains yield of the companies followed by Value Line. With the 19.51% forecast market return and the 5.25% risk-free rate of return, a 14.26% (19.51% - 5.25%) market premium would be indicated using forecast market data.

With regard to the historical data, I provided the rates of return from long-term historical time periods that have been widely circulated among the investment and academic community over the past several years, as shown on page 7 of Schedule 11. These data are published by Ibbotson Associates in its Stocks, Bonds, Bills and Inflation ("SBBI"). From the data provided on page 7 of Schedule 11, I calculate a market premium using the common stock arithmetic mean returns of 13.0% less government bond arithmetic mean returns of 5.7%. For the period 1926-2000, the market premium was 7.3% (13.0% - 5.7%). I should note that the arithmetic mean must be used in the CAPM because it is a single period model. It is further confirmed by Ibbotson who has indicated:

> *Arithmetic Versus Geometric Differences*
> For use as the expected equity risk premium in the CAPM, the *arithmetic* or *simple difference* of the *arithmetic* means of stock market returns and riskless rates is the relevant number. This is because the CAPM is an additive model where the cost of capital is the sum of its parts. Therefore, the CAPM expected equity risk premium must be derived by arithmetic, *not geometric*, subtraction.

1 The estimated median appreciation potential is forecast to be 90% for 3 to 5 years hence. The annual capital gains yield at the midpoint of the forecast period is 17.41% (i.e., 1.90^{25}-1).

Arithmetic Versus Geometric Means

> The expected equity risk premium should always be calculated using the arithmetic mean. The arithmetic mean is the rate of return which, when compounded over multiple periods, gives the mean of the probability distribution of ending wealth values…. This makes the arithmetic mean return appropriate for computing the cost of capital. The discount rate that equates expected (mean) future values with the present value of an investment is that investment's cost of capital. The logic of using the discount rate as the cost of capital is reinforced by noting that investors will discount their (mean) ending wealth values from an investment back to the present using the arithmetic mean, for the reason given above. They will therefore require such an expected (mean) return prospectively (that is, in the present looking toward the future) to commit their capital to the investment. (Stocks, Bonds, Bills and Inflation - 1996 Yearbook, pages 153-154)

For the CAPM, a market premium of 10.78% (7.3% + 14.26% = 21.56% ÷ 2) would be reasonable which is the average of the 7.3% using historical data and a market premium of 14.26% using forecasts.

COMPARABLE EARNINGS APPROACH

In order to identify the appropriate return on equity for a public utility, it is necessary to analyze returns experienced by other firms within the context of the Comparable Earnings standard. Returns for utility companies have not been used for this purpose so as to avoid the circularity that arises from using regulatory influenced returns to determine a regulated return. As such, the firms selected for the Comparable Earnings approach should be companies whose prices are not subject to cost-based price ceilings (i.e., non-regulated firms) so that circularity is avoided. Because regulated firms must compete with non-regulated firms in the capital markets, it is appropriate, if not necessary, to view the returns experienced by firms which operate in competitive markets. One must keep in mind that the rates of return for non-regulated firms represent results on book value actually achieved or expected to be achieved because the starting point of the calculation is the actual experience of companies that are not subject to rate regulation. Hence, the results of the Comparable Earnings method can be applied directly to an original cost rate base because the nature of the analysis relates to book value. As such, the Comparable Earnings approach is not susceptible to the potential misspecification associated with market models when prices and book values diverge significantly.

As established in the Hope case:

> [T]he return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks. That return, moreover, should be sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain its credit and to attract capital.

Therefore, it is important to identify the returns earned by firms which compete for capital with public utilities. This can be accomplished by analyzing the returns for non-regulated firms which are subject to the competitive forces of the marketplace.

There are two avenues available to implement the Comparable Earnings approach. One method would involve the selection of another industry (or industries) with comparable risks to the public utility in question, and the results for all companies within that industry would serve as a benchmark. The second approach requires the selection of parameters which represent similar risk traits for the public utility and the comparable risk companies. Using this approach, the business lines of the comparable companies become unimportant. The latter approach is preferable with the further qualification that the comparable risk companies exclude regulated firms. As such, this approach to Comparable Earnings avoids the circular reasoning implicit in the use of the achieved earnings/book ratios of other regulated firms. Rather, it provides an indication of an earnings rate derived from non-regulated companies which are subject to competition in the marketplace and not rate regulation. Because regulation is a substitute for competitively determined prices, the returns realized by non-regulated firms with comparable risks to a pipeline provide useful insight into a fair rate of return. This is because returns realized by non-regulated firms have become increasingly relevant with the trend toward increased risk throughout the public utility business. Moreover, the rate of return for a regulated public utility must be competitive with returns available on investments in other enterprises having corresponding risks, especially in a more global economy.

To identify the comparable risk companies, the Value Line Investment Survey for Windows was used to screen for firms of comparable risks. The Value Line Investment Survey for Windows includes data on approximately 1600 firms. Excluded from the selection process were companies with a foreign exchange listing and master limited partnerships (MLPs).

Value Line's risk analysis of these firms includes a wide range of financial and market variables, including nine items that provide ratings for each company. From these nine items, I removed one category dealing with industry performance because, under my approach, the particular business type is

not significant. In addition, I removed two categories dealing with estimates of current earnings and dividends because they are not useful for comparative purposes. The remaining six categories provide relevant measures to establish comparability. The definitions for each of the six criteria (from the Value Line Investment Survey - Subscriber Guide) follows:

Timeliness Rank

> The rank for a stock's probable relative market performance in the year ahead. Stocks ranked 1 (Highest) or 2 (Above Average) are likely to outpace the year-ahead market. Those ranked 4 (Below Average) or 5 (Lowest) are not expected to outperform most stocks over the next 12 months. Stocks ranked 3 (Average) will probably advance or decline with the market in the year ahead. Investors should try to limit purchases to stocks ranked 1 (Highest) or 2 (Above Average) for Timeliness.

Safety Rank

> A measure of potential risk associated with individual common stocks rather than large diversified portfolios (for which Beta is good risk measure). Safety is based on the stability of price, which includes sensitivity to the market (see Beta) as well as the stock's inherent volatility, adjusted for trend and other factors including company size, the penetration of its markets, product market volatility, the degree of financial leverage, the earnings quality, and the overall condition of the balance sheet. Safety Ranks range from 1 (Highest) to 5 (Lowest). Conservative investors should try to limit purchases to equities ranked 1 (Highest) or 2 (Above Average) for Safety.

Financial Strength

> The financial strength of each of the more than 1,600 companies in the VS II database is rated relative to all the others. The ratings range from A++ to C in nine steps. (For screening purposes, think of an A rating as "greater than" a B). Companies that have the best relative financial strength are given an A++ rating, indicating ability to weather hard times better than the vast majority of other companies. Those who don't quite merit the top rating are given an A+ grade, and so on. A rating as low as C++ is considered satisfactory. A rating of C+ is well below average, and C is reserved for companies with very serious financial problems. The ratings are based upon a computer analysis of a number of key

variables that determine (a) financial leverage, (b) business risk, and (c) company size, plus the judgment of Value Line's analysts and senior editors regarding factors that cannot be quantified across-the-board for companies. The primary variables that are indexed and studied include equity coverage of debt, equity coverage of intangibles, "quick ratio", accounting methods, variability of return, fixed charge coverage, stock price stability, and company size.

Price Stability Index

An index based upon a ranking of the weekly percent changes in the price of the stock over the last five years. The lower the standard deviation of the changes, the more stable the stock. Stocks ranking in the top 5% (lowest standard deviations) carry a Price Stability Index of 100; the next 5%, 95; and so on down to 5. One standard deviation is the range around the average weekly percent change in the price that encompasses about two thirds of all the weekly percent change figures over the last five years. When the range is wide, the standard deviation is high and the stock's Price Stability Index is low.

Beta

A measure of the sensitivity of the stock's price to overall fluctuations in the New York Stock Exchange Composite Average. A Beta of 1.50 indicates that a stock tends to rise (or fall) 50% more than the New York Stock Exchange Composite Average. Use Beta to measure the stock market risk inherent in any diversified portfolio of, say, 15 or more companies. Otherwise, use the Safety Rank, which measures total risk inherent in an equity, including that portion attributable to market fluctuations. Beta is derived from a least squares regression analysis between weekly percent changes in the price of a stock and weekly percent changes in the NYSE Average over a period of five years. In the case of shorter price histories, a smaller time period is used, but two years is the minimum. The Betas are periodically adjusted for their long-term tendency to regress toward 1.00.

Technical Rank

> A prediction of relative price movement, primarily over the next three to six months. It is a function of price action relative to all stocks followed by Value Line. Stocks ranked 1 (Highest) or 2 (Above Average) are likely to outpace the market. Those ranked 4 (Below Average) or 5 (Lowest) are not expected to outperform most stocks over the next six months. Stocks ranked 3 (Average) will probably advance or decline with the market. Investors should use the Technical and Timeliness Ranks as complements to one another.

In order to implement the Comparable Earnings approach, non-regulated companies were selected from the Value Line Investment Survey for Windows which have six categories of comparability designed to reflect the risk of the Alliance RTO Group and Gas Distribution Group. These screening criteria were used to establish a range as defined by the rankings of the component companies in the Alliance RTO Group and Gas Distribution Group. The items considered were: Timeliness Rank, Safety Ranking, Financial Strength, Price Stability, Value Line betas, and Technical Rank. The identities of companies comprising the Comparable Earnings group and their associated rankings within the ranges are identified on page 1 of Schedule 12 for the Alliance RTO Group and Gas Distribution Group.

Both historical realized returns and forecast returns for non-utility companies have been used in the Comparable Earnings approach. It is appropriate to consider a relatively long measurement period in the Comparable Earnings approach in order to cover conditions over an entire business cycle. A ten-year period (5 historical years and 5 projected years) is sufficient[1] to cover an average business cycle. The historical rate of return on book common equity was 19.6% using the average measure of central tendency and 15.5% using the median value as shown on page 2 of Schedule 12. The forecast rates of

1 For example, since 1854, there have been 30 business cycles having an average length of 51 months measured from trough to trough and 53 months measured from peak to peak. Hence, a 10-year measurement period in the Comparable Earnings approach is more than adequate to cover an average business cycle.

return as published by Value Line are shown by the 19.6% average and 16.5% median values also provided on page 2 of Schedule 12. Value Line data was relied upon because it provides a comprehensive basis for evaluating the risks of the comparable firms.

The average of the historical and forecast median rates of return is 16.00% (15.5% + 16.5% = 32.0% ÷ 2) and represents the Comparable Earnings result for this case. As to the returns calculated by Value Line for these companies, there is some downward bias in the figures shown on page 2 of Schedule 12 because Value Line computes the returns on year-end rather than average book value. If average book values had been employed, the rates of return would have been slightly higher. Nevertheless, these are the returns considered by investors when taking positions in these stocks. Finally, because many of the comparability factors, as well as the published returns, are used by investors for selecting stocks, and to the extent that investors rely on the Value Line service to gauge their returns, it is, therefore, an appropriate database for measuring comparable return opportunities.

IP Exhibit 4.11

ILLINOIS POWER COMPANY

Financial Exhibit

to Accompany

the Direct Testimony

of

Paul R. Moul, Managing Consultant
P. Moul & Associates

Exhibit No. IP-4.11

Illinois Power Company
Index of Schedules

Illinois Power Company
Cost of Capital Summary

Type of Capital	Ratios	Cost Rate	Weighted Cost Rate
Long-Term Debt	36.10%	7.27%	2.62%
Transitional Funding Instruments	17.21%	7.33%	1.26%
Short-Term Debt	4.18%	6.05%	0.25%
Preferred Stock, Non-tax Adv.	1.49%	5.05%	0.08%
Preferred Securities, Tax Adv.	3.09%	8.63%	0.27%
Common Equity	37.93%	12.50%	4.74%
Total	100.00%		9.22%

Indicated levels of fixed charge coverage assuming that the Company could actually achieve its overall cost of capital:

Pre-tax coverage of interest expense based upon a 39.67% composite federal and state income tax rate (12.39% ÷ 4.13%)	3.00 x
Post-tax coverage of interest expense (9.22% ÷ 4.13%)	2.23 x
Overall coverage of interest expense and preferred stock dividends (9.22% ÷ 4.48%)	2.06 x

Credit Quality Measures Excluding Transitional Funding Instruments

Type of Capital	Ratios	Cost Rate	Weighted Cost Rate
Long-Term Debt	43.60%	7.27%	3.17%
Short-Term Debt	5.05%	6.05%	0.31%
Preferred Stock, Non-tax Adv.	1.80%	5.05%	0.09%
Preferred Securities, Tax Adv.	3.73%	8.63%	0.32%
Common Equity	45.82%	12.50%	5.73%
Total	100.00%		9.62%

Indicated levels of fixed charge coverage assuming that the Company could actually achieve its overall cost of capital:

Pre-tax coverage of interest expense based upon a 39.67% composite federal and state income tax rate (13.45% ÷ 3.48%)	3.86 x
Post-tax coverage of interest expense (9.62% ÷ 3.48%)	2.76 x
Overall coverage of interest expense and preferred stock dividends (9.62% ÷ 3.89%)	2.47 x

Illinois Power Company
Capitalization and Financial Statistics
1995-1999, Inclusive

	1999	1998	1997	1996	1995	
			(Millions of Dollars)			
Amount of Capital Employed						
Permanent Capital	$ 3,417.2	$ 3,813.4	$ 3,258.2	$ 3,553.4	$ 3,535.0	
Short-Term Debt	$ 327.3	$ 147.6	$ 376.8	$ 310.0	$ 359.6	
Total Capital	$ 3,744.5	$ 3,961.0	$ 3,635.0	$ 3,863.4	$ 3,894.6	
Capital Structure Ratios						
Based on Permanent Captial:						Average
Long-Term Debt	62.7%	69.9%	52.3%	47.4%	51.9%	56.8%
Preferred Stock	7.0%	6.7%	7.8%	8.3%	6.3%	7.2%
Common Equity	30.3%	23.4%	39.9%	44.4%	41.8%	36.0%
	100.0%	100.0%	100.0%	100.1%	100.0%	100.0%
Based on Total Capital:						
Total Debt incl. Short Term	66.0%	71.0%	57.3%	51.6%	56.3%	60.4%
Preferred Stock	6.4%	6.5%	7.0%	7.6%	5.7%	6.6%
Common Equity	27.6%	22.5%	35.7%	40.8%	38.0%	32.9%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Rate of Return on Book Common Equity	9.9%	NMF	9.0%	13.5%	10.6%	10.8%
Operating Ratio (1)	85.7%	NMF	78.5%	70.3%	72.6%	76.8%
Coverage incl. AFUDC (2)						
Pre-tax: All Interest Charges	2.13 x	NMF x	2.97 x	3.76 x	3.03 x	2.97 x
Post-tax: All Interest Charges	1.76 x	NMF x	2.17 x	2.72 x	2.23 x	2.22 x
Overall Coverage: All Int. & Pfd. Div.	1.58 x	NMF x	1.86 x	2.32 x	1.89 x	1.91 x
Coverage excl. AFUDC (3)						
Pre-tax: All Interest Charges	2.10 x	NMF x	2.93 x	3.71 x	2.99 x	2.93 x
Post-tax: All Interest Charges	1.73 x	NMF x	2.13 x	2.67 x	2.19 x	2.18 x
Overall Coverage: All Int. & Pfd. Div.	1.55 x	NMF x	1.83 x	2.28 x	1.85 x	1.88 x
Quality of Earnings & Cash Flow						
AFC/Income Avail. for Common Equity	4.4%	NMF	3.9%	3.2%	3.9%	3.9%
Effective Income Tax Rate	32.5%	43.1%	40.5%	37.6%	39.1%	38.6%
Internal Cash Generation/Construction (4)	203.2%	2.5%	120.0%	206.7%	170.2%	140.5%
Gross Cash Flow/ Avg. Total Debt(5)	17.4%	5.5%	18.5%	23.0%	20.2%	16.9%
Gross Cash Flow Interest Coverage(6)	4.23 x	2.11 x	4.02 x	4.73 x	4.05 x	3.83 x
Common Dividend Coverage (7)	7.72 x	1.06 x	3.29 x	4.46 x	4.44 x	4.19 x

See Page 2 for Notes.

Illinois Power Company
Capitalization and Financial Statistics
1995-1999, Inclusive

Notes:

(1) Total operating expenses, maintenance, depreciation and taxes other than income as a percentage of operating revenues.

(2) Coverage calculations represent the number of times available earnings including AFUDC (allowance for funds used during construction), as reported in its entirety, cover fixed charges.

(3) Coverage calculations represent the number of times available earnings excluding AFUDC (allowance for funds used during construction), as reported in its entirety, cover fixed charges.

(4) Internal cash generation/gross construction is the percentage of gross construction expenditures provided by internally generated funds from operations after payment of all cash dividends.

(5) Gross Cash Flow (sum of net income, depreciation, amortization, net deferred income taxes and investment tax credits, less AFUDC) as a percentage of average total debt.

(6) Gross Cash Flow plus interest charges divided by interest charges.

(7) Common dividend coverage is the relationship of internally generated funds from operations after payment of preferred stock dividends to common dividends paid.

Source of Information: Utility COMPUSTAT

Alliance RTO Group
Capitalization and Financial Statistics (1)
1995-1999, Inclusive

	1999	1998	1997	1996	1995	
			(Millions of Dollars)			
Amount of Capital Employed						
Permanent Capital	$ 9,381.5	$ 8,790.1	$ 8,619.1	$ 7,154.8	$ 7,065.7	
Short-Term Debt	$ 415.6	$ 313.1	$ 277.2	$ 212.4	$ 139.9	
Total Capital	$ 9,797.1	$ 9,103.2	$ 8,896.3	$ 7,367.2	$ 7,205.6	
Market-Based Financial Ratios						Average
Earnings/Price Ratio	7.4%	6.5%	7.2%	7.5%	8.3%	7.4%
Market/Book Ratio	191.5%	196.2%	167.7%	165.2%	159.6%	176.0%
Dividend Yield	5.1%	4.8%	6.0%	5.8%	6.1%	5.6%
Dividend Payout Ratio	69.1%	73.9%	83.3%	78.4%	74.9%	75.9%
Capital Structure Ratios						
Based on Permanent Captial:						
Long-Term Debt	59.2%	54.5%	55.3%	51.0%	51.7%	54.3%
Preferred Stock	2.5%	3.4%	3.7%	4.2%	4.7%	3.7%
Common Equity	38.2%	42.1%	41.0%	44.8%	43.6%	42.0%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Based on Total Capital:						
Total Debt incl. Short Term	61.1%	56.2%	56.7%	52.2%	52.5%	55.8%
Preferred Stock	2.4%	3.3%	3.6%	4.1%	4.6%	3.6%
Common Equity	36.4%	40.5%	39.7%	43.7%	43.0%	40.7%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Rate of Return on Book Common Equity	13.8%	12.6%	11.9%	12.2%	12.8%	12.7%
Operating Ratio (2)	77.5%	77.6%	77.0%	75.0%	73.5%	76.1%
Coverage incl. AFUDC (3)						
Pre-tax: All Interest Charges	3.05 x	3.13 x	3.15 x	3.37 x	3.33 x	3.21 x
Post-tax: All Interest Charges	2.36 x	2.37 x	2.35 x	2.49 x	2.47 x	2.41 x
Overall Coverage: All Int. & Pfd. Div.	2.27 x	2.27 x	2.24 x	2.31 x	2.27 x	2.27 x
Coverage excl. AFUDC (4)						
Pre-tax: All Interest Charges	3.03 x	3.11 x	3.12 x	3.34 x	3.30 x	3.18 x
Post-tax: All Interest Charges	2.33 x	2.34 x	2.32 x	2.46 x	2.44 x	2.38 x
Overall Coverage: All Int. & Pfd. Div.	2.25 x	2.24 x	2.21 x	2.29 x	2.24 x	2.25 x
Quality of Earnings & Cash Flow						
AFC/Income Avail. for Common Equity	2.7%	2.4%	2.2%	2.0%	2.1%	2.3%
Effective Income Tax Rate	30.8%	34.7%	36.8%	36.8%	36.5%	35.1%
Internal Cash Generation/Construction (5)	114.4%	131.5%	143.8%	165.1%	153.1%	141.6%
Gross Cash Flow/ Avg. Total Debt(6)	19.6%	20.6%	22.1%	24.5%	24.3%	22.2%
Gross Cash Flow Interest Coverage(7)	3.69 x	3.78 x	3.91 x	4.30 x	4.16 x	3.97 x
Common Dividend Coverage (8)	3.61 x	3.44 x	3.23 x	3.41 x	3.54 x	3.44 x

See Page 2 for Notes.

Alliance RTO Group
Capitalization and Financial Statistics
1995-1999, Inclusive

Notes:

(1) All capitalization and financial statistics for the group are the arithmetic average of the achieved results for each individual company in the group.
(2) Total operating expenses, maintenance, depreciation and taxes other than income as a percentage of operating revenues.
(3) Coverage calculations represent the number of times available earnings including AFUDC (allowance for funds used during construction), as reported in its entirety, cover fixed charges.
(4) Coverage calculations represent the number of times available earnings excluding AFC (allowance for funds used during construction), as reported in its entirety, cover fixed charges.
(5) Internal cash generation/gross construction is the percentage of gross construction expenditures provided by internally-generated funds from operations after payment of all cash dividends.
(6) Gross Cash Flow (sum of net income, depreciation, amortization, net deferred income tax and investment tax credits, less total AFUDC) as a percentage of average total debt.
(7) Gross Cash Flow plus interest charges divided by interest charges.
(8) Common dividend coverage is the relationship of internally-generated funds from operations after payment of preferred stock dividends to common dividends paid.

Basis of Selection

The group consists of the parent companies of the electric subsidiaries that are members of the Alliance Regional Transmission Organization. To be included in the group, each holding company had to have publicly-traded common stock listed on the New York Stock Exchange, an SIC code of 4911 or 4931, investment grade credit ratings by major credit rating agencies, a listing in Edition One or Five of The Value Line Investment Survey in the category "Electric Utility (East or Central) Industry," and not currently the target of a merger or acquisition.

	Corporate Credit Rating (1)		Business	Common Stock	S&P Common Stock	Value Line
	Moody's	S&P	Profile (1)	Traded	Ranking	Beta
Company						
Ameren Corporation	Aa3	A+	4	NYSE	A	.55
American Electric Power Co.	A3	A-	4	NYSE	B+	.55
CMS Energy Corp.	Baa3	BBB+	6	NYSE	B	.55
DPL, Inc.	A2	BBB+	4	NYSE	A-	.60
DTE Energy Company	A3	A-	6	NYSE	A-	.60
Dominion Resources, Inc.	A2	A	4	NYSE	B	.55
Exelon Corp.	Baa1	A	7	NYSE	-	NMF
FirstEnergy Corp.	Baa1	BBB-	8	NYSE	B	.60
	A3	A-	5		B+	.57

Notes: (1) Ratings/Profiles are those of utility subsidiaries

Source of Information: Utility COMPUSTAT
Company Annual Reports to stockholders
Moody's Investors Service
S&P Stock Guide

Gas Distribution Group
Capitalization and Financial Statistics (1)
1995-1999, Inclusive

	1999	1998	1997	1996	1995	
			(Millions of Dollars)			
Amount of Capital Employed						
Permanent Capital	$ 833.7	$ 832.6	$ 781.6	$ 682.4	$ 676.6	
Short-Term Debt	$ 220.6	$ 94.4	$ 118.8	$ 101.6	$ 68.9	
Total Capital	$ 1,054.3	$ 927.0	$ 900.4	$ 784.0	$ 745.5	
Market-Based Financial Ratios						Average
Earnings/Price Ratio	5.9%	5.7%	6.4%	4.9%	6.3%	5.9%
Market/Book Ratio	190.8%	215.5%	219.2%	206.6%	178.5%	202.1%
Dividend Yield	5.1%	4.6%	4.5%	4.7%	5.3%	4.8%
Dividend Payout Ratio	101.1%	84.4%	73.9%	34.4%	84.3%	75.6%
Capital Structure Ratios						
Based on Permanent Captial:						
Long-Term Debt	45.4%	47.1%	47.9%	45.3%	45.5%	46.2%
Preferred Stock & Min. Int.	0.2%	0.4%	0.5%	0.6%	0.5%	0.4%
Common Equity	54.5%	52.5%	51.7%	54.2%	53.9%	53.4%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Based on Total Capital:						
Total Debt incl. Short Term	57.4%	53.3%	55.2%	53.7%	51.8%	54.3%
Preferred Stock & Min. Int.	0.1%	0.3%	0.4%	0.4%	0.4%	0.3%
Common Equity	42.4%	46.4%	44.4%	45.9%	47.8%	45.4%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Rate of Return on Book Common Equity	11.1%	12.2%	14.1%	9.6%	11.4%	11.7%
Operating Ratio (2)	88.5%	88.7%	90.3%	88.8%	88.9%	89.0%
Coverage incl. AFUDC (3)						
Pre-tax: All Interest Charges	3.32 x	3.50 x	3.72 x	3.28 x	3.15 x	3.39 x
Post-tax: All Interest Charges	2.52 x	2.60 x	2.75 x	2.45 x	2.42 x	2.55 x
Overall Coverage: All Int. & Pfd. Div.	2.50 x	2.59 x	2.73 x	2.44 x	2.40 x	2.53 x
Coverage excl. AFUDC (4)						
Pre-tax: All Interest Charges	3.29 x	3.49 x	3.72 x	3.28 x	3.15 x	3.38 x
Post-tax: All Interest Charges	2.49 x	2.58 x	2.74 x	2.45 x	2.41 x	2.53 x
Overall Coverage: All Int. & Pfd. Div.	2.47 x	2.57 x	2.73 x	2.44 x	2.39 x	2.52 x
Quality of Earnings & Cash Flow						
AFC/Income Avail. for Common Equity	1.5%	0.8%	0.3%	0.0%	0.4%	0.6%
Effective Income Tax Rate	33.9%	36.8%	36.0%	36.3%	34.2%	35.4%
Internal Cash Generation/Construction (5)	81.8%	84.2%	99.2%	93.1%	69.5%	85.5%
Gross Cash Flow/ Avg. Total Debt(6)	24.0%	24.1%	24.9%	26.1%	23.9%	24.6%
Gross Cash Flow Interest Coverage(7)	4.73 x	4.50 x	4.30 x	4.65 x	4.12 x	4.46 x
Common Dividend Coverage (8)	3.03 x	2.87 x	2.92 x	3.04 x	2.77 x	2.93 x

See Page 2 for Notes.

Gas Distribution Group
Capitalization and Financial Statistics
1995-1999, Inclusive

Notes:

(1) All capitalization and financial statistics for the group are the arithmetic average of the achieved results for each individual company in the group.
(2) Total operating expenses, maintenance, depreciation and taxes other than income as a percentage of operating revenues.
(3) Coverage calculations represent the number of times available earnings including AFUDC (allowance for funds used during construction), as reported in its entirety cover fixed charges.
(4) Coverage calculations represent the number of times available earnings excluding AFUDC (allowance for funds used during construction), as reported in its entirety, cover fixed charges.
(5) Internal cash generation/gross construction is the percentage of gross construction expenditures provided by internally-generated funds from operations after payment of all cash dividends.
(6) Gross Cash Flow (sum of net income, depreciation, amortization, net deferred income tax and investment tax credits, less total AFUDC) as a percentage of average total debt.
(7) Gross Cash Flow plus interest charges divided by interest charges.
(8) Common dividend coverage is the relationship of internally-generated funds from operations after payment of preferred stock dividends to common dividends paid.

Basis of Selection
The Gas Distribution Group includes companies that have publicly-traded common stock listed on the New York Stock Exchange, an SIC code of 4924, investment grade credit ratings, listed in Edition Three of The Value Line Investment Survey under the category “Natural Gas Distribution Industry,” that operate in the central region of the U.S., and that are not currently the target of a merger or acquisition.

Company	Corporate Credit Rating (1) Moody's	S&P	Common Business Profile (1)	S&P Common Stock Traded	Stock Ranking	Value Line Beta
Atmos Energy Corp.	A3	A-	4	NYSE	B+	0.55
Laclede Gas Company	Aa3	AA-	4	NYSE	B-	0.50
NICOR, Inc.	Aa1	AA	6	NYSE	A-	0.60
Peoples Energy	Aa2	AA-	3	NYSE	B+	0.70
SEMCO Energy	Baa1	BBB	3	NYSE	B+	0.65
Average	A1	A+	4		B+	0.60

Notes: (1) Ratings/Profiles are those of utility subsidiaries.

Source of Information: Utility COMPUSTAT
Company Annual Reports to Stockholders
Moody’s Investors Service
S&P Stock Guide

Standard & Poor's Public Utilities
Capitalization and Financial Statistics (1)
1995-1999, Inclusive

	1999	1998	1997	1996	1995	
			(Millions of Dollars)			
Amount of Capital Employed						
Permanent Capital	$ 10,250.7	$ 9,065.2	$ 8,226.7	$ 7,055.2	$ 6,781.6	
Short-Term Debt	$ 808.4	$ 510.6	$ 380.2	$ 264.1	$ 223.0	
Total Capital	$ 11,059.1	$ 9,575.8	$ 8,606.9	$ 7,319.3	$ 7,004.6	
Market-Based Financial Ratios						Average
Earnings/Price Ratio	6.8%	5.4%	6.6%	7.4%	7.9%	6.8%
Market/Book Ratio	195.0%	199.4%	183.0%	175.5%	152.4%	181.1%
Dividend Yield	4.2%	3.9%	4.5%	4.8%	5.4%	4.6%
Dividend Payout Ratio	61.8%	61.2%	73.4%	65.1%	62.3%	64.8%
Capital Structure Ratios						
Based on Permanent Captial:						
Long-Term Debt	55.7%	53.1%	52.2%	49.9%	50.2%	52.2%
Preferred Stock	5.0%	4.8%	4.2%	4.7%	5.1%	4.8%
Common Equity	39.3%	42.1%	43.6%	45.3%	44.7%	43.0%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Based on Total Capital:						
Total Debt incl. Short Term	58.9%	55.6%	54.7%	52.0%	52.0%	54.6%
Preferred Stock	4.7%	4.5%	4.0%	4.6%	4.9%	4.5%
Common Equity	36.5%	39.9%	41.3%	43.4%	43.1%	40.8%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Rate of Return on Book Common Equity	12.3%	10.8%	11.0%	12.3%	13.0%	11.9%
Operating Ratio (2)	83.3%	83.3%	81.3%	79.0%	77.1%	80.8%
Coverage incl. AFUDC (3)						
Pre-tax: All Interest Charges	3.06 x	2.87 x	3.03 x	3.41 x	3.25 x	3.12 x
Post-tax: All Interest Charges	2.35 x	2.21 x	2.29 x	2.53 x	2.45 x	2.37 x
Overall Coverage: All Int. & Pfd. Div.	2.23 x	2.08 x	2.18 x	2.37 x	2.26 x	2.22 x
Coverage excl. AFUDC (3)						
Pre-tax: All Interest Charges	3.04 x	2.85 x	3.00 x	3.38 x	3.20 x	3.09 x
Post-tax: All Interest Charges	2.33 x	2.19 x	2.27 x	2.50 x	2.40 x	2.34 x
Overall Coverage: All Int. & Pfd. Div.	2.21 x	2.06 x	2.15 x	2.34 x	2.22 x	2.20 x
Quality of Earnings & Cash Flow						
AFC/Income Avail. for Common Equity	1.5%	1.8%	2.2%	2.5%	2.6%	2.1%
Effective Income Tax Rate	34.5%	34.9%	33.0%	36.4%	31.9%	34.1%
Internal Cash Generation/Construction (4)	106.3%	119.4%	137.0%	149.0%	129.6%	128.3%
Gross Cash Flow/ Avg. Total Debt(5)	20.5%	21.9%	23.6%	25.1%	24.4%	23.1%
Gross Cash Flow Interest Coverage(6)	3.94 x	3.87 x	4.15 x	4.35 x	4.07 x	4.08 x
Common Dividend Coverage (7)	4.06 x	4.02 x	4.07 x	4.17 x	4.51 x	4.17 x

See Page 2 for Notes.

Standard & Poor's Public Utilities
Capitalization and Financial Statistics
1995-1999, Inclusive

Notes:

(1) All capitalization and financial statistics for the group are the arithmetic average of the achieved results for each individual company in the group.
(2) Total operating expenses, maintenance, depreciation and taxes other than income taxes as a percent of operating revenues.
(3) Coverage calculations represent the number of times available earnings including AFUDC (allowance for funds used during construction), as reported in its entirety, cover fixed charges.
(4) Coverage calculations represent the number of times available earnings excluding AFUDC (allowance for funds used during construction), as reported in its entirety, cover fixed charges.
(5) Internal cash generation/gross construction is the percentage of gross construction expenditures provided by internally-generated funds from operations after payment of all cash dividends divided by gross contribution expenditures.
(6) Gross Cash Flow (sum of net income, depreciation, amortization, net deferred income taxes and investment tax credits, less total AFUDC) plus interest charges, divided by interest charges.
(7) Common dividend coverage is the relationship of internally-generated funds from operations after payment of preferred stock dividends to common dividends paid.

Source of Information: Utility COMPUSTAT Annual Reports to Shareholders

Standard & Poor's Public Utilities
Company Identities

	Corporate Credit Rating (1)		S&P Business	Common Stock	S&P Stock	Value Line
	Moody's	S&P	Profile (1)	Traded	Ranking	Beta
Electric Companies						
Allegheny Energy	A1	A+	4	NYSE	A-	0.60
Ameren Corporation	Aa3	A+	4	NYSE	A-	0.55
American Electric Power Co., Inc.	A3	A-	4	NYSE	B+	0.55
CMS Energy	Baa3	BBB+	6	NYSE	B	0.55
CINergy Corporation	A3	A-	4	NYSE	B	0.60
Consolidated Edison Inc.	A1	A+	4	NYSE	A	0.55
Constellation Energy Group	A1	A+	4	NYSE	B+	0.50
Dominion Resources, Inc.	A2	A	4	NYSE	B	0.55
DTE Energy Company	A3	A-	6	NYSE	A-	0.60
Duke Energy Corporation	Aa3	A+	6	NYSE	A-	0.55
Edison International	A2	A+	5	NYSE	B	0.65
Entergy Corp.	Baa2	BBB+	7	NYSE	B	0.55
Exelon Corp.	Baa1	A	7	NYSE	B	
FirstEnergy Corporation	Baa1	BBB-	8	NYSE	B	0.60
FPL Group, Inc.	Aa3	AA-	4	NYSE	B+	0.45
GPU, Inc.	A2	A	3	NYSE	B+	0.65
Niagara Mohawk Holdings Inc.	Baa2	BBB	5	NYSE	B	0.65
PG&E Corporation	A1	A+	5	NYSE	B	0.50
PPL Corporation	A3	A-	5	NYSE	B+	0.60
Pinnacle West Capital Corp	Baa1	A-	6	NYSE	B	0.45
Progress Energy	A3	BBB+	5	NYSE	A-	
Public Service Enterprise Group, Inc.	A3	A-	7	NYSE	B+	0.55
Reliant Energy	A3	BBB+	4	NYSE	B	0.60
Southern Company	A1	A	4	NYSE	A-	0.50
TXU Corp.	A3	BBB+	5	NYSE	B	0.60
Xcel Energy	Aa3	A	4	NYSE	B+	
Average	A2	A-	5		B+	0.56
Power Producers						
AES Corporation	A2	BBB-	4	NYSE	B+	1.10
Calpine Corporation	Ba1	BB+		NYSE	NR	0.85

Standard & Poor's Public Utilities
Company Identities

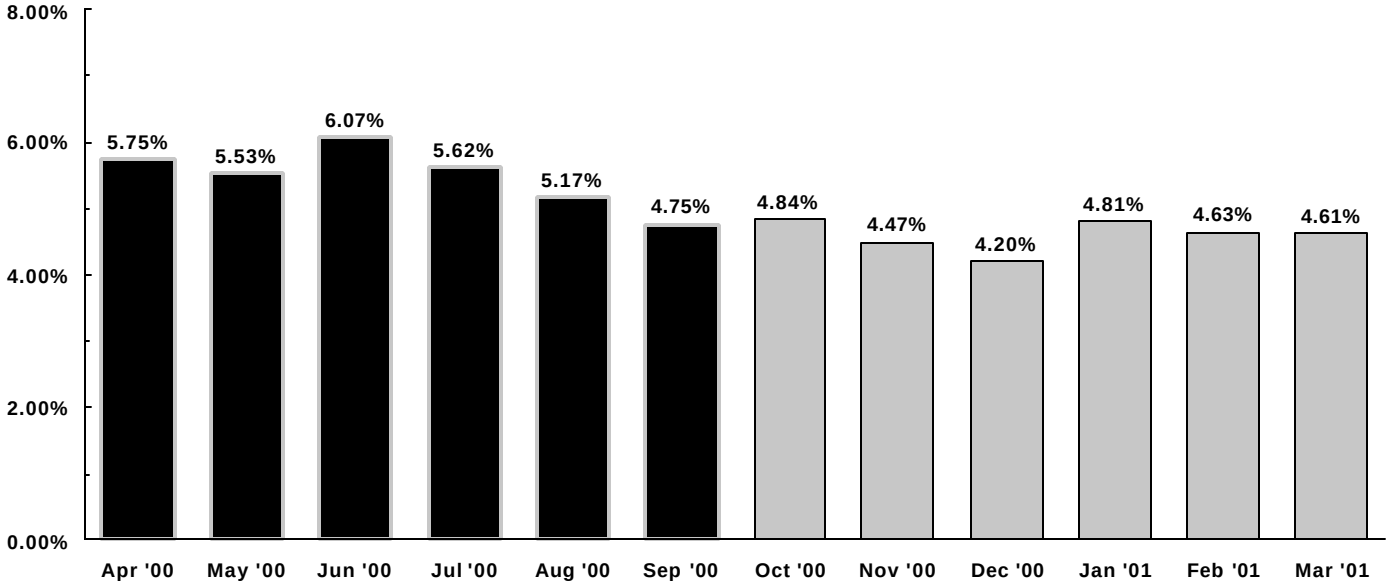
	Corporate Credit Rating (1)		S&P Business Profile (1)	Common Stock Traded	S&P Stock Ranking	Value Line Beta
	Moody's	S&P				
Natural Gas Companies						
Dynegy Inc.	Baa2	BBB+	7	NYSE	NR	
El Paso Energy Corp.	Baa1	BBB+	4	NYSE	NR	0.80
Enron Corporation	A3	A-	4	NYSE	A-	0.90
KeySpan Corp.	A2	A	2	NYSE	B+	0.60
Kinder Morgan	Baa2	BBB-	5	NYSE	B	0.70
NICOR, Inc.	Aa1	AA	2	NYSE	A-	0.60
NiSource, Inc.	A2	BBB+	6	NYSE	A	0.50
ONEOK, Inc.	A2	A	5	NYSE	A-	0.70
Peoples Energy Corp.	Aa2	AA-	3	NYSE	B+	0.70
Sempra Energy	A1	AA-	2	NYSE	NR	0.55
Williams Companies	A2	A	3	NYSE	B	0.90
Average	A2	A	4		B+	0.70
Average for S&P Public Utilities	A2	A-	5		B+	0.62

Notes: (1) Rating/Profile for utility subsidiary

Source of Information:
Moody's Public Utility Manual
Standard & Poor's Credit Analysis Reference Disc
Standard & Poor's Stock Guide
Value Line Investment Survey for Windows

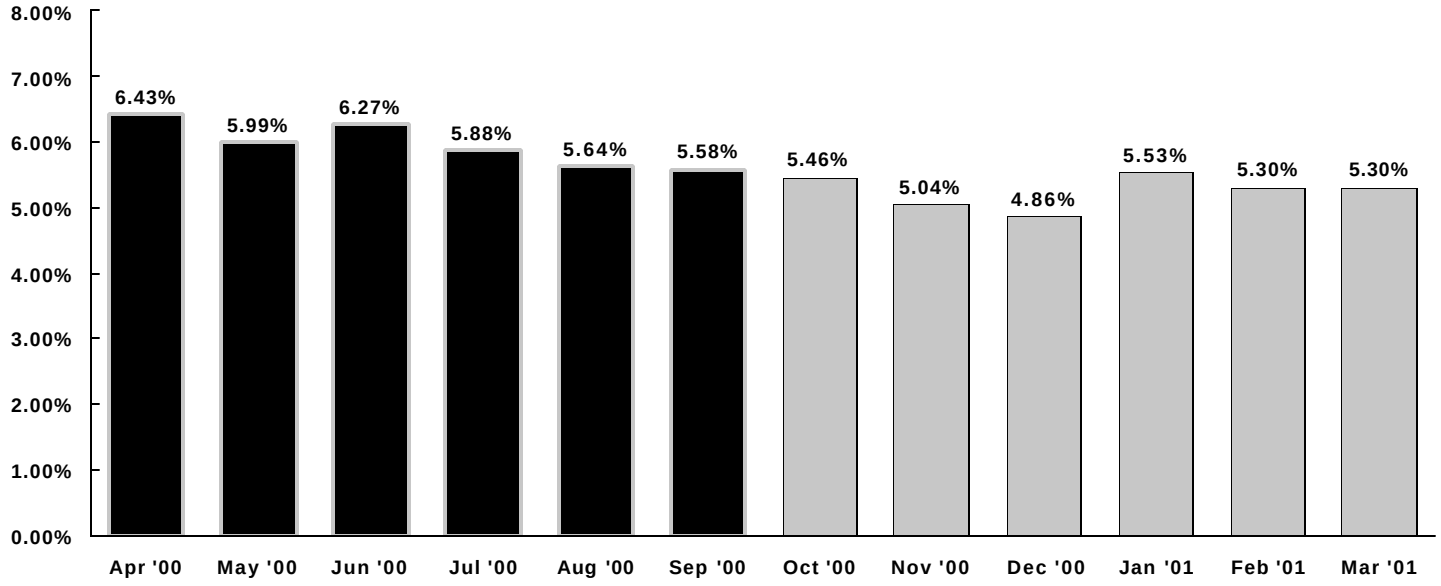
Alliance RTO Group

Monthly Dividend Yields



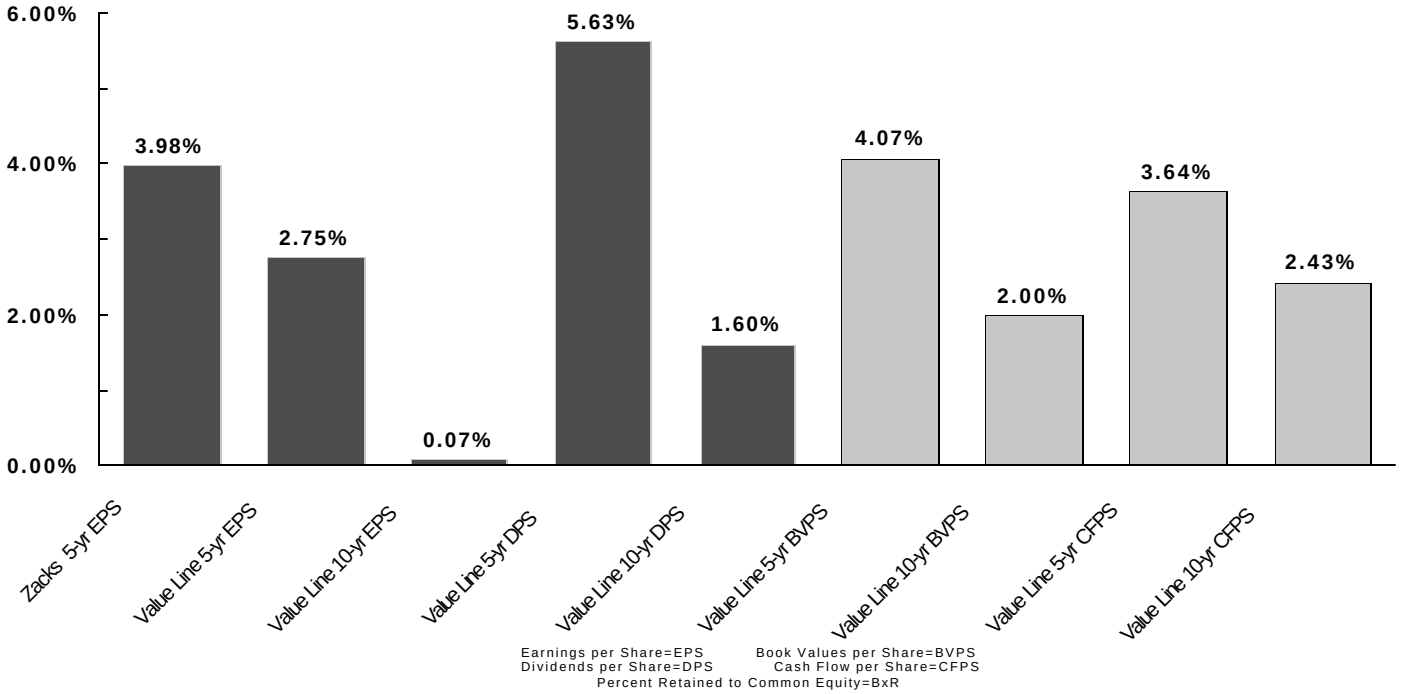
Gas Distribution Group

Monthly Dividend Yields



Alliance RTO Group

Historical Growth Rates



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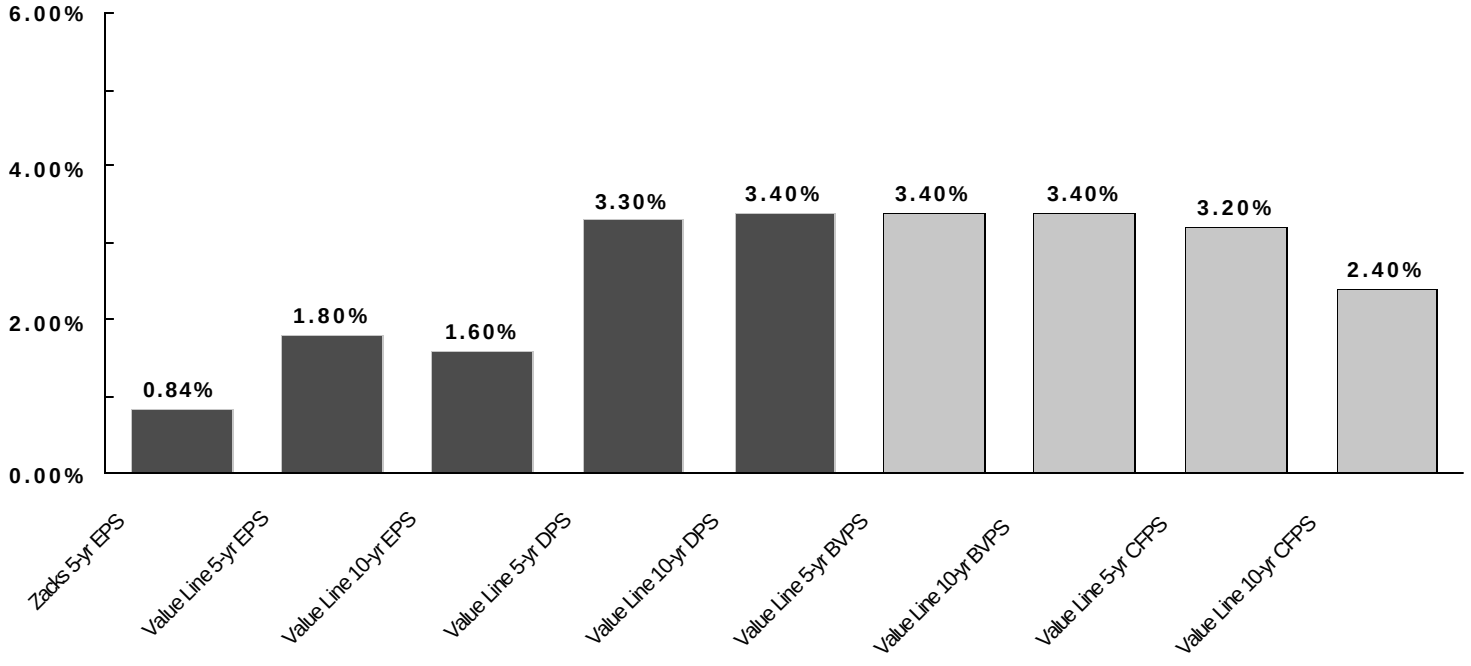
Dividends per Share=DPS Cash Flow per Share=CFPS
Percent Retained to Common Equity=BxR

Gas Distribution Group

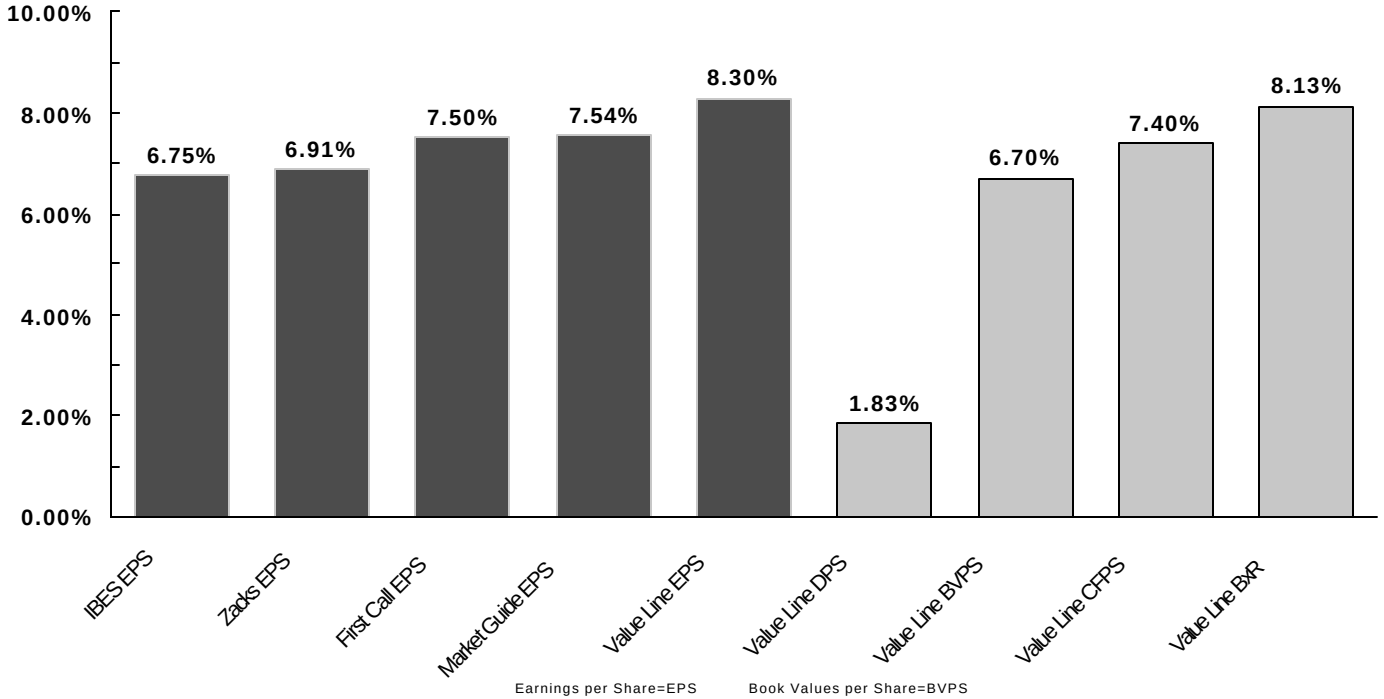
Historical Growth Rates



Earnings per Share=EPS Book Values per Share=BVPS
Dividends per Share=DPS Cash Flow per Share=CFPS
Percent Retained to Common Equity=BxR

Alliance RTO Group

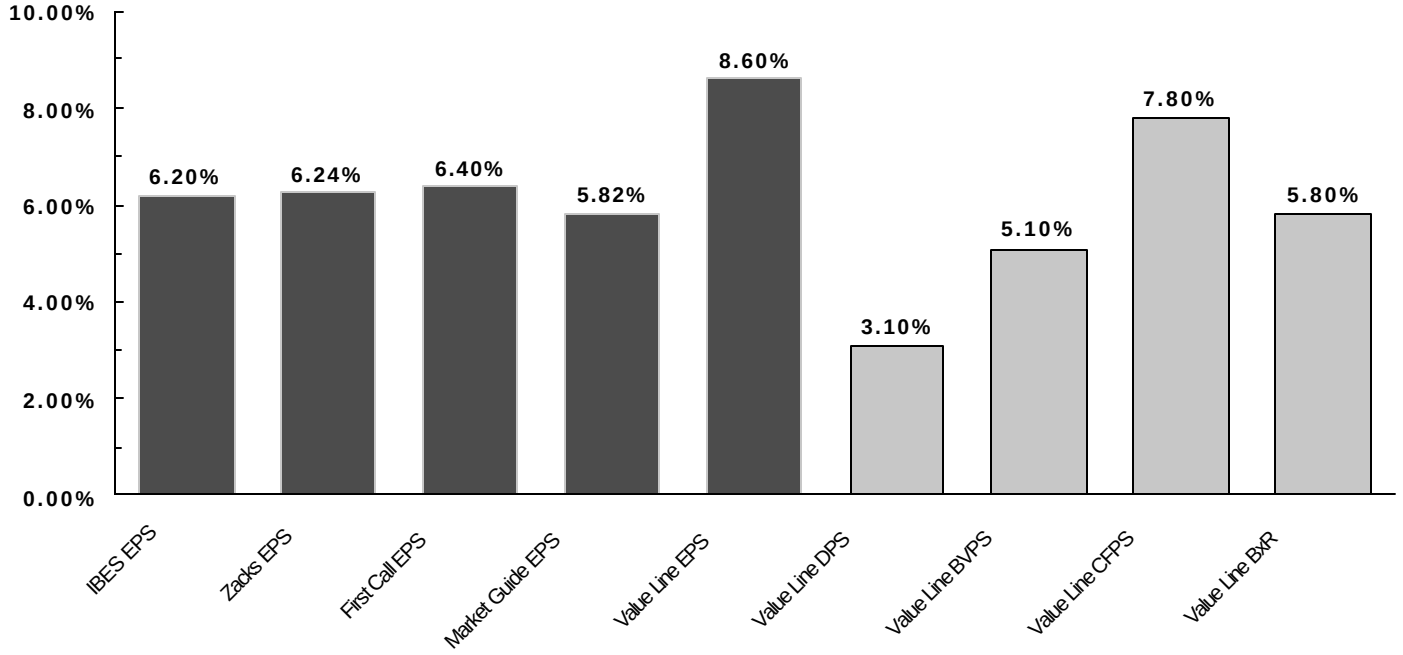
Five-Year Projected Growth Rates



Earnings per Share=EPS Book Values per Share=BVPS
Dividends per Share=DPS Cash Flow per Share=CFPS
Percent Retained to Common Equity=BxR

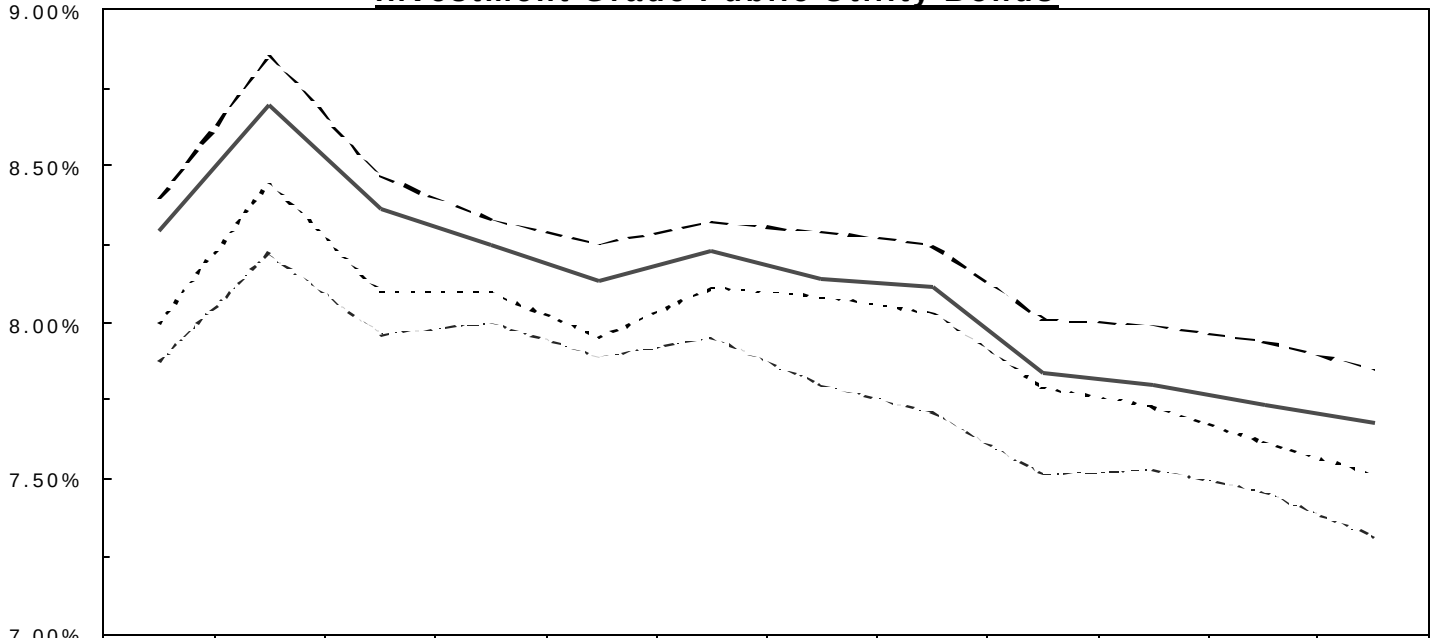
Gas Distribution Group

Five-Year Projected Growth Rates



Earnings per Share=EPS Book Values per Share=BVPS
Dividends per Share=DPS Cash Flow per Share=CFPS
Percent Retained to Common Equity=BxR

Interest Rates for
Investment Grade Public Utility Bonds



	Apr '00	May'00	Jun '00	Jul '00	Aug '00	Sep '00	Oct '00	Nov '00	Dec '00	Jan '01	Feb '01	Mar '01
Aaa	7.87%	8.22%	7.96%	8.00%	7.89%	7.95%	7.80%	7.71%	7.51%	7.53%	7.46%	7.31%
Aa	8.00%	8.44%	8.10%	8.10%	7.95%	8.11%	8.08%	8.03%	7.79%	7.73%	7.62%	7.51%
A	8.29%	8.70%	8.36%	8.25%	8.13%	8.23%	8.14%	8.11%	7.84%	7.80%	7.74%	7.68%
Baa	8.40%	8.85%	8.47%	8.33%	8.25%	8.32%	8.29%	8.25%	8.01%	7.99%	7.94%	7.85%

Exhibit No. IPC-4.11
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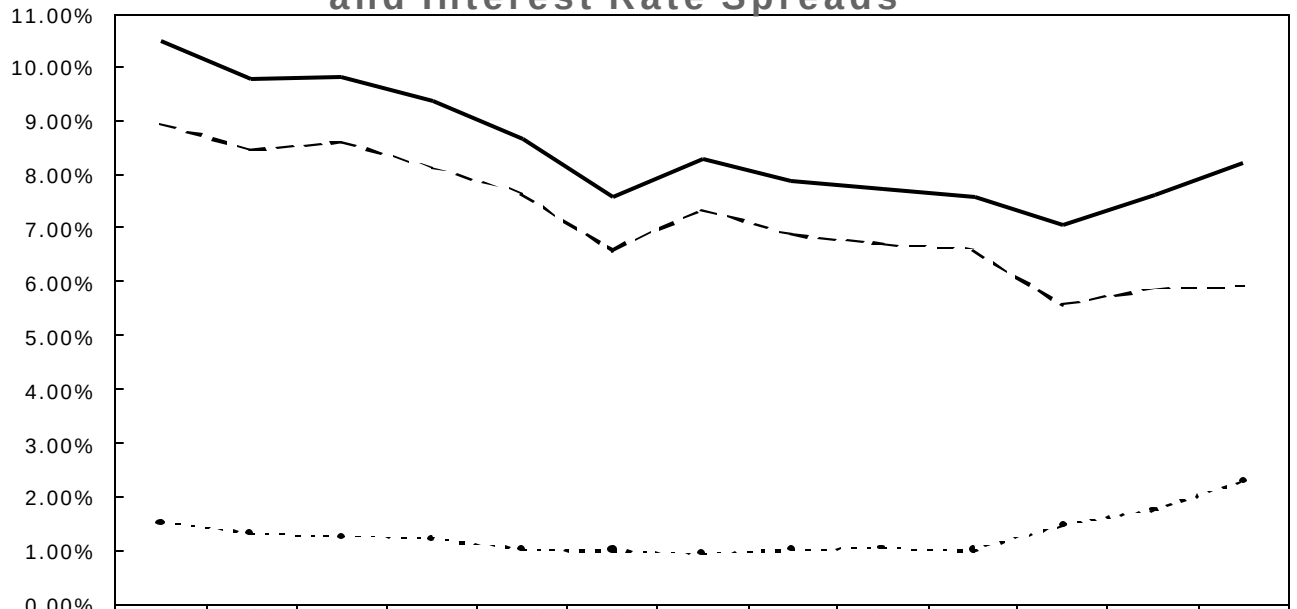
Schedule 9 [1 of 4]

Interest Rates for Investment Grade Public Utility Bonds
Yearly for 1995-1999 and 2000
and the Twelve Months Ended March 2001

Years	Aaa Rated	Aa Rated	A Rated	Baa Rated	Average
1995	7.68%	7.77%	7.89%	8.29%	7.91%
1996	7.49%	7.57%	7.75%	8.17%	7.75%
1997	7.42%	7.54%	7.60%	7.95%	7.63%
1998	6.77%	6.91%	7.04%	7.26%	7.00%
1999	7.21%	7.51%	7.62%	7.88%	7.56%
Five-Year Average	7.31%	7.46%	7.58%	7.91%	7.57%
2000	7.88%	8.06%	8.24%	8.36%	8.14%
Months					
Apr-00	7.87%	8.00%	8.29%	8.40%	8.14%
May-00	8.22%	8.44%	8.70%	8.85%	8.55%
Jun-00	7.96%	8.10%	8.36%	8.47%	8.22%
Jul-00	8.00%	8.10%	8.25%	8.33%	8.17%
Aug-00	7.89%	7.95%	8.13%	8.25%	8.06%
Sep-00	7.95%	8.11%	8.23%	8.32%	8.15%
Oct-00	7.80%	8.08%	8.14%	8.29%	8.08%
Nov-00	7.71%	8.03%	8.11%	8.25%	8.03%
Dec-00	7.51%	7.79%	7.84%	8.01%	7.79%
Jan-01	7.53%	7.73%	7.80%	7.99%	7.76%
Feb-01	7.46%	7.62%	7.74%	7.94%	7.69%
Mar-01	7.31%	7.51%	7.68%	7.85%	7.59%
Twelve-Month Average	7.77%	7.96%	8.11%	8.25%	8.02%
Six-Month Average	7.55%	7.79%	7.89%	8.06%	7.82%
Three-Month Average	7.43%	7.62%	7.74%	7.93%	7.68%

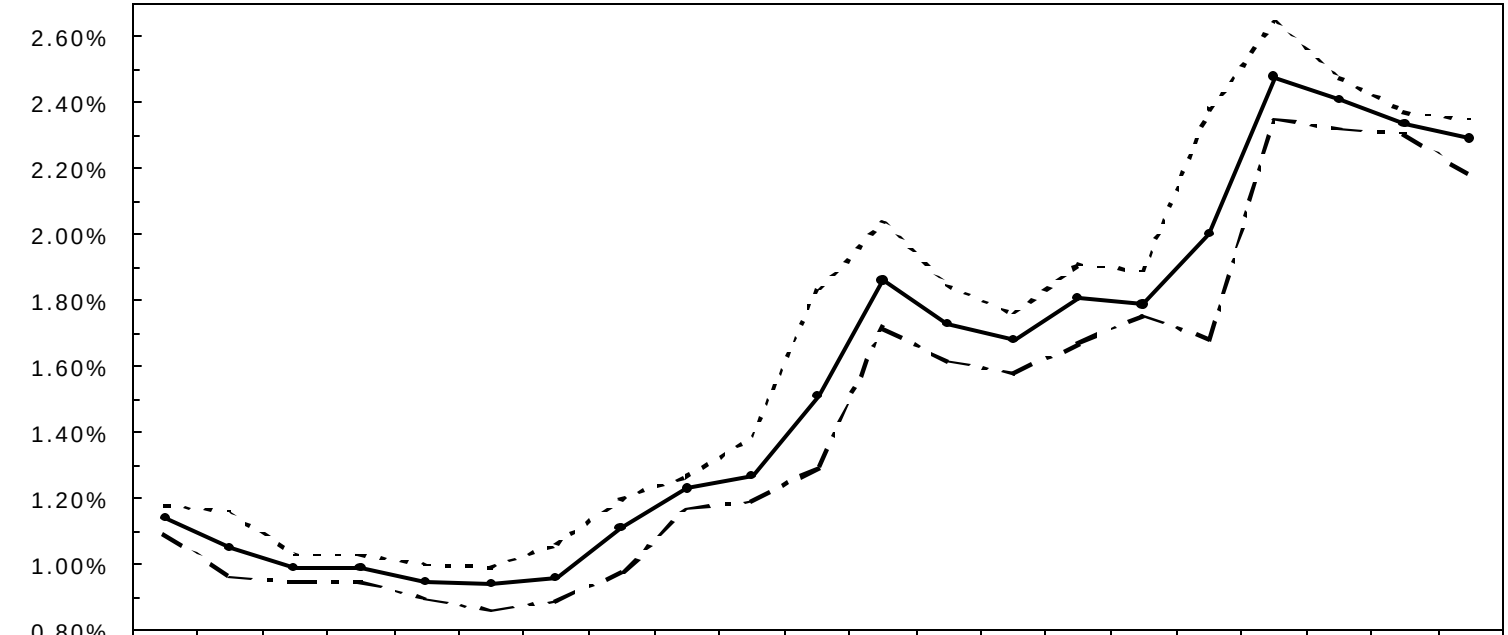
Source of Information: Moody's Investors Services, Inc.

Yields on
A-rated Public Utility Bonds & 30-year Treasury Bonds
and Interest Rate Spreads



	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
A-rated Public Utility	10.49%	9.77%	9.86%	9.36%	8.69%	7.59%	8.31%	7.89%	7.75%	7.60%	7.04%	7.62%	8.24%
30-yr Treasury	8.96%	8.45%	8.61%	8.14%	7.67%	6.59%	7.37%	6.88%	6.71%	6.61%	5.58%	5.87%	5.94%
Spread	1.53%	1.32%	1.25%	1.22%	1.02%	1.00%	0.94%	1.01%	1.04%	0.99%	1.46%	1.75%	2.30%

Interest Rate Spreads
A-rated Public Utility Bonds
over 30-year Treasury Bonds



	M-96	J-96	S-96	D-96	M-97	J-97	S-97	D-97	M-98	J-98	S-98	D-98	M-99	J-99	S-99	D-99	M-00	J-00	S-00	D-00	M-01
High	1.18%	1.16%	1.03%	1.03%	1.00%	0.99%	1.06%	1.20%	1.27%	1.39%	1.84%	2.03%	1.85%	1.76%	1.91%	1.89%	2.38%	2.64%	2.48%	2.37%	2.35%
Avg	1.14%	1.05%	0.99%	0.99%	0.95%	0.94%	0.96%	1.11%	1.23%	1.27%	1.51%	1.86%	1.73%	1.68%	1.81%	1.79%	2.00%	2.48%	2.41%	2.34%	2.29%
Low	1.10%	0.96%	0.95%	0.95%	0.90%	0.86%	0.89%	0.98%	1.17%	1.19%	1.30%	1.72%	1.62%	1.58%	1.67%	1.76%	1.68%	2.35%	2.32%	2.31%	2.18%

Spreads are calculated daily with the average covering an entire quarter

S&P Composite Index and S&P Public Utility Index
Long-Term Corporate and Public Utility Bonds
Yearly Total Returns
1928-2000

Year	S & P Composite Index	S & P Public Utility Index	Long Term Corporate Bonds	Public Utility Bonds
1928	43.61%	57.47%	2.84%	3.08%
1929	-8.42%	11.02%	3.27%	2.34%
1930	-24.90%	-21.96%	7.98%	4.74%
1931	-43.34%	-35.90%	-1.85%	-11.11%
1932	-8.19%	-0.54%	10.82%	7.25%
1933	53.99%	-21.87%	10.38%	-3.82%
1934	-1.44%	-20.41%	13.84%	22.61%
1935	47.67%	76.63%	9.61%	16.03%
1936	33.92%	20.69%	6.74%	8.30%
1937	-35.03%	-37.04%	2.75%	-4.05%
1938	31.12%	22.45%	6.13%	8.11%
1939	-0.41%	11.26%	3.97%	6.76%
1940	-9.78%	-17.15%	3.39%	4.45%
1941	-11.59%	-31.57%	2.73%	2.15%
1942	20.34%	15.39%	2.60%	3.81%
1943	25.90%	46.07%	2.83%	7.04%
1944	19.75%	18.03%	4.73%	3.29%
1945	36.44%	53.33%	4.08%	5.92%
1946	-8.07%	1.26%	1.72%	2.98%
1947	5.71%	-13.16%	-2.34%	-2.19%
1948	5.50%	4.01%	4.14%	2.65%
1949	18.79%	31.39%	3.31%	7.16%
1950	31.71%	3.25%	2.12%	2.01%
1951	24.02%	18.63%	-2.69%	-2.77%
1952	18.37%	19.25%	3.52%	2.99%
1953	-0.99%	7.85%	3.41%	2.08%
1954	52.62%	24.72%	5.39%	7.57%
1955	31.56%	11.26%	0.48%	0.12%
1956	6.56%	5.06%	-6.81%	-6.25%
1957	-10.78%	6.36%	8.71%	3.58%
1958	43.36%	40.70%	-2.22%	0.18%
1959	11.96%	7.49%	-0.97%	-2.29%
1960	0.47%	20.26%	9.07%	9.01%
1961	26.89%	29.33%	4.82%	4.65%
1962	-8.73%	-2.44%	7.95%	6.55%
1963	22.80%	12.36%	2.19%	3.44%
1964	16.48%	15.91%	4.77%	4.94%
1965	12.45%	4.67%	-0.46%	0.50%
1966	-10.06%	-4.48%	0.20%	-3.45%
1967	23.98%	-0.63%	-4.95%	-3.63%
1968	11.06%	10.32%	2.57%	1.87%
1969	-8.50%	-15.42%	-8.09%	-6.66%
1970	4.01%	16.56%	18.37%	15.90%
1971	14.31%	2.41%	11.01%	11.59%
1972	18.98%	8.15%	7.26%	7.19%
1973	-14.66%	-18.07%	1.14%	2.42%
1974	-26.47%	-21.55%	-3.06%	-5.28%
1975	37.20%	44.49%	14.64%	15.50%
1976	23.84%	31.81%	18.65%	19.04%
1977	-7.18%	8.64%	1.71%	5.22%
1978	6.56%	-3.71%	-0.07%	-0.98%
1979	18.44%	13.58%	-4.18%	-2.75%
1980	32.42%	15.08%	-2.76%	-0.23%
1981	-4.91%	11.74%	-1.24%	4.27%
1982	21.41%	26.52%	42.56%	33.52%
1983	22.51%	20.01%	6.26%	10.33%
1984	6.27%	26.04%	16.86%	14.82%
1985	32.16%	33.05%	30.09%	26.48%
1986	18.47%	28.53%	19.85%	18.16%
1987	5.23%	-2.92%	-0.27%	3.02%
1988	16.81%	18.27%	10.70%	10.19%
1989	31.49%	47.80%	16.23%	15.61%
1990	-3.17%	-2.57%	6.78%	8.13%
1991	30.55%	14.61%	19.89%	19.25%
1992	7.67%	8.10%	9.39%	8.65%
1993	9.99%	14.41%	13.19%	10.59%
1994	1.31%	-7.94%	-5.76%	-4.72%
1995	37.43%	42.15%	27.20%	22.81%
1996	23.07%	3.14%	1.40%	3.04%
1997	33.36%	24.69%	12.95%	11.39%
1998	28.58%	14.82%	10.76%	9.44%
1999	21.04%	-8.85%	-7.45%	-1.69%
2000	-9.11%	59.70%	12.87%	9.45%
Geometric Mean	10.71%	9.44%	5.66%	5.48%
Arithmetic Mean	12.66%	11.68%	6.00%	5.78%
Standard Deviation	20.24%	22.27%	8.80%	8.17%
Median	16.48%	11.26%	3.97%	4.45%

Tabulation of Risk Rate Differentials for
S&P Public Utility Index and Public Utility Bonds
For the Years 1928-2000, 1952-2000, 1974-2000, and 1979-2000

Total Returns	Range: Geometric Mean	Range: Median	Midpoint	Point Estimate: Arithmetic Mean	Average of the Midpoint of Range and Point Estimate
1928-2000					
S&P Public Utility Index	9.44%	11.26%		11.68%	
Public Utility Bonds	5.48%	4.45%		5.78%	
Risk Differential	3.96%	6.81%	5.39%	5.90%	5.65%
1952-2000					
S&P Public Utility Index	12.25%	12.36%		13.50%	
Public Utility Bonds	6.31%	4.94%		6.64%	
Risk Differential	5.94%	7.42%	6.68%	6.86%	6.77%
1974-2000					
S&P Public Utility Index	15.53%	14.82%		17.02%	
Public Utility Bonds	9.35%	9.45%		9.75%	
Risk Differential	6.18%	5.37%	5.78%	7.27%	6.53%
1979-2000					
S&P Public Utility Index	16.98%	14.95%		18.18%	
Public Utility Bonds	10.05%	9.82%		10.44%	
Risk Differential	6.93%	5.13%	6.03%	7.74%	6.89%

Adjusted Betas for
Alliance RTO Group

Company	Value Line
Ameren Corporation	0.55
American Electric Power Co.	0.55
CMS Energy Corporation	0.55
DPL, Inc.	0.60
DTE Energy Company	0.60
Dominion Resources, Inc.	0.55
Exelon Corporation	NMF
FirstEnergy Corporation	0.60
Average	0.57

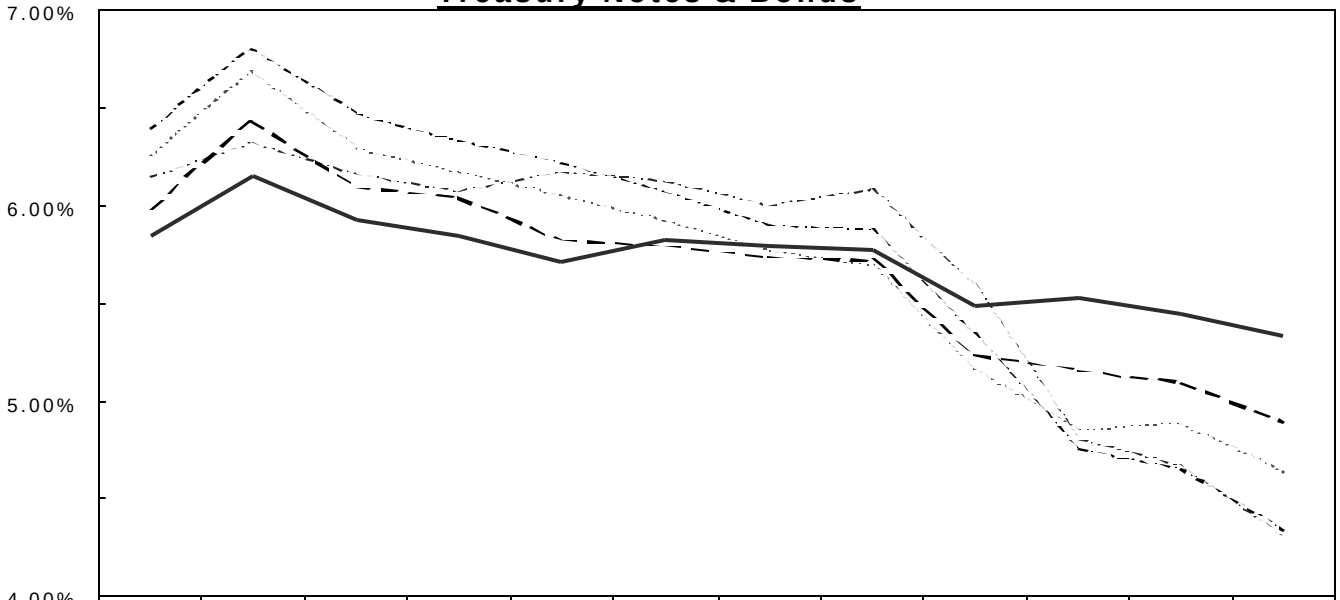
Source of Information:
Value Line Investment Survey
issues dated March 9, 2001 and April 6, 2001

Adjusted Betas for
the Gas Distribution Group

Company	Value Line
Atmos Energy Corp.	0.55
Laclede Gas Company	0.50
NICOR, Inc.	0.60
Peoples Energy	0.70
SEMCO Energy	0.65
Average	0.60

Source of Information:
Value Line Investment Survey
issue dated March 23, 2001

Yields on Treasury Notes & Bonds



	Apr '00	May'00	Jun '00	Jul '00	Aug '00	Sep '00	Oct '00	Nov '00	Dec '00	Jan '01	Feb '01	Mar '01
1-Year	6.15%	6.33%	6.17%	6.08%	6.18%	6.13%	6.01%	6.09%	5.60%	4.81%	4.68%	4.30%
2-Year	6.40%	6.81%	6.48%	6.34%	6.23%	6.08%	5.91%	5.88%	5.35%	4.76%	4.66%	4.34%
5-Year	6.26%	6.69%	6.30%	6.18%	6.06%	5.93%	5.78%	5.70%	5.17%	4.86%	4.89%	4.64%
10-Year	5.99%	6.44%	6.10%	6.05%	5.83%	5.80%	5.74%	5.72%	5.24%	5.16%	5.10%	4.89%
30-Year	5.85%	6.15%	5.93%	5.85%	5.72%	5.83%	5.80%	5.78%	5.49%	5.54%	5.45%	5.34%

Interest Rates for Treasury Constant Maturities
Yearly for 1995-1999 and 2000
and the Twelve Months Ended March 2001

Years	1-Year	2-Year	3-Year	5-Year	7-Year	10-Year	20-Year	30-Year
1995	5.94%	6.15%	6.25%	6.38%	6.50%	6.57%	6.95%	6.88%
1996	5.52%	5.84%	5.99%	6.18%	6.34%	6.44%	6.83%	6.71%
1997	5.63%	5.99%	6.10%	6.22%	6.33%	6.35%	6.69%	6.61%
1998	5.05%	5.13%	5.14%	5.15%	5.28%	5.26%	5.72%	5.58%
1999	5.08%	5.43%	5.49%	5.55%	5.79%	5.65%	6.20%	5.87%
Five-Year Average	5.44%	5.71%	5.79%	5.90%	6.05%	6.05%	6.48%	6.33%
2000	6.11%	6.26%	6.22%	6.15%	6.20%	6.03%	6.23%	5.94%
Months								
Apr-00	6.15%	6.40%	6.36%	6.26%	6.27%	5.99%	6.18%	5.85%
May-00	6.33%	6.81%	6.77%	6.69%	6.69%	6.44%	6.55%	6.15%
Jun-00	6.17%	6.48%	6.43%	6.30%	6.33%	6.10%	6.28%	5.93%
Jul-00	6.08%	6.34%	6.28%	6.18%	6.22%	6.05%	6.20%	5.85%
Aug-00	6.18%	6.23%	6.17%	6.06%	6.05%	5.83%	6.02%	5.72%
Sep-00	6.13%	6.08%	6.02%	5.93%	5.98%	5.80%	6.09%	5.83%
Oct-00	6.01%	5.91%	5.85%	5.78%	5.84%	5.74%	6.04%	5.80%
Nov-00	6.09%	5.88%	5.79%	5.70%	5.78%	5.72%	5.98%	5.78%
Dec-00	5.60%	5.35%	5.26%	5.17%	5.28%	5.24%	5.64%	5.49%
Jan-01	4.81%	4.76%	4.77%	4.86%	5.13%	5.16%	5.65%	5.54%
Feb-01	4.68%	4.66%	4.71%	4.89%	5.10%	5.10%	5.62%	5.45%
Mar-01	4.30%	4.34%	4.43%	4.64%	4.88%	4.89%	5.49%	5.34%
Twelve-Month Average	5.71%	5.77%	5.74%	5.71%	5.80%	5.67%	5.98%	5.73%
Six-Month Average	5.25%	5.15%	5.14%	5.17%	5.34%	5.31%	5.74%	5.57%
Three-Month Average	4.60%	4.59%	4.64%	4.80%	5.04%	5.05%	5.59%	5.44%

Measures of the Risk-Free Rate

The forecast of Treasury yields
per the consensus of nearly 50 economists
reported in the Blue Chip Financial Forecasts dated April 1, 2001

Year	Quarter	1-Year Treasury Bill	2-Year Treasury Note	5-Year Treasury Note	10-Year Treasury Note	30-Year Treasury Bond
2001	Second	4.2%	4.2%	4.5%	4.8%	5.2%
2001	Third	4.1%	4.2%	4.5%	4.8%	5.2%
2001	Fourth	4.2%	4.3%	4.5%	4.9%	5.3%
2002	First	4.3%	4.4%	4.6%	5.0%	5.3%
2002	Second	4.4%	4.6%	4.8%	5.1%	5.4%
2002	Third	4.5%	4.7%	4.9%	5.2%	5.5%

THE VALUE LINE Investment Survey®

Part 1
Summary & Index

File at the front of the *Ratings & Reports* binder. Last week's *Summary & Index* should be removed.

March 30, 2001

TABLE OF SUMMARY & INDEX CONTENTS

The Median of Estimated
PRICE-EARNINGS RATIOS
of all stocks with earnings

15.4

26 Weeks Ago	Market Low	Market High
14.0	10-28-87	4-22-98
	10.6	19.7

The Median of Estimated
DIVIDEND YIELDS
(next 12 months) of all dividend paying stocks under review

2.1%

26 Weeks Ago	Market Low	Market High
2.2%	10-28-87	4-22-98
	3.7%	1.6%

The Estimated Median Price
APPRECIATION POTENTIAL
of all 1700 stocks in the hypothesized economic environment 3 to 5 years hence

90%

26 Weeks Ago	Market Low	Market High
85%	10-28-87	4-22-98
	120%	35%

ANALYSES OF INDUSTRIES IN ALPHABETICAL ORDER WITH PAGE NUMBER

Numeral in parenthesis after the industry is rank for probable performance (next 12 months).

*Reviewed in this week's edition.

In three parts: This is Part 1, the Summary & Index. Part 2 is Selection & Opinion. Part 3 is Ratings & Reports. Volume LVI, No. 30.
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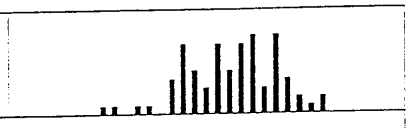
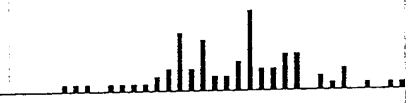
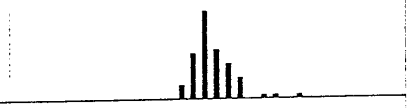
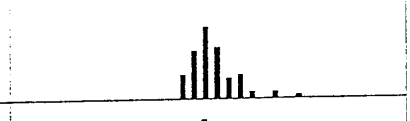
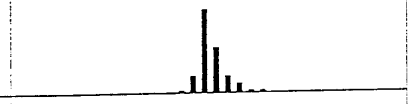
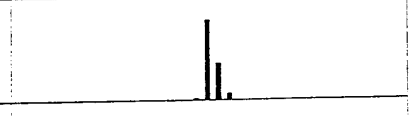
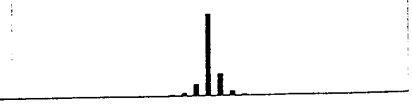
Table 2-1

Basic Series: Summary Statistics of Annual Total Returns

from 1926 to 2000

Series	Geometric Mean	Arithmetic Mean	Standard Deviation	Distribution
Large Company Stocks	11.0%	13.0%	20.2%	
Small Company Stocks	12.4	17.3	33.4	
Long-Term Corporate Bonds	5.7	6.0	8.7	
Long-Term Government	5.3	5.7	9.4	
Intermediate-Term Government	5.3	5.5	5.8	
U.S. Treasury Bills	3.8	3.9	3.2	
Inflation	3.1	3.2	4.4	

*The 1933 Small Company Stocks Total Return was 142.9 percent.

Comparable Earnings Approach
Using All Value Line Non-Utility Companies with
Timeliness of 2, 3 & 4; Safety Rank of 1, 2 & 3; Financial Strength of B, B+, B++, A & A+;
Price Stability of 85 to 100; Betas of .05 to .70; and Technical Rank of 3 &4

Company	Industry	Timeliness Rank	Safety Rank	Financial Strength	Price Stability	Beta	Technical Rank
Alexander & Baldwin	MARITIME	3	3	B+	90	0.70	3
Ameron Int'l	BUILDING	2	3	B+	90	0.65	3
Baldor Electric	ELECEQ	4	2	B++	95	0.70	3
Banta Corp.	PUBLISH	3	3	B+	85	0.70	3
Butler Mfg.	BUILDING	3	3	B++	90	0.65	3
Chemed Corp.	DIVERSIF	3	3	B	95	0.50	3
CLARCOR Inc.	PACKAGE	3	2	B++	85	0.70	3
Curtiss-Wright	MACHINE	3	2	B++	95	0.65	3
Dean Foods	FOODPROC	4	3	B+	85	0.65	4
Franklin Electric	ELECEQ	4	3	B+	95	0.50	4
Heinz (H.J.)	FOODPROC	3	1	A+	95	0.65	3
Hershey Foods	FOODPROC	3	1	A+	95	0.60	3
Hormel Foods	FOODPROC	4	1	A	95	0.55	4
Kellogg	FOODPROC	4	2	B++	85	0.65	4
Lance, Inc.	FOODPROC	3	3	B+	90	0.55	3
Lawson Products	METALFAB	3	2	A	90	0.60	4
Libbey, Inc.	HOUSEPRD	4	3	B	90	0.55	4
McCormick & Co.	FOODPROC	3	2	B++	95	0.55	3
Murphy Oil Corp.	OILINTEG	3	3	B+	90	0.65	4
NCH Corp.	CHEMSPEC	3	2	B++	95	0.60	4
Quaker Chemical	CHEMSPEC	3	3	B+	90	0.70	3
Sara Lee Corp.	FOODPROC	3	1	A+	90	0.70	3
Selective Ins. Group	INSPRPTY	3	3	B+	90	0.65	2
Sensient Techn.	FOODPROC	3	2	B++	95	0.65	2
Smucker (J.M.)	FOODPROC	3	2	B++	90	0.60	2
Standard Register	OFFICE	3	3	B	85	0.60	3
Standex Int'l	DIVERSIF	3	2	B++	85	0.70	3
Tecumseh Products 'A'	MACHINE	4	2	A	85	0.60	3
Tennant Co.	MACHINE	4	2	B++	90	0.55	3
Tootsie Roll Ind.	FOODPROC	3	1	A+	95	0.60	3
Universal Corp.	TOBACCO	2	2	A	85	0.60	3
WD-40 Co.	CHEMSPEC	4	2	A	90	0.50	3
Weis Markets	GROCERY	4	1	A	100	0.60	3
Average		3	2	B++	91	0.62	3
Alliance RTO Group	Range	3	1 to 3	B to A+	90 to 100	.55 to .60	3
	Average	3	2	B++	96	0.57	3
Gas Distribution Group	Range	2 to 4	1 to 3	B+ to A+	85 to 100	.50 to .70	3 to 5
	Average	3	2	B++	95	0.5	3

Comparable Earnigns Approach
Five -Year Average Historical Earned Returns
for Years 1995-1999 and
Projected 3-5 Year Returns

Company	1995	1996	1997	1998	1999	Average	Projected 2003-05
Alexander & Baldwin	6.1%	9.1%	9.6%	8.6%	10.8%	8.8%	13.0%
Ameron Int'l	9.3%	10.6%	12.7%	9.7%	12.0%	10.9%	10.0%
Baldor Electric	15.3%	17.6%	16.6%	16.9%	16.4%	16.6%	16.5%
Banta Corp.	13.8%	12.1%	12.5%	12.9%	14.6%	13.2%	16.0%
Butler Mfg.	22.9%	20.7%	13.5%	11.8%	14.1%	16.6%	12.0%
Chemed Corp.	10.0%	14.6%	7.5%	8.9%	9.3%	10.1%	10.5%
CLARCOR Inc.	16.8%	16.4%	16.5%	17.2%	16.8%	16.7%	16.0%
Curtiss-Wright	10.6%	8.8%	12.6%	12.7%	12.3%	11.4%	11.0%
Dean Foods	13.7%	9.5%	15.3%	14.2%	11.4%	12.8%	18.5%
Franklin Electric	19.2%	21.5%	25.0%	27.1%	27.8%	24.1%	17.0%
Heinz (H.J.)	24.4%	27.0%	36.2%	48.9%	58.0%	38.9%	41.5%
Hershey Foods	25.8%	26.6%	39.4%	31.9%	26.9%	30.1%	28.0%
Hormel Foods	16.5%	11.2%	13.2%	15.0%	19.0%	15.0%	17.0%
Kellogg	47.9%	49.0%	70.6%	61.7%	74.5%	60.7%	42.5%
Lance, Inc.	9.8%	13.3%	14.8%	14.8%	13.7%	13.3%	14.5%
Lawson Products	17.2%	15.5%	15.3%	13.6%	15.9%	15.5%	14.0%
Libbey, Inc.			36.1%	39.8%	47.3%	41.1%	21.0%
McCormick & Co.	18.8%	18.5%	25.0%	27.2%	31.8%	24.3%	35.5%
Murphy Oil Corp.	2.7%	12.3%	12.3%	4.5%	9.4%	8.2%	16.5%
NCH Corp.	12.1%	11.5%	9.6%	11.6%	17.5%	12.5%	10.0%
Quaker Chemical	7.1%	12.5%	16.1%	16.2%	19.0%	14.2%	30.0%
Sara Lee Corp.	18.8%	19.7%	22.3%	59.1%	88.3%	41.6%	63.0%
Selective Ins. Group	12.1%	11.7%	12.3%	8.8%	9.4%	10.9%	10.5%
Sensient Techn.	15.7%	17.4%	17.0%	17.9%	18.6%	17.3%	19.5%
Smucker (J.M.)	10.7%	10.6%	12.0%	11.6%	11.5%	11.3%	16.5%
Standard Register	11.6%	13.9%	13.7%	11.4%	10.3%	12.2%	9.5%
Standex Int'l	26.4%	22.8%	19.1%	19.3%	18.9%	21.3%	18.0%
Tecumseh Products 'A'	13.6%	12.2%	10.0%	9.8%	13.1%	11.7%	9.5%
Tennant Co.	17.2%	16.3%	18.1%	19.3%	17.7%	17.7%	16.0%
Tootsie Roll Ind.	14.8%	15.1%	17.3%	17.0%	16.6%	16.2%	16.0%
Universal Corp.	9.3%	17.1%	21.5%	23.8%	23.6%	19.1%	17.5%
WD-40 Co.	46.0%	45.1%	41.6%	39.8%	39.3%	42.4%	30.5%
Weis Markets	10.0%	9.6%	9.4%	8.5%	8.5%	9.2%	9.0%
Average						19.6%	19.6%
Median						15.5%	16.5%