Exhibit No. __T(DCP-1T)
Dockets UE-072300/
UG-072301/UG-080064
Witness: David C. Parcell

BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION, Complainant, v. PUGET SOUND ENERGY, INC., Respondent.	DOCKET UE-072300 DOCKET UG-072301 *(Consolidated)* DOCKET UG-080064

TESTIMONY OF

DAVID C. PARCELL

ON BEHALF OF

STAFF OF
WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION

Cost of Capital

MAY 30, 2008

TABLE OF CONTENTS

LIST OF EXHIBITS

I. INTRODUCTION

Q. Please state your name, occupation, and business address.

A. My name is David C. Parcell. I am President and Senior Economist of Technical Associates, Inc. My business address is Suite 601, 1051 East Cary Street, Richmond, Virginia 23219.

Q. Please summarize your educational background and professional experience.

A. I hold B.A. (1969) and M.A. (1970) degrees in economics from Virginia Polytechnic Institute and State University (Virginia Tech) and a M.B.A. (1985) from Virginia Commonwealth University. I have been a consulting economist with Technical Associates since 1970. I have provided cost of capital testimony in public utility ratemaking proceedings dating back to 1972. In connection with this, I have previously filed testimony and/or testified in over 400 utility proceedings before some 40 regulatory agencies in the United States and Canada. Attachment 1 provides a more complete description of my education and relevant work experience.

Q. What is the purpose of your testimony in this proceeding?

A. I have been retained by the Staff of the Washington Utilities and Transportation Commission ("UTC") to evaluate the cost of capital aspects of the filing of Puget Sound Energy, Inc. ("PSE" or "the Company") in these dockets. I have performed independent studies and am making recommendations of the current cost of capital for PSE. In addition, because PSE is a subsidiary of Puget Energy, Inc. ("PE"), I also have evaluated this entity in my analyses.

Q. Have you prepared any exhibits in support of your testimony?

A. Yes, I have. Exhibit No. __ (DCP-2) consists of Schedule 1 through Schedule 15 and represents the analyses that support my cost of capital recommendation. This exhibit was prepared either by me or under my direction. The information contained in this exhibit is correct to the best of my knowledge and belief.

I have also prepared Exhibit No. __ (DCP-3), which consists of Moody's and Standard and Poors' recent descriptions of PSE, as well as announcements to the proposed acquisition of PE by Macquarie Infrastructure Partners Consortium.

II. RECOMMENDATIONS AND SUMMARY

Q. What is your overall cost of capital recommendation in this proceeding?

A. My overall cost of capital recommendation for PSE is shown on Schedule 1 of Exhibit No. __ (DCP-2) and can be summarized as follows:

	Percent	Cost	Return
Short-Term Debt	4.93%	5.92%	0.29%
Long-Term Debt	50.04%	6.90%	3.45%
Preferred Stock	0.03%	8.61%	0.00%
Common Equity	45.00%	9.50-10.50%	4.28-4.73%
Total	100.00%		8.02-8.47%
			8.25% mid-point

My specific cost of capital recommendation for PSE is a cost of equity of 10.0 percent and a total cost of capital of 8.25 percent. My 10.0 percent cost of equity recommendation compares to the 10.4 percent cost of equity established by the UTC in PSE's 2006 rate proceeding.

PSE requests a return on common equity of 10.80 percent and overall rate of return of 8.60 percent. The only difference between PSE's proposal and my recommendation is the cost of common equity.

Q. Please summarize your cost of capital analyses and related conclusions for PSE.

A. This proceeding is concerned with PSE's regulated electric utility and natural gas distribution utility operations in Washington. My analyses are concerned with the Company's total cost of capital. The first step in performing these analyses is the development of the appropriate capital structure. PSE's proposed capital structure is the average capital structure ratios of the Company for the Rate Year November 2008 through October 2009. I have used this same capital structure in my cost of capital analyses.

The second step in a cost of capital calculation is a determination of the embedded cost rates of short-term debt, long-term debt, and preferred stock. I have used the same rates for these items as proposed by the Company.

The third step in the cost of capital calculation is the estimation of the cost of common equity. I have employed three recognized methodologies to estimate the cost of equity for PSE. Each of these methodologies is applied to three groups of proxy utilities. These three methodologies and my findings are:

Methodology	Range
Discounted Cash Flow	9.5-10.5%
Capital Asset Pricing Model	9.1-9.5%
Comparable Earnings	10.0-10.5%

Based upon these findings, I conclude that the cost of common equity for PSE is within a range of 9.5 percent to 10.5 percent (10.0 percent mid-point), which reflects greater weight to the Discounted Cash Flow ("DCF") model results. This range is verified by the results of all three of my cost of equity methodology results, since all three sets of results fall within this range.

Combining these three steps into a weighted cost of capital results in an overall rate of return range of 8.02 percent to 8.47 percent. My recommended 10.0 percent cost of equity results in an overall cost of capital of 8.25 percent.

Q. Are you aware that, in recent orders, the UTC has expected cost of capital witnesses to support their recommendations with a description of changes in capital markets since the utility's last rate case was decided?

A. Yes, I am. I have reviewed the UTC's decision in the 2006 PSE case (Order 08 in Dockets UE-060266 and UG-060267). In that order, the UTC stated at paragraph 84: "Little of the extensive testimony offered on this subject focuses squarely on what might have changed in the capital markets or at PSE in the last 18 months to justify a change in the ROE set by the Commission in February of 2005."

In the 2006 case, the UTC slightly increased PSE's cost of equity from the 10.3 percent it had granted previously to 10.4 percent based in part on its finding that no meaningful changes had occurred in the capital markets.

Q. How have capital costs changed since the last PSE rate order to justify a decrease in the Company's authorized return on equity?

A. Yes. My Schedule 2 provides insight to this. As this indicates, long-term interest rates at the present time are in some cases lower and in some cases at about the same level or slightly lower than was the case in mid-2006 – the timeframe of the PSE testimony. Over the past two years (*i.e.*, timeframe of last PSE case), short-term rates have declined significantly, as the yield on 3-month Treasury bonds declined from near 5 percent to the current level of less than 2 percent. Over the same period, yields on 20-year Treasury bonds declined from over 5 percent to under 4 percent. Meanwhile, the yields on corporate bonds are about the same as was the case two years ago.

In addition, the average authorized return on equity for newly-issued rate orders for electric and gas utilities are slightly lower in 2007, versus the levels of 2005 and 2006.

A demonstration of this decline is actually provided in PSE witness Roger A. Morin's "allowed risk premiums" study. In response to Staff Data Request No. 081, Dr. Morin identified the following average annual allowed returns on equity for U.S. electric utilities:

Year	Average ROE Allowed
2002	11.16%
2003	10.97%
2004	10.75%
2005	10.54%
2006	10.36%
2007	10.30%

Finally, the current weakness in the economy, along with a perceived threat of a recession, is a factor that reduces the cost of equity.

Q. Based upon these trends and the UTC's stated preference to track cost of equity changes to capital market changes, what is the most appropriate cost of equity for PSE at this time?

A. Given the fact that interest rates have generally declined from the time PSE's last return on equity was established by the UTC, as well as the declining return on equity awards for electric and gas utilities throughout the U.S., I believe it is proper to set PSE's cost of equity at 10.0 percent. This is the mid-point of my DCF findings, which the UTC prefers, and is consistent with the findings of my Capital Asset Pricing Model ("CAPM") and Comparable Earnings ("CE") analyses. I believe the 40 basis point reduction from the 10.4 percent established in the 2006 PSE rate case is appropriate given changes in the capital markets since that case was decided.

I also note that PSE's capital structure, for ratemaking purposes, contains more equity (*i.e.,* 45.0 percent) than existed at the end of the test period (40.84 percent) as well as that approved in the Company's last rate proceeding (44.0 percent). This reflects less financial risk currently, a factor that has been recognized by the rating agencies.

III. ECONOMIC/LEGAL PRINCIPLES AND METHODOLOGIES

Q. What are the primary economic and legal principles that establish the standards for determining a fair rate of return for a regulated utility?

A. Public utility rates are normally established in a manner designed to allow the recovery of their costs, including capital costs. This is frequently referred to as "cost of service" ratemaking. Rates for regulated public utilities traditionally have been primarily established using the "rate base - rate of return" concept. Under this method, utilities are allowed to recover a level of operating expenses, taxes, and depreciation deemed reasonable for rate-setting purposes, and are granted an opportunity to earn a fair rate of return on the assets utilized (*i.e.*, rate base) in providing service to their customers.

The rate base is derived from the asset side of the utility's balance sheet as a dollar amount and the rate of return is developed from the liabilities/owners' equity side of the balance sheet as a percentage. The revenue impact of the cost of capital is thus derived by multiplying the rate base by the rate of return (including income taxes).

The rate of return is developed from the cost of capital, which is estimated by weighting the capital structure components (*i.e.*, debt, preferred stock, and common equity) by their percentages in the capital structure and multiplying these by their cost rates. This is also known as the weighted cost of capital.

Technically, "fair rate of return" is a legal and accounting concept that refers to an ex post (after the fact) earned return on an asset base, while the cost of capital is an economic and financial concept which refers to an *ex ante* (before the fact) expected or required return on a liability base. In regulatory proceedings, however, the two terms are often used interchangeably, as I have done in my testimony.

From an economic standpoint, a fair rate of return is normally interpreted to mean that an efficient and economically managed utility will be able to maintain its financial integrity, attract capital, and establish comparable returns for similar risk investments.

These concepts are derived from economic and financial theory and are generally implemented using financial models and economic concepts.

Although I am not a lawyer and I do not offer a legal opinion, my testimony is based on my understanding that two United States Supreme Court decisions provide the main standards for a fair rate of return. The first decision is Bluefield Water Works and Improvement Co. v. Public Serv. Comm'n of West Virginia, 262 U.S. 679 (1923). In this decision, the Court stated:

> What annual rate will constitute **just compensation** depends upon many circumstances and must be **determined by** the **exercise of fair and enlightened judgment**, having regard to all relevant facts. A **public utility** is entitled to such rates as will permit it to **earn a return** on the value of the property which it employs for the convenience of the public equal to that **generally being made** at the same time and in the same general part of the country on **investments in other business undertakings** which are **attended by corresponding risks and uncertainties**; but it has no **constitutional right to profits** such as are realized or anticipated in **highly profitable enterprises or speculative ventures**. The **return** should be reasonably sufficient to assure confidence in the **financial soundness** of the utility, and should be adequate, **under efficient and economical management**, to maintain and **support its credit** and **enable it to raise the money** necessary for the proper discharge of its public duties. A rate of return may be reasonable at one time, and become too high or too low by changes affecting opportunities for investment, the money market, and business conditions generally. **[Emphasis added.]**

It is my understanding that the Bluefield decision established the following standards for a fair rate of return: comparable earnings, financial integrity, and capital attraction. It also noted the changing level of required returns over time as well as an underlying assumption that the utility be operated in an efficient manner.

The second decision is Federal Power Comm'n v. Hope Natural Gas Co., 320 U.S. 591 (1942). In that decision, the Court stated:

> The rate-making process under the [Natural Gas] Act, i.e., the fixing of 'just and reasonable' rates, involves a **balancing** of the **investor** and **consumer interests** . . . . From the investor or company point of view it is important that there be enough revenue not only for operating expenses but also for the capital costs of the business. These include service on the debt and dividends on the stock. By that standard the **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**. **[Emphasis added.]**

The Hope case is also frequently credited with establishing the "end result" doctrine, which maintains that the methods utilized to develop a fair return are not important as long as the end result is reasonable.

The three economic and financial parameters in the Bluefield and Hope decisions - comparable earnings, financial integrity, and capital attraction - reflect the economic criteria encompassed in the "opportunity cost" principle of economics. The opportunity cost principle provides that a utility and its investors should be afforded an opportunity (not a guarantee) to earn a return commensurate with returns they could expect to achieve on investments of similar risk. The opportunity cost principle is consistent with the fundamental premise, on which regulation rests, namely, that it is intended to act as a surrogate for competition.

Q. How can these parameters be employed to estimate the cost of capital for a utility?

A. Neither the courts nor economic/financial theory have developed exact and mechanical procedures for precisely determining the cost of capital. This is the case because the cost of capital is an opportunity cost and is prospective-looking, which dictates that it must be estimated.

There are several useful models that can be employed to assist in estimating the cost of equity capital, which is the capital structure item that is the most difficult to determine. These include the Discounted Cash Flow, Capital Asset Pricing Model, Comparable Earnings and Risk Premium ("RP") methods. Each of these methods (or models) differs from the others and each, if properly employed, can be a useful tool in estimating the cost of common equity for a regulated utility.

Q. Which methods have you employed in your analyses of the cost of common equity in this proceeding?

A. I have utilized three methodologies to determine PSE's cost of common equity: the DCF, CAPM, and CE methods. I have not employed a RP model in my analyses although, as I indicate later, my CAPM analysis is a form of the RP methodology. Each of these methodologies will be described in more detail in my testimony that follows.

IV. GENERAL ECONOMIC CONDITIONS

Q. Why are economic and financial conditions important in determining the costs of capital?

A. The costs of capital, for both fixed-cost (debt and preferred stock) components and common equity, are determined in part by current and prospective economic and financial conditions. At any given time, each of the following factors has an influence on the costs of capital: the level of economic activity (*i.e.*, growth rate of the economy), the stage of the business cycle (*i.e.*, recession, expansion, or transition), and the level of

inflation, and expected economic conditions. My understanding is that this position is consistent with the Supreme Court Bluefield decision that noted "[a] rate of return may be reasonable at one time, and become too high or too low by changes affecting opportunities for investment, the money market, and business conditions generally."

Q. What indicators of economic and financial activity have you evaluated in your analyses?

A. I have examined several sets of economic statistics from 1975 to the present. I chose this time period because it permits the evaluation of economic conditions over three full business cycles plus the current cycle to date, allowing for an assessment of changes in long-term trends. This period also approximates the beginning and continuation of active rate case activities by public utilities.

A business cycle is commonly defined as a complete period of expansion (recovery and growth) and contraction (recession). A full business cycle is a useful and convenient period over which to measure levels and trends in long-term capital costs because it incorporates the cyclical (*i.e.*, stage of business cycle) influences, and thus, permits a comparison of structural (or long-term) trends.

Q. Please describe the timeframe of the three prior business cycles and the most current cycle.

A. The three prior complete cycles and current cycle cover the following periods:

Business Cycle	Expansion Cycle	Contraction Period
1975-1982	Mar. 1975-July 1981	Aug. 1981-Oct. 1982
1982-1991	Nov. 1982-July 1990	Aug. 1990-Mar. 1991
1991-2001	Apr. 1991-Mar. 2001	Apr. 2001-Nov. 2001
Current	Dec. 2001-Present (?)	

Q. Do you have any general observations concerning the changing trends in economic conditions and their impact on costs over this broad period?

A. Yes, I do. As I will describe below, the U.S. economy has enjoyed general prosperity and stability over the period since the early 1980s. This period has been characterized by longer economic expansions, relatively tame contractions, relatively low and declining inflation, and declining interest rates and other capital costs. The current business cycle began in late 2001, following a somewhat modest recession earlier in the year. Over the past several months, the economy has slowed, largely as a result of the collapse of the "sub-prime" mortgage market and related liquidity crises in the financial sector of the economy. There is, in fact, some concern that the economy may already be in a recession, but this is unclear at this time. Should the economy incur a recession, or even experience a significant lowering of growth, the impacts on cost of capital would likely be characterized by lower utility growth and declining capital costs.

Q. Please describe recent and current economic and financial conditions and their impact on the costs of capital.

A. Exhibit No. __ (DCP-2), Schedule 2 shows several sets of economic data. Pages 1 and 2 contain general macroeconomic statistics while Pages 4 through 6 contain financial

market statistics. Pages 1 and 2 of Schedule 2 show that the U.S. economy is currently beginning the sixth year of an economic expansion although, as indicated previously, the economy is currently slowing. This is indicated by the growth in real (*i.e.*, adjusted for inflation) Gross Domestic Product, industrial production, and the unemployment rate. This recent expansion has generally been characterized as slower growth, in comparison to prior expansions. This has resulted in lower inflationary pressures and interest rates. In addition, the current slowing of the economy has resulted in a lowering of interest rates.

The rate of inflation is also shown on Pages 1 and 2 of Schedule 2. As is reflected in the Consumer Price Index (CPI), for example, inflation rose significantly during the 1975-1982 business cycle and reached double-digit levels in 1979-1980. The rate of inflation declined substantially in 1981 and remained at or below 6.1 percent during the 1983-1991 business cycle. Since 1991, the CPI has been 4.1 percent or lower. The 4.1 percent rate of inflation in 2007 was slightly above the levels since 2000, but is well below the levels of the past thirty years.

Q. What have been the trends in interest rates?

A. Pages 3 and 4 of Schedule 2 show several series of interest rates. Rates rose sharply to record levels in 1975-1981 when the inflation rate was high and generally rising. Interest rates declined substantially in conjunction with inflation rates throughout the remainder of the 1980s throughout the 1990s. Interest rates declined even further from 2000-2005 and generally recorded their lowest levels since the 1960s.

During the past several years, long-term interest rates have remained low by historic standards. During the 2001 recession and early in the succeeding expansion, the Federal Reserve lowered interest rates (*i.e.*, Federal Funds rate) 11 times in 2001 and twice in 2003 in an effort to stimulate the economy. Following this the Federal Reserve increased short-term interest rates on 17 occasions between 2004 and 2006, although each time by only 0.25 percent, in an attempt to ensure that any perceived inflationary expectations will not stifle continued economic growth. Nevertheless, the Federal Reserve actions did not result in a pronounced increase in long-term rates. Most recently, however, the Federal Reserve has lowered the Federal Funds rate (*i.e.*, short-term rate) on six occasions. (See my comment earlier regarding the statement that interest rates have generally declined since the last rate case)

Q. What have been the trends in common share prices?

A. Pages 5 and 6 of Schedule 2 show several series of common stock prices and ratios. These indicate that share prices were essentially stagnant during the high inflation/interest rate environment of the late 1970s and early 1980s. On the other hand, the 1983-1991 business cycle and the most recent cycle have witnessed a significant upward trend in stock prices. During the initial years of the current expansion, however, stock prices were volatile and declined substantially from their highs reached in 1999 and early 2000. Share prices have increased somewhat since 2003 but have been volatile.

Q. What conclusions do you draw from this discussion of economic and financial conditions?

A. It is apparent that capital costs are currently low in comparison to the levels that have prevailed over the past three decades. In addition, the current weakness in the economy has resulted in a decline in capital costs. Therefore, it can reasonably be expected that cost of equity models currently indicate returns that are lower than returns experienced in prior years. As noted elsewhere in my testimony, this is a factor that should be considered in establishing the current cost of equity for PSE.

V. PUGET SOUND ENERGY'S OPERATIONS AND RISKS

Q. Please summarize PSE and its operations.

A. PSE, in its current configuration, was formed in 1997 when Puget Sound Power & Light merged with Washington Energy. PSE is a public utility that has two regulated business segments: (1) it is engaged in the distribution, transmission, generation, purchase and sale of electric energy to about 1 million customers in the Puget Sound region of Washington and, (2) it has gas distribution service to about 730,000 customers in the same area. PSE has four unregulated subsidiaries - Puget Western, Inc., Hydro Energy Development Co., WNG Cap I, Inc., and PSE Funding, Inc. PSE is a subsidiary of PE. I note that PSE's regulated electric and gas operations are recognized as being lower risk than the unregulated operations. This relationship is recognized by the rating agencies in the cited reports that appear later in this section.

Q. Please describe Puget Energy.

A. PE is a holding company, which was formed in 2001 to own PSE, which is its only subsidiary. The common stock of PE is traded on the New York Stock Exchange.

PE presently has an application pending before the UTC to be acquired by Macquarie Infrastructure Partners Consortium. If the transaction is consummated, PSE will pay $30 in cash for each outstanding share of PE common stock, and PE's stock would cease to be publicly traded. Moreover, PE's ultimate parent would not be publicly traded, a financial transaction frequently described as "going private." PSE would be a subsidiary of Puget Holdings, Inc. ("PH"), which will in turn be wholly-owned by the Macquarie consortium.

Q. Is the proposed merger expected to impact the capital structure of PSE?

A. Yes, it is. According to PSE's response to Staff Data Request No. 73, "If the merger is approved and the transaction closes, Puget Sound Energy, Inc.'s ("PSE") corporate capital structure is expected to change . . . PSE has not determined the regulatory capital structure resulting from the merger." This response further identifies the following pro-forma September 30, 2008 "rollforward balance sheet" for PSE:

Capital Item	Pre-merger	Post-merger
Total Debt	56.3%	49.6%
Common Equity	43.7%	50.4%

Q. Does PSE indicate any change in its cost of capital as a result of the proposed merger?

A. PSE was asked this question in Staff Data Request No. 75. Its response was that "...Puget Holdings, Inc. and Puget Sound Energy, Inc. ("PSE") state that they will not advocate for a higher cost of debt or equity capital as compared to what PSE's cost of debt or equity would have been absent Puget Holding's ownership." This response does not address the extent, if any, that PSE's cost of equity may decline as a result of the merger. In this regard, I note that the post-merger "rollforward" capital structure of PSE contains a higher common equity ratio than the pre-merger capital structure. This differential would indicate a reduction in PSE's financial risk and a resulting reduction in PSE's cost of equity.

Q. Are you aware that PSE is maintaining, in its testimony in the merger proceeding (Docket U-072375), that because of "ring-fencing" provisions, the utility and its customers are insulated from holding company activities or difficulties?

A. Yes, I am aware of this. I note, on the other hand, that the Moody's and Standard & Poors put PE and PSE on review or CreditWatch with negative implications despite the proposed ring-fencing provisions. My Exhibit No. __ (DCP-3) contains the documents in which Moody's and Standard & Poor's took this action.

In addition, PSE will remain dependent on its parent(s) for future equity infusions, which apparently will be provided by debt at the parent level. It is not necessarily correct to assume that such credit will always be available on favorable terms and that PSE will have continuous access to equity capital. In any event, there is no way for the UTC to assume any such guarantee of access to common equity from PSE's parent(s).

Q. Does PSE's cost of capital witness in this proceeding acknowledge any impact of the merger on PSE's cost of capital?

A. In response to a Staff Data Request No. 79, PSE's cost of capital witness, Dr. Morin, stated,

> In view of the stand-alone approach used by Dr. Roger Morin in estimating Puget Sound Energy's ("PSE") cost of equity, Puget Energy's cost of capital or how the merger may impact the latter were not germane to Dr. Morin's testimony.
>
> Dr. Morin does not expect adverse impact on PSE's financial integrity and cost of capital if the merger is approved and the transaction closes.

Q. Do you have any comments on this response?

A. Yes, I do. Dr. Morin did not consider the impacts of the merger in developing his recommendation for PSE's current cost of equity. While Dr. Morin's "stand alone approach" may be valid, his response did not answer the question as to whether the merger may impact the Company's cost of capital. In conclusion, PSE's position in this case is that the merger was not considered by the witness in developing a cost of equity recommendation, and the UTC should not consider the impacts of this transaction on PSE's rate of return in this proceeding.

Q. What is the reaction of the major bond rating agencies to the announced merger?

A. As I mentioned earlier and demonstrated in Exhibit No. __ (DCP-3), both Moody's and Standard & Poor's placed both PSE and PE on CreditWatch (S&P) or review (Moody's) following the announcement of the proposed merger. Both agencies state the merger could negatively impact PSE's and PE's credit ratings.

Q. What are the potential negative impacts that the rating agencies seem to be concerned about and how could this impact the future rates of PSE?

A. As I read the rating agency reports, the expressed concerns appear to apply to the manner in which the proposed merger is to be financed (*i.e.*, primarily with debt at the parent level). The substantial leverage at the parent level, notwithstanding the use of "ring-fencing" at PSE, is expressed as a reason for a potential downgrading of PSE's debt. Such a downgrading, should it occur, would eventually result in higher debt costs as new debt is issued with lower ratings by PSE which, in turn, could result in higher rates if the higher debt costs are allowed in rates (notwithstanding the intended prohibition of this by Commitment 25 of the merger application).

Q. What has been the trend in PE's business segment ratios in recent years?

A. PE reports two business segments – regulated utility and other. The other subsidiaries do not contribute significantly to PE's financial operations. The segment ratios are shown on Schedule 3 of Exhibit No. __ (DCP-2). As indicated, the regulated utility operations of PE accounted for the following percentages:

Year	Operating Revenues	Operating Income	Net Income	Assets
2005	99.7%	98.9%	98.2%	94.8%
2006	99.7%	99.0%	103.2%	99.0%
2007	99.6%	99.6%	99.7%	98.9%

The table above indicates that the regulated utility operations of PE account for the vast majority of its consolidated operations.

Q. What has been the trend in PSE's bond ratings in recent years?

A. This is shown on Schedule 4 of Exhibit No. __ (DCP-2). PSE's debt is rated in the A3 category (per Moody's) and A- category (per Standard & Poor's). These ratings have been in effect since 2002.

Q. What were the rating agencies' assessments of PSE prior to the merger announcement?

A. In contrast to the negative assessment of PSE following the merger announcement, PSE was viewed in a more positive light prior to the announcement. For example, on September 17, 2007, Moody's raised the rating "outlook" of PSE and noted the following:

> **Recent Events**
>
> Moody's changed the rating outlook for PSE and its parent, Puget Energy, effective May 16, 2007. The outlook change for PSE reflects Moody's view that there is potential for PSE to sustain its recent financial performance, particularly if the utility continues to efficiently manage its resource planning strategy while adding significantly to utility rate base, to conservatively address the external financial that will be necessary to fund a large portion of its higher than historical average capital program over the next several years, and to receive reasonably supportive decisions in pending and future rate proceedings at the WUTC related to its ever-growing rate base and persistently higher than historical average natural gas costs.
>
> The change in Puget Energy's rating outlook takes into account the fact that PSE is Puget Energy's sole source of earnings and cash flow since the sale of InfrastruX, a construction services business, which was the last remaining non-regulated subsidiary of Puget Energy. As a result, PSE substantially drives the credit rating and outlook of its parent.
>
> **Rating Rational**
>
> PSE's ratings take into account our collective assessment of several key rating factors, including the company's business, regulatory, and supply

> risk profiles, as well as key financial metrics, and liquidity. Each of these factors is elaborated on below, but in general **we note that the business risk profile is low, with all of its assets, earnings, and cash flow associated with regulated electric and natural gas operations in the state of Washington, and the regulatory risk profile has improved on an overall basis, in part due to the increasingly collaborate process associated with rate case proceedings in the past few years.** The utility's **energy supply profile has become less risky** following recent steps to reduce dependent on purchased power by adding owned regulated generating assets (i.e., wind powered electric generating plants), improvement in regional hydro conditions after a prolonged drought period that has now ended and as a result of the company's hedging program. Key financial metrics such as cash flow from operations (exclusive of working capital changes) coverage of interest and debt, as well as adjusted debt to adjusted total capitalization have benefited from regulatory support for investments in utility infrastructure and the parent company's demonstrated willingness and ability to issue significant amounts of common equity and then invest the proceeds into PSE to fund capital investments and reduce the percentage of debt in the capital structure that peaked near 65% during the western power crisis several years ago. Collectively, we believe each of these factors is consistent with the Baa rating category and are thus consistent with the Baa2 rating for PSE's senior secured debt and its Baa3 Issuer Rating. **[Emphasis added]**

This clearly indicates that PSE was in an improving financial situation prior to the merger announcement. In addition, the Company was characterized as having low business risk.

Q. What are the most recent rating agency descriptions of PSE concerning its risks and prospects?

A. Standard & Poor's, in a March 26, 2008 RatingsDirect on PE, noted the following:

> The 'BBB-' corporate credit rating on Puget Energy Inc. (Puget) and PSE remains on CreditWatch with negative implications, pending the requisite approvals for final outcome of regulatory approval proceedings. The ratings reflect the **excellent business profile of PSE, a regulated, vertically integrated electric and gas utility**, and the consolidated financial risk profile of Puget.
>
> Bellevue, Wash.-based Puget had roughly $3.1 billion of total debt outstanding as of Dec. 31, 2007.

The CreditWatch listing reflects the possibility that debt ratings for Puget and PSE could be lowered contingent on the final outcome of regulatory merger approval proceedings. Importantly, **the company's credit profile has been improving, which provides financial flexibility to accommodate the proposed capital structure at the current rating level.** Still, Puget's expected consolidated credit measures post-transaction will be stretched and the final regulatory order could weaken anticipated cash flow coverage metrics.

Standard & Poor's Ratings Services placed the ratings of holding company Puget Energy Inc. and its electric and gas utility subsidiary Puget Sound Energy Inc. on CreditWatch with negative implications on Oct. 26, 2007. The action followed the announcement that Puget Energy has agreed to sell itself to a consortium of private investors led by Macquarie Infrastructure Partners, an affiliate of Macquarie Group Ltd. (A-/Stable/A-2) for $7.4 billion. The **proposed transaction is to be financed with a significant amount of debt at the holding company and is expected to increase debt leverage on a consolidated basis.**

Puget's excellent business risk profile is "excellent," reflecting the combined electric and gas utility business of PSE, which is subject to regulation by the Washington Utilities and Transportation Commission (WUTC). The regulatory environment in Washington and how the company manages its relationship with the WUTC are key drivers of credit quality, especially in light of PSE's high capital needs and commodity price exposure. The company's most recent general rate case grated PSE a 10.4% return on equity on a hypothetical 44% equity layer, as well as permission to recover costs of recent plant additions and for short-term financing needs related to power supply hedging. The commission did not approve the company's requests for a gas "decoupling" mechanism, a depreciation tracker, and a modification to its power cost adjustment (PCA) mechanism. An electric case is currently pending for a $174 million, or 9.5%, rate increase and a gas case for $56.8 million, or 5.3%, annually. Both are expected to be finalized by November.

Puget's cost recovery mechanisms also support credit quality. The company has a great degree of flexibility in implementing rate changes through its PCA, but the threshold it must meet to update rates is high and deferred costs are not automatically collected.

. . .

Puget's financial risk profile is "aggressive" under Standard & Poor's corporate risk matrix. Financial measures have been adequate for the rating, although **cash flow coverage metrics** have been mixed and **are expected to weaken if the pending acquisition by Macquarie is completed. [Emphasis added]**

My reading of this rating agency report indicates the following factors regarding PSE's risks:

- PSE has an "excellent" business profile;
- PSE's credit profile has been improving;
- PSE currently has "financial flexibility";
- S&P has reservations about the impact of the merger on PSE;
- The proposed transaction is to be financed "with a significant amount of debt at the holding company"; and,
- PSE's cost recovery mechanisms also support its credit quality.

VI. CAPITAL STRUCTURE AND COSTS OF DEBT AND PREFERRED STOCK

Q. What is the importance of determining a proper capital structure in a regulatory framework?

A. A utility's capital structure is important because the concept of rate base – rate of return regulation requires that a utility's capital structure be determined and utilized in estimating the total cost of capital. Within this framework, it is proper to ascertain whether the utility's capital structure is appropriate relative to its level of business risk and relative to other utilities.

As discussed in Section III of my testimony, the purpose of determining the proper capital structure for a utility is to help ascertain its capital costs. The rate base – rate of return concept recognizes the assets employed in providing utility services and provides for a return on these assets by identifying the liabilities and common equity (and

their cost rates) used to finance the assets. In this process, the rate base is derived from the asset side of the balance sheet and the cost of capital is derived from the liabilities/owners' equity side of the balance sheet. The inherent assumption in this procedure is that the dollar values of the capital structure and the rate base are approximately equal and the former is utilized to finance the latter.

The common equity ratio (*i.e.*, the percentage of common equity in the capital structure) is the capital structure item which normally receives the most attention. This is the case because common equity: (1) usually commands the highest cost rate; (2) generates associated income tax liabilities; and, (3) causes the most controversy since its cost cannot be precisely determined.

Q. How have you evaluated the capital structure of PSE?

A. I have first examined the five year historic (2003-2007) capital structure ratios of PSE. These are shown on Page 1 of Schedule 5 to Exhibit No. __ (DCP-2).

I have summarized below the common equity ratios for PSE:

	Including S-T Debt	Excluding S-T Debt
2003	38.9%	40.0%
2004	38.7%	40.1%
2005	43.8%	44.2%
2006	40.1%	43.0%
2007	44.4%	46.7%

This indicates a rising level of common equity over the five-year period. The 2007 level is the highest of the period, largely reflecting a $295.9 equity infusion million provided by the Macquarie consortium in late 2007.

Q. Have you also examined the capital structure ratios of PE?

A. Yes, I have. These are shown on Page 2 of Schedule 5. The common equity ratios of PE, on a consolidated basis, are summarized below:

	Including S-T Debt	Excluding S-T Debt
2003	38.8%	39.8%
2004	39.0%	40.5%
2005	44.3%	44.7%
2006	40.6%	43.3%
2007	44.7%	46.9%

The equity ratios of PE have also increased in recent years, and have remained similar to those of PSE.

Q. How do these capital structures compare to those of investor-owned electric utilities?

A. Schedule 6 of Exhibit No. __ (DCP-2) shows the common equity ratios (including short-term debt in capitalization) for the two groups of electric utilities covered by AUS Utility Reports. These are:

Year	Electric	Combination Gas And Electric
2003	42%	38%
2004	47%	43%
2005	44%	47%
2006	45%	44%
2007	47%	46%

These common equity ratios were higher than those of PSE prior to 2005, but are generally similar to those of PSE at the current time.

Q. What capital structure ratios has PSE requested in this proceeding?

A. The Company requests use of a projected average capital structure for the Rate Year November 2008 through October 2009. The resulting capital structure ratios are as follows:

Short-Term Debt	4.93%
Long-Term Debt	50.04%
Preferred Stock	0.03%
Common Equity	45.00%

This capital structure contains somewhat more common equity than was the case at the end of the September 30, 2007 test year (*i.e.*, 40.84 percent), but more closely reflects the test year capital structure adjusted for the December 2007 stock purchase agreement (*i.e.*, 46.35 percent). The proposed capital structure is described by PSE witness Donald E. Gains as "what is expected to be supporting operations at the time the rates for the proceeding are in effect."

Q. What capital structure do you propose to use in this proceeding?

A. I use the capital structure ratios as proposed by PSE. In doing so, I note that the 45.0 percent common equity ratio proposed in this proceeding is slightly higher than the hypothetical 44.0 percent common equity ratio employed in PSE's last rate proceeding.

Q. What are the cost rates of short-term debt, long-term debt and preferred stock in the company's application?

A. The Company's filing cites the following cost rates:

Short-Term Debt	5.92%
Long-Term Debt	6.90%
Preferred Stock	8.61%

I use these rates in my cost of capital analyses. According to the Company's response to Staff Data Request No. 147, these "cost rate calculations for debt and preferred stock are consistent with Commission-approved calculations as well as the calculations PSE performed in the last general rate proceeding."

Q. Can the cost of common equity be determined with the same degree of precision as the costs of debt and preferred stock?

A. No. The cost rates of debt and preferred stock are largely determined by interest payments, issue prices, and related expenses. The cost of common equity, on the other hand, cannot be precisely quantified, primarily because this cost is an opportunity cost. There are, however, several models which can be employed to estimate the cost of common equity. Three of the primary methods – DCF, CAPM, and CE – are developed in the following sections of my testimony.

VII. SELECTION OF PROXY GROUPS

Q. How have you estimated the cost of common equity for PSE?

A. PSE is not a publicly-traded company. Consequently, it is not possible to directly apply cost of equity models to this entity. Its parent company, PE is publicly-traded, and consequently, it is possible to conduct direct analyses of its cost of common equity. However, it is generally preferable to analyze groups of comparison or "proxy"

companies as a substitute for PSE to determine its cost of common equity. In addition, the proposed merger of PE, as cited previously, sheds doubt on the use of this entity as a singular proxy for PSE's cost of equity.

I have examined three such groups for comparison to PSE. I selected one group of electric utilities similar to PSE and PE using the criteria listed on Schedule 7 of Exhibit No. __ (DCP-2). These criteria are as follows:

(1) Net Plant of $500 million to $7 billion;
(2) Electric revenues 50% or greater;
(3) Common equity ratio 45% or greater;
(4) S&P and Moody's bond ratings of BBB;
(5) S&P stock ranking of B, B+ or A-; and,
(6) Currently pays dividends.

Second, I have conducted studies of the cost of equity for the groups of "S&P Integrated Electric Utilities" and "Moody's Electric Utilities" selected by PSE's witness Dr. Morin.

VIII. DISCOUNTED CASH FLOW ANALYSIS

Q. What is the theory and methodological basis of the discounted cash flow model?

A. The discounted cash flow (DCF) model is one of the oldest, as well as the most commonly-used, models for estimating the cost of common equity for public utilities. It is my understanding that the UTC has traditionally placed primary reliance on DCF results in setting the cost of capital for the utilities it regulates. The DCF model is based on the "dividend discount model" of financial theory, which maintains that the value

(price) of any security or commodity is the discounted present value of all future cash flows.

The most common variant of the DCF model assumes that dividends are expected to grow at a constant rate. This variant of the dividend discount model is known as the constant growth or Gordon DCF model. In this framework cost of capital is derived by the following formula:

$$K = \frac{D}{P} + g$$

where: K = discount rate (cost of capital)
P = current price
D = current dividend rate
g = constant rate of expected growth

This formula essentially recognizes that the return expected or required by investors is comprised of two factors: the dividend yield (current income) and expected growth in dividends (future income).

Q. Please explain how you have employed the DCF model.

A. I have utilized the constant growth DCF model. In doing so, I have combined the current dividend yield for each group of proxy utility stocks described in the previous section with several indicators of expected dividend growth.

Q. How did you derive the dividend yield component of the DCF equation?

A. There are several methods that can be used for calculating the dividend yield component. These methods generally differ in the manner in which the dividend rate is employed; *i.e.*, current versus future dividends or annual versus quarterly compounding of dividends. I believe the most appropriate dividend yield component is the version listed below:

$$Yield = \frac{D_0(1+0.5g)}{P_0}$$

This dividend yield component recognizes the timing of dividend payments and dividend increases.

The P_0 in my yield calculation is the average (of high and low) stock price for each proxy company for the most recent three month period (January-March, 2008). The D_0 is the current annualized dividend rate for each proxy company.

Q. How have you estimated the dividend growth component of the DCF equation?

A. The dividend growth rate component of the DCF model is usually the most crucial and controversial element involved in using this methodology. The objective of estimating the dividend growth component is to reflect the growth expected by investors that is embodied in the price (and yield) of a company's stock. As such, it is important to recognize that individual investors have different expectations and consider alternative indicators in deriving their expectations. This is evidenced by the fact that every investment decision resulting in the purchase of a particular stock is matched by another investment decision to sell that stock. Obviously, since two investors reach different decisions at the same market price, their expectations differ.

A wide array of indicators exists for estimating the growth expectations of investors. As a result, it is evident that no single indicator of growth is always used by all investors. It therefore is necessary to consider alternative indicators of dividend growth in deriving the growth component of the DCF model.

I have considered five indicators of growth in my DCF analyses. These are:

1. 2003-2007 (5-year average) earnings retention, or fundamental growth (per Value Line);
2. 5-year average of historic growth in earnings per share ("EPS"), dividends per share ("DPS"), and book value per share ("BVPS") (per Value Line);
3. 2008, 2009, and 2011-2013 projections of earnings retention growth (per Value Line);
4. 2005-2007 to 2011-2013 projections of EPS, DPS, and BVPS (per Value Line); and
5. 5-year projections of EPS growth as reported in First Call (per Yahoo! Finance).

I believe this combination of growth indicators is a representative and appropriate set with which to begin the process of estimating investor expectations of dividend growth for the groups of proxy companies. I also believe that these growth indicators reflect the types of information that investors consider in making their investment decisions. As I indicated previously, investors have an array of information available to them, all of which should be expected to have some impact on their decision-making process.

Q. Please describe your initial DCF calculations.

A. Exhibit No. __ (DCP-2), Schedule 8 presents my DCF analysis. Page 1 shows the calculation of the "raw" (i.e., prior to adjustment for growth) dividend yield for each proxy company. Pages 2 and 3 show the growth rate for the groups of proxy companies. Page 4 shows the "raw" DCF calculations, which are presented on several bases: mean, median, and high values. These results can be summarized as follows:

	Mean	Median	Mean High[1]	Median High[1]
Proxy Group	9.1%	8.9%	11.7%	11.1%
S&P Integrated Group	9.0%	8.9%	11.5%	10.6%
Moody's Electric Group	9.5%	8.9%	11.7%	10.6%

I note that the individual DCF calculations shown on Schedule 8 should not be interpreted to reflect the expected cost of capital for the proxy groups; rather, the individual values shown should be interpreted as alternative information considered by investors. The individual DCF calculations also demonstrate how the focus on a single growth rate, such as EPS projections, can produce a DCF conclusion that is not reflective of a broader perspective of available information.

The DCF results in Schedule 8 indicate average (mean and median) DCF cost rates of 8.9 percent to 9.5 percent. The "high" DCF rates (i.e., using the highest growth rates only) are about 11.5 percent to 11.7 percent on an average basis and 10.6 percent to 11.1 percent on a median basis.

[1] Using only the highest growth rate.

Q. What do you conclude from your DCF analyses?

A. This analysis reflects a broad DCF range of about 9.0 percent to about 11.7 percent for the proxy groups. This is approximated by the average/mean values, as well as the top DCF calculations for the proxy groups examined in the previous analysis. I give less weight to the lower end of the mean/median results, as well as less weight to the extreme upper ends of the groups (i.e., mean results, which are impacted by outlier results). I believe that 9.5 percent to 10.5 percent (10.0 percent mid-point) reflects the proper DCF cost for PSE.

IX. CAPITAL ASSET PRICING MODEL ANALYSIS

Q. Please describe the theory and methodological basis of the capital asset pricing model.

A. The Capital Asset Pricing Model is a version of the risk premium method. The CAPM describes and measures the relationship between a security's investment risk and its market rate of return. The CAPM was developed in the 1960s and 1970s as an extension of modern portfolio theory ("MPT"), which studies the relationships among risk, diversification, and expected returns.

Q. How is the CAPM derived?

A. The general form of the CAPM is:

$$K = R_f + \beta(R_m - R_f)$$

where: K = cost of equity

R_f = risk free rate

R_m = return on market

β = beta

R_m-R_f = market risk premium

As noted previously, the CAPM is a variant of the risk premium method. I believe the CAPM is generally superior to the simple risk premium method because the CAPM specifically recognizes the risk of a particular company or industry (*i.e.*, beta), whereas the simple risk premium method assumes the same risk premium for all companies exhibiting similar bond ratings.

Q. What groups of companies have you utilized to perform your CAPM analyses?

A. I have performed CAPM analyses for the same groups of proxy utilities evaluated in my DCF analyses.

Q. Please explain the risk-free rate as used in your CAPM and indicate what rate you employed.

A. The first term of the CAPM is the risk-free rate (R_f). The risk-free rate reflects the level of return that can be achieved without accepting any risk.

In CAPM applications, the risk-free rate is generally recognized by use of U.S. Treasury securities. Two general types of U.S. Treasury securities are often utilized as the R_f component - short-term U.S. Treasury bills and long-term U.S. Treasury bonds.

I have performed CAPM calculations using the three month average yield (January – March, 2008) for 20-year U.S. Treasury bonds. Over this three month period, these bonds had an average yield of 4.40 percent.

Q. What is beta and what betas did you employ in your CAPM?

A. Beta is a measure of the relative volatility (and thus risk) of a particular stock in relation to the overall market. Betas of less than 1.0 are considered less risky than the market, whereas betas greater than 1.0 are more risky. Utility stocks traditionally have had betas below 1.0. I utilized the most recent Value Line betas for each company in the groups of proxy utilities.

Q. How did you estimate the market risk premium component in your CAPM analysis?

A. The market risk premium component (R_m-R_f) represents the investor-expected premium of common stocks over the risk-free rate, or government bonds. For the purpose of estimating the market risk premium, I considered alternative measures of returns of the S&P 500 (a broad-based group of large U.S. companies) and 20-year U.S. Treasury bonds.

First, I have compared the actual annual returns on equity of the S&P 500 with the actual annual yields of U.S. Treasury bonds. Schedule 9 of Exhibit No. __ (DCP-2) shows the return on equity for the S&P 500 group for the period 1978-2006 (all available

years reported by S&P). This schedule also indicates the annual yields on 20-year U.S. Treasury bonds, as well as the annual differentials (*i.e.*, risk premiums) between the S&P 500 and U.S. Treasury 20-year bonds. Based upon these returns, I conclude that this version of the risk premium is about 6.4 percent.

I have also considered the total returns (i.e., dividends/interest plus capital gains/losses) for the S&P 500 group as well as for the long-term government bonds, as tabulated by Morningstar (formerly Ibbotson Associates), using both arithmetic and geometric means. I have considered the total returns for the entire 1926-2007 period, which are as follows:

	S&P 500	L-T Gov't Bonds	Risk Premium
Arithmetic	12.3%	5.8%	6.5%
Geometric	10.4%	5.5%	4.9%

I conclude from this that the expected risk premium is about 5.9 percent (i.e., average of all three risk premiums). I believe that a combination of arithmetic and geometric means is appropriate since investors have access to both types of means and, presumably, both types are reflected in investment decisions and thus stock prices and cost of capital.

Schedule 10 of Exhibit No. __ (DCP-2) shows my CAPM calculations using the risk premium. The results are:

	Mean	Median
Proxy Group	9.5%	9.4%
S&P Integrated Group	9.3%	9.1%
Moody's Electric Group	9.2%	9.1%

Q. What is your conclusion concerning the CAPM cost of equity?

A. The CAPM results collectively indicate a cost of 9.1 percent to 9.5 percent for the three groups of comparison utilities. I conclude that the CAPM cost of equity for PSE is 9.1 percent to 9.5 percent.

X. COMPARABLE EARNINGS ANALYSIS

Q. Please describe the basis of the CE methodology.

A. The CE method is derived from the "corresponding risk" standard of the Bluefield and Hope cases. This method is thus based upon the economic concept of opportunity cost. As previously noted, the cost of capital is an opportunity cost: the prospective return available to investors from alternative investments of similar risk.

The CE method is designed to measure the returns expected to be earned on the original cost book value of similar risk enterprises. Thus, this method provides a direct measure of the fair return, because the CE method translates into practice the competitive principle upon which regulation is based.

The CE method normally examines the experienced and/or projected returns on book common equity. The logic for examining returns on book equity follows from the use of original cost rate base regulation for public utilities, which uses a utility's book common equity to determine the cost of capital. This cost of capital is, in turn, used as the fair rate of return which is then applied (multiplied) to the book value of rate base to establish the dollar level of capital costs to be recovered by the utility. This technique is thus consistent with the rate base methodology used to set utility rates.

Q. How have you employed the CE methodology in your analysis of PSE's common equity cost?

A. I conducted the CE methodology by examining realized returns on equity for several groups of companies and evaluating the investor acceptance of these returns by reference to the resulting market-to-book ratios. In this manner it is possible to assess the degree to which a given level of return equates to the cost of capital. It is generally recognized for utilities that market-to-book ratios of greater than one (*i.e.,* 100%) reflect a situation where a company is able to attract new equity capital without dilution (*i.e.*, above book value). As a result, one objective of a fair cost of equity is the maintenance of stock prices above book value.

I would further note that the CE analysis, as I have employed it, is based upon market data (through the use of market-to-book ratios) and is thus essentially a market test. As a result, my analysis is not subject to the criticisms occasionally made by some who maintain that past earned returns do not represent the cost of capital. In addition, my analysis uses prospective returns and thus is not confined to historical data.

Q. What time periods have you examined in your CE analysis?

A. My CE analysis considers the experienced equity returns of the proxy groups of utilities for the period 1992-2007 (*i.e.,* the last sixteen years). The CE analysis requires that I examine a relatively long period of time in order to determine trends in earnings over at least a full business cycle. Further, in estimating a fair level of return for a future period, it is important to examine earnings over a diverse period of time in order to avoid any

undue influence from unusual or abnormal conditions that may occur in a single year or shorter period. Therefore, in forming my judgment of the current cost of equity I have focused on two periods: 2003-2007 (the last five years - the average length of a business cycle) and 1992-2001 (the most recent complete business cycle).

Q. Please describe your CE analysis.

A. Schedules 11 and 12 of Exhibit No. __ (DCP-2) contain summaries of experienced returns on equity for several groups of companies, while Schedule 13 presents a risk comparison of utilities versus unregulated firms.

Schedule 11 shows the earned returns on average common equity and market-to-book ratios for the three groups of proxy utilities. These can be summarized as follows:

	Proxy Group	S&P Integrated Group	Moody's Electric Group
Historic ROE			
Mean	8.0-10.0%	10.3-11.5%	12.1-12.9%
Median	8.1-10.6%	9.7-12.0%	11.3-12.4%
Historic M/B			
Mean	139-169%	156-162%	172-191%
Median	132-142%	156-158%	160-171%
Prospective ROE			
Mean	8.1-9.4%	10.2-10.9%	12.6-13.1%
Median	8.0-9.5%	9.5-10.8%	11.0-12.8%

These results indicate that historic returns of 8.0-12.9 percent have been adequate to produce market-to-book ratios of 132-199 percent for the groups of proxy utilities. Furthermore, projected returns on equity for 2008, 2009, and 2011-2013 are within a range of 8.0 percent to 13.1 percent for the utility groups. These relate to 2007 market-to-book ratios of 150 percent or higher. I also note that, while the historic and projected

returns on equity for the Moody's Electric Group are higher than the other groups, the market-to-book ratios of this group are also higher. This is indicative that the returns of this group exceed the cost of capital.

Q. Have you also reviewed earnings of unregulated firms?

A. Yes. As an alternative, I also examined a group of largely unregulated firms. I have examined the Standard & Poor's 500 Composite group, since this is a well recognized group of firms that is widely utilized in the investment community and is indicative of the competitive sector of the economy. Schedule 12 presents the earned returns on equity and market-to-book ratios for the S&P 500 group over the past fifteen years. As this Schedule indicates, over the two periods this group's average earned returns ranged from 14.1 percent to 14.7 percent with market-to-book ratios ranging between 284 percent and 341 percent.

Q. How can the above information be used to estimate the cost of equity for PSE?

A. The recent earnings of the proxy utility and S&P 500 groups can be utilized as an indication of the level of return realized and expected in the regulated and competitive sectors of the economy. In order to apply these returns to the cost of equity for proxy utilities, however, it is necessary to compare the risk levels of the utility industry with those of the competitive sector. I have done this in Exhibit No. __ (DCP-2), Schedule 13, which compares several risk indicators for the S&P 500 group and the utility groups. The information in this schedule indicates that the S&P 500 group is more risky than the utility proxy groups.

Q. What return on equity is indicated by the CE analysis?

A. Based on the recent earnings and market-to-book ratios, I believe the CE analysis indicates that the cost of equity for the proxy utilities is no more than 10.0 percent to 10.5 percent (10.25 percent mid-point). Recent returns of 8.0 percent to 12.9 percent have resulted in market-to-book ratios of 130 and greater, with the upper portion of the return on equity range being accompanied by the upper portion of the market-to-book range. Prospective returns of 8.0 percent to 13.1 percent result in anticipated market-to-book ratios of over 150 percent, again with the higher returns being associated with much higher market-to-book ratios. As a result, it is apparent that returns below this level would result in market-to-book ratios of well above 100 percent. An earned return of 10.0 percent to 10.5 percent should thus result in a market-to-book ratio of over 100 percent. As I indicated earlier, the fact that market-to-book ratios substantially exceed 100 percent indicates that historic and prospective returns of 11.8 percent to 13.1 percent reflect earnings levels that exceed the cost of equity for those regulated companies.

In applying the CE analysis, it also is important to recognize recent trends. My recommended range of 10.0 percent to 10.5 percent is further supported by the actual authorized returns on common equity for US electric utilities from 2002 through 2007 that I cited earlier from a data request response of Dr. Morin:

Year	ROE
2002	11.16%
2003	10.97%
2004	10.75%
2005	10.54%
2006	10.36%
2007	10.30%

Please also note that my CE analysis is not based on a mathematic formula approach, as are the DCF and CAPM methodologies. Rather, it is based on recent trends and current conditions in equity markets. Further, it is based on the direct relationship between returns on common stock and market-to-book ratios of common stock. In utility rate setting, a fair rate of return is based on the utility's assets (*i.e.*, rate base) and the book value of the utility's capital structure. As stated earlier, maintenance of a financially stable utility's market-to-book ratio at 100%, or a bit higher, is fully adequate to maintain the utility's financial stability. On the other hand, a market price of a utility's common stock that is 150 percent or more above the stock's book value is indicative of earnings that exceed the utility's reasonable cost of capital. Thus, actual or projected earnings do not directly translate into a utility's reasonable cost of equity. Rather, they must be viewed in relation to the market-to-book ratios of the utility's common stock.

My 10.0 percent to 10.5 percent CE recommendation reflects the fact that historic equity returns of 11.5 percent to 12.9 percent have resulted in market-to-book ratios of 150 percent or greater, which demonstrate that the equity returns exceed the cost of capital. Likewise, projected returns of about 11 percent to 13 percent relate to 2007 market-to-book ratios of over 180 percent. My 10.0 percent to 10.5 percent CE recommendation is not designed to result in market-to-book ratios as low as 1.0 for PSE. Rather, it is based on current market conditions and the proposition that ratepayers should not be required to pay rates based on earnings levels that result in excessive market-to-book ratios.

XI. RETURN ON EQUITY RECOMMENDATION

Q. Please summarize the results of your three cost of equity analyses.

A. My three methodologies produce the following:

Discounted Cash Flow	9.5-10.5%
Capital Asset Pricing Model	9.1-9.5%
Comparable Earnings	10.0-10.5%

Q. What is your cost of equity recommendation for PSE?

A. It is my understanding that the UTC places the heaviest reliance on the DCF method to determine the cost of equity for the utilities it regulates. I note that this is not unusual among commissions throughout the U.S. Accordingly, my recommendation places more emphasis on the DCF findings of 9.5 percent to 10.5 percent or a 10.0 percent mid-point. I note that the results of my CAPM analyses (9.1 percent to 9.5 percent) and CE analyses (10 percent to 10.5 percent) corroborate my DCF findings. My specific finding for PSE is 10.0 percent, which gives primary consideration to the 10.0 percent mid-point of my DCF findings, but also is consistent with CAPM and CE results.

XII. TOTAL COST OF CAPITAL

Q. What is the total cost of capital for PSE?

A. Schedule 1 of Exhibit No. __ (DCP-2) reflects the total cost of capital for the Company using PSE's proposed capital structure and costs of short-term debt, long-term debt, and preferred stock, along with the range of common equity costs my DCF analysis supports. The resulting total cost of capital is a range of 8.02 percent to 8.47 percent (8.25 percent

with my recommended 10.0 percent cost of equity). I recommend that this 8.25 percent total cost of capital be established for PSE.

Q. Does your cost of capital recommendation provide the Company with a sufficient level of earnings to maintain its financial integrity?

A. Yes, it does. Schedule 14 of Exhibit No. __ (DCP-2) shows the pre-tax coverage that would result if PSE earned my cost of capital recommendation. As the results indicate, my recommended range would produce a coverage level within the benchmark range for a BBB rated utility. In addition, the debt ratio (which reflects the Company's proposed capital structure) is within the benchmark for a BBB rated utility.

XIII. COMMENTS ON COMPANY TESTIMONY

Q. Have you reviewed the testimony of PSE witness Roger Morin?

A. Yes, I have.

Q. What is your understanding of Dr. Morin's cost of equity recommendation for PSE?

A. Dr. Morin is recommending an 11.20 percent cost of common equity for PSE. This recommendation is based upon his implementation of the following cost of equity models (see page 57 of Dr. Morin's testimony):

	Morin Conclusions	
CAPM		
Traditional	11.8%	
Empirical	12.0%	
Average		11.9%

Risk Premium		
Historical Electric	10.9%	
Allowed Returns	10.7%	
Average		10.8%
DCF		
Parent Company Value Line	10.7%	
Parent Company Zacks	10.2%	
Vertically Integrated Value Line	10.1%	
Vertically Integrated Zacks	11.5%	
Moody's Electric Value Line	10.8%	
Moody's Electric Zacks	11.3%	
Average		10.8%
Combined Average		11.2%

Based upon these results, he concludes that a range of 10.8 percent to 11.2 percent is the cost of equity for PSE. He recommends an 11.2 percent return on equity for PSE, reflecting his perception that PSE faces above average risks on its electric operations. PSE, however, is requesting a 10.8 percent cost of capital in its application.

Q. What is your understanding of Dr. Morin's CAPM analyses?

A. Dr. Morin performs CAPM analyses for a group of electric utilities (0.92 average beta). He combines a 0.92 beta with a 5.0 percent level cost of long-term (30-year) Treasury bonds and a 7.1 percent risk premium to get the following CAPM results (Page 31):

$$K = RF + \beta(RP) = 5.0\% + 0.92\ (7.1\%) = 11.5\%$$

He then adds a 0.3 percent flotation costs adjustment to this to get an 11.8 percent CAPM result.

Q. Do you agree with this CAPM analysis?

A. No, I do not.

Q. With which components of his CAPM analysis do you disagree?

A. I disagree with the risk-free rate and risk premium components.

Q. Why do you disagree with the risk free rate?

A. Dr. Morin uses a risk-free rate of 5.0 percent, which compares to the 4.40 percent rate I used. He describes his risk-free rate as the level of U.S. Treasury 30-year long-bond yields prevailing in "September 2007." I have one primary concern with Dr. Morin's risk-free component.

The latest three-month average of 20-year Treasury bonds is 4.40 percent. The latest month's yield (*i.e.*, March, 2008) is 4.36 percent. I believe that 4.40 percent more properly reflects the risk-free rate than 5.0 percent. I note that even 30-year Treasury bonds are less than the 5.0 percent rate used by Dr. Morin. Over the past three months, 30-year Treasury bonds had an average yield of 4.41 percent, while the average yield in March, 2008 was 4.39 percent.

Q. What is your disagreement with Dr. Morin's market risk premium component?

A. Dr. Morin's 7.1 percent risk premium is derived from two studies: (1) the 1926-2006 Morningstar study showing a 7.1 percent differential between common stocks and the "income component" of Treasury bonds, and (2) a DCF analysis he performed for Value

Line's aggregate stock market index and growth forecasts versus long-term Treasury bonds that produced a 7.1 percent differential. I disagree with both of his studies.

I disagree with the first study since Dr. Morin improperly used "income returns" from the Morningstar study rather than "total returns." What Dr. Morin did was compare the differential between total returns for common stocks (*i.e.*, dividends and capital gains) and only income returns for Treasury bonds. As such, he has ignored the capital gains component of the Treasury bonds return. As I indicated in my earlier testimony, the differential between total returns of common stocks and Treasury bonds is 6.5 percent (a figure Dr. Morin acknowledges on page 27 of his direct testimony). In addition, Dr. Morin's use of the Morningstar study only used half of the reported data (arithmetic means) and ignored the other half of the reported data (geometric means).

Dr. Morin's second study relies upon his conclusion that the "expected return on the aggregate equity market" is 11.81 percent, which he derives by performing DCF analyses for the Value Line aggregate market. He combines a 1.62 percent dividend yield with a projected growth rate of 10.19 percent to arrive at an 11.81 percent return. He then adjusted the dividend yield by the growth rate to arrive at his 12.18 percent DCF cost, which he in turn compared to the 5.0 percent 30-year Treasury bond yields to arrive at a 7.18 percent risk premium.

I do not believe this is an appropriate method by which to estimate the risk premium. Dr. Morin has not demonstrated that the Value Line group of some 1,800 stocks is an appropriate standard for the risk premium (which is normally performed by using a smaller sample of large companies, such as the S&P 500). In fact, it is reasonable

to conclude that the Value Line group is more risky than the S&P 500 and thus had a higher cost of equity.

Q. Please describe Dr. Morin's "empirical" CAPM analysis.

A. Dr. Morin also employs what he describes as an "empirical" CAPM analysis. This form of the CAPM assumes that beta for an industry understates the industry's volatility and thus risk and it is necessary to substitute the overall market's beta (*i.e.*, 1.0) for one-fourth of the industry's actual beta. Dr. Morin assumed that the appropriate beta in a CAPM analysis is a combination of the actual industry beta with a 75 percent weight and a beta of 1 with a 25 percent weight.

The use of an empirical CAPM overstates the cost of equity for companies with betas below that of the market. What the empirical CAPM actually does is inflate the CAPM cost for the selected company or industry on one-fourth of its equity and assumes that one-fourth of the company has the risk of the overall market. This essentially creates a hypothetical beta and CAPM result which is not appropriate for PSE or for other utilities.

Q. Please describe your understanding of Dr. Morin's risk premium analysis.

A. Dr. Morin performs two risk premium analyses. Each of these involved the estimation of an equity risk premium over the 5.0 percent long-term Treasury bond yields used as the risk-free rate in his CAPM analyses. The two risk premiums he developed are:

Historic risk premium for the electric utility industry; and,

Allowed risk premiums for the electric utility industry.

Q. Please describe Dr. Morin's historic risk premium for the electric utility industry.

A. Dr. Morin's historic risk premium for the electric utility industry involves an examination of the total returns of 20-year Treasury bonds (capital gains/losses plus interest) and Moody's Electric Utilities Index (capital gains/losses plus dividend yield) over the period 1932-2006. The average historical difference between the electric utility returns and the Treasury bond returns was 5.6. His historic risk premium for the electric utility industry simply added the 5.0 percent current Treasury bond yield to the 5.6 percent historic risk premium to get a 10.6 percent result. To this he added 0.3 percent for flotation cost to derive his 10.9 percent conclusion. I note, that his 10.6 percent conclusion, absent flotation costs, in close to the upper end of my cost of equity range.

Q. Do you agree with this methodology for estimating the cost of equity for PSE?

A. No, I do not. Dr. Morin's historic risk premium of 5.6 percent is simply an examination of historical events going back to 1932. He has made no demonstration that economic and financial conditions in 2007 are similar to those over the past seventy plus years. The use of such a methodology implicitly assumes that the events of each of these years can have the same influences at the current time.

In addition, the risk premiums developed by Dr. Morin are generally dominated by the influence of capital gains in many years. For example, the year 2000 stock return of 71.40 percent reflects a 65.40 percent capital gain component. This high return is sandwiched between two years with negative premiums. I do not believe it is proper to

assign PSE's cost of equity based directly upon a methodology which is dominated by stock market changes and bond market changes.

It is also apparent that the risk premium level has been very volatile over the 1932-2006 period. The highest risk premium was 72.01 percent in 1935 and the lowest was -37.48 percent in 1937. The averages by decade have also been quite different, as is shown on my Schedule 15 of Exhibit No. __ (DCP-2). This indicates that the decade of the 1950's dominates the risk premium averages with a 14.17 percent premium. The most recent decade (*i.e.*, the 1990's), in contrast, shows a 0.03 percent risk premium. Dr. Morin's methodology weights these equally. It is doubtful that investors place equal weight on events in the 1930's and 1990's in making investment decisions, yet Dr. Morin's risk premium analysis implicitly assumes this is the case.

Q. Please describe Dr. Morin's analysis of allowed risk premiums for the electric utility industry.

A. In this phase of his risk premium testimony, Dr. Morin compares the differential between allowed returns on equity for electric utilities and long-term Treasury bonds over the 1998-2007 period (*i.e.*, last 10 years). The average spread over this period was 5.6 percent. Dr. Morin's risk premium analysis is based on authorized returns, as reported by Regulatory Research Associates. As I stated earlier, this source indicates a declining trend in recent years:

2002	11.16%
2003	10.97%
2004	10.75%
2005	10.54%

2006	10.36%
2007	10.30%

This also has implications for Dr. Morin's risk premium analysis. When the 10.3 percent average authorized returns on equity for 2007 is compared to the yields on long-term Treasury bonds for the year 2007 (*i.e.*, 4.84 percent), the 2007 "risk premium" is 5.46 percent (*i.e.*, 10.30 percent less 4.84 percent). Combining this with the current yield on long-term Treasury bonds (*i.e.*, 4.4 percent) results in a "risk premium" return on equity of 8.88 percent.

Q. Do you have any concluding remarks about Dr. Morin's reference to authorized returns on equity?

A. Yes, I do. Dr. Morin attempts to use authorized returns on public utilities to develop his recommended return on equity. In reality, authorized returns are much closer to my recommended return on equity (10.0 percent) than to his recommended return on equity (11.2 percent).

Q. What is your understanding of Dr. Morin's DCF analyses?

A. Dr. Morin performs several sets of DCF analyses for PE and for two groups of electric utilities. In these analyses, he uses "spot" dividend yields for each company as of September 2007. For the growth rates, he used two indicators of growth – Zacks 5-year EPS growth projections and Value Line projections of EPS growth.

The major problem with Dr. Morin's DCF analyses is the fact that he has used only one indicator of growth – projections of EPS growth. As I indicated in my DCF analysis, it is customary and proper to use alternative measures of growth.

Dr. Morin's DCF analyses implicitly assume that investors rely exclusively on EPS projections in making investment decisions. This is a very dubious assumption and Dr. Morin has offered no evidence that it is correct. I note, for example, that Value Line – one of the sources of his growth rate estimates – contains many statistics, both of a historic and projected nature, for the benefit of investors who subscribe to this publication and presumably make investment decisions based at least in part from the information contained in Value Line. Yet, Dr. Morin would have us believe that Value Line subscribers and investors focus exclusively on one single number from this publication. I note in this regard that the DCF model is a "cash flow" model. The cash flow to investors in a DCF framework is dividends. Dr. Morin's DCF model, in contrast, does not even consider dividend growth rates.

Q. Dr. Morin's testimony, on pages 59-61, cites his perception that PSE's "construction risk" makes the Company more risky than other electric utilities. Is his assertion valid?

A. No. Dr. Morin makes reference to PSE's "massive construction program" and cites this as a major risk factor impacting the Company. I note that all perceived risks, including construction risk, are factored into the assessment of rating agencies when they assign security ratings for a company. In this regard, I note that PSE's security ratings have not changed in several years.

Q. Have the credit rating agencies identified PSE's construction program as an item of particular concern?

A. No. In fact, the descriptions of PSE by S&P, as shown in Exhibit No. __ (DCP-3), cite the Company's "regulated electric and gas operations" as a "strength" due to the "relatively stable cash flows." S&P has noted the "aggressive financial strategy" of PSE in recent years and stated: the "company's credit profile has been improving, which provides financial flexibility to accommodate the proposed capital structure at the current rating level."

S&P also notes that PSE's business risk profile is "excellent" reflecting the combined electric and gas utility businesses of the Company. It also cites the "cost recovery mechanisms" that support the Company's credit quality.

Again, all of these factors consider any impact of the Company's "construction risk" and S&P in fact cites the Company's capital requirements in its assessment. Nevertheless, this singular item does not dominate S&P's assessment.

Q. Have the credit rating agencies identified any items of particular concern?

A. Yes. The rating agencies are currently focusing on PSE's pending merger, not the Company's utility operations. S&P's concern, it appears, is the extent to which PSE's potential new parent company will utilize "significant amount of debt at the holding company and is expected to increase debt leverage on a consolidated basis." As I indicated earlier, this concern has caused S&P to place PE and PSE on Credit Watch.

Q. Dr. Morin proposes to increase his cost of equity results by 0.30 percent for "flotation costs." Do you agree with this proposed adjustment?

A. No, I do not. It is neither necessary nor appropriate to add a flotation cost "adder" to the cost of equity developed using market-based models such as DCF and CAPM. These models, which rely on stock price data, already reflect all known and relevant information which are embedded in stock prices. Any perceived impact of flotation costs on stock prices is thus already reflected in the cost of equity derived from these models.

I also note that PSE, on a post-merger basis, will not have a parent that issues stock to the public and incurs any flotation costs. Further, PSE receives equity from its current (or future) parent and thus does not incur flotation costs.

Q. Does this conclude your response testimony?

A. Yes, it does.

BACKGROUND AND EXPERIENCE PROFILE
DAVID C. PARCELL, MBA, CRRA
PRESIDENT/SENIOR ECONOMIST

EDUCATION

1985	M.B.A., Virginia Commonwealth University
1970	M.A., Economics, Virginia Polytechnic Institute and State University, (Virginia Tech)
1969	B.A., Economics, Virginia Polytechnic Institute and State University, (Virginia Tech)

POSITIONS

2007-Present	President, Technical Associates, Inc.
1995-2007	Executive Vice President and Senior Economist, Technical Associates, Inc.
1993-1995	Vice President and Senior Economist, C. W. Amos of Virginia
1972-1993	Vice President and Senior Economist, Technical Associates, Inc.
1969-1972	Research Economist, Technical Associates, Inc.
1968-1969	Research Associate, Department of Economics, Virginia Polytechnic Institute and State University

ACADEMIC HONORS

Omicron Delta Epsilon - Honor Society in Economics
Beta Gamma Sigma - National Scholastic Honor Society of Business Administration
Alpha Iota Delta - National Decision Sciences Honorary Society
Phi Kappa Phi - Scholastic Honor Society

PROFESSIONAL DESIGNATIONS

Certified Rate of Return Analyst - Founding Member
Member of Association for Investment Management and Research (AIMR)

RELEVANT EXPERIENCE

Financial Economics -- Advised and assisted many Virginia banks and savings and loan associations on organizational and regulatory matters. Testified approximately 25 times before the Virginia State Corporation Commission and the Regional Administrator of National Banks on matters related to branching and organization for banks, savings and loan associations, and consumer finance companies. Advised financial institutions on interest rate structure and loan maturity. Testified before Virginia State Corporation Commission on maximum rates for consumer finance companies.

Testified before several committees and subcommittees of Virginia General Assembly on numerous banking matters.

Clients have included First National Bank of Rocky Mount, Patrick Henry National Bank, Peoples Bank of Danville, Blue Ridge Bank, Bank of Essex, and Signet Bank.

Published articles in law reviews and other periodicals on structure and regulation of banking/financial services industry.

Utility Economics -- Performed numerous financial studies of regulated public utilities. Testified in over 300 cases before some thirty state and federal regulatory agencies.

Prepared numerous rate of return studies incorporating cost of equity determination based on DCF, CAPM, comparable earnings and other models. Developed procedures for identifying differential risk characteristics by nuclear construction and other factors.

Conducted studies with respect to cost of service and indexing for determining utility rates, the development of annual review procedures for regulatory control of utilities, fuel and power plant cost recovery adjustment clauses, power supply agreements among affiliates, utility franchise fees, and use of short-term debt in capital structure.

Presented expert testimony before federal regulatory agencies Federal Energy Regulatory Commission, Federal Power Commission, and National Energy Board (Canada), state regulatory agencies in Alabama, Alaska, Arizona, Arkansas, California, Connecticut, Delaware, District of Columbia, Florida, Georgia, Hawaii, Illinois, Indiana, Kansas, Kentucky, Maine, Maryland, Missouri, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, Ohio, Oklahoma, Ontario (Canada), Pennsylvania, South Carolina, Texas, Utah, Vermont, Virginia, West Virginia, Washington, Wisconsin, and Yukon Territory (Canada).

Published articles in law reviews and other periodicals on the theory and purpose of regulation and other regulatory subjects.

Clients served include state regulatory agencies in Alaska, Arizona, Delaware, Missouri, North Carolina, Ontario (Canada), and Virginia; consumer advocates and attorneys general in Alabama, Arizona, District of Columbia, Florida, Georgia, Hawaii, Illinois, Indiana, Kansas, Kentucky, Maryland, Nevada, New Mexico, Ohio, Oklahoma, Pennsylvania, South Carolina, Texas, Utah, Vermont, Virginia, and West Virginia; federal agencies including Defense Communications Agency, the Department of Energy, Department of the Navy, and General Services Administration; and various organizations such as Bath Iron Works, Illinois Citizens' Utility Board, Illinois Governor's Office of Consumer Services, Illinois Small Business Utility Advocate, Wisconsin's Environmental Decade, Wisconsin's Citizens Utility Board, and Old Dominion Electric Cooperative.

Insurance Economics -- Conducted analyses of the relationship between the investment income earned by insurance companies on their portfolios and the premiums charged for insurance. Analyzed impact of diversification on financial strength of Blue Cross/Blue Shield Plans in Virginia.

Conducted studies of profitability and cost of capital for property/casualty insurance industry. Evaluated risk of and required return on surplus for various lines of insurance business.

Presented expert testimony before Virginia State Corporation Commission concerning cost of capital and expected gains from investment portfolio. Testified before insurance bureaus of Maine, New Jersey, North Carolina, Rhode Island, South Carolina and Vermont concerning cost of equity for insurance companies.

Prepared cost of capital and investment income return analyses for numerous insurance companies concerning several lines of insurance business. Analyses used by Virginia Bureau of Insurance for purposes of setting rates.

Special Studies -- Conducted analyses which evaluated the financial and economic implications of legislative and administrative changes. Subject matter of analyses include returnable bottles, retail beer sales, wine sales regulations, taxi-cab taxation, and bank regulation. Testified before several Virginia General Assembly subcommittees.

Testified before Virginia ABC Commission concerning economic impact of mixed beverage license.

Clients include Virginia Beer Wholesalers, Wine Institute, Virginia Retail Merchants Association, and Virginia Taxicab Association.

Franchise, Merger & Anti-Trust Economics -- Conducted studies on competitive impact on market structures due to joint ventures, mergers, franchising and other business restructuring. Analyzed the costs and benefits to parties involved in mergers. Testified in federal courts and before banking and other regulatory bodies concerning the structure and performance of markets, as well as on the impact of restrictive practices.

Clients served include Dominion Bankshares, asphalt contractors, and law firms.

Transportation Economics -- Conducted cost of capital studies to assess profitability of oil pipelines, trucks, taxicabs and railroads. Analyses have been presented before the Federal Energy Regulatory Commission and Alaska Pipeline Commission in rate proceedings. Served as a consultant to the Rail Services Planning Office on the reorganization of rail services in the U.S.
Economic Loss Analyses -- Testified in federal courts, state courts, and other adjudicative forums regarding the economic loss sustained through personal and business injury whether due to bodily harm, discrimination, non-performance, or anticompetitive practices. Testified on economic loss to a

commercial bank resulting from publication of adverse information concerning solvency. Testimony has been presented on behalf of private individuals and business firms.

MEMBERSHIPS

American Economic Association
Virginia Association of Economists
Richmond Society of Financial Analysts
Financial Analysts Federation
Society of Utility and Regulatory Financial Analysts

Board of Directors	1992-2000
Secretary/Treasurer	1994-1998
President	1998-2000

RESEARCH ACTIVITY

Books and Major Research Reports

"Stock Price As An Indicator of Performance," Master of Arts Thesis, Virginia Tech, 1970

"Revision of the Property and Casualty Insurance Ratemaking Process Under Prior Approval in the Commonwealth of Virginia," prepared for the Bureau of Insurance of the Virginia State Corporation Commission, with Charles Schotta and Michael J. Ileo, 1971

"An analysis of the Virginia Consumer Finance Industry to Determine the Need for Restructuring the Rate and Size Ceilings on Small Loans in Virginia and the Process by which They are Governed," prepared for the Virginia Consumer Finance Association, with Michael J. Ileo, 1973

State Banks and the State Corporation Commission: A Historical Review, Technical Associates, Inc., 1974

"A Study of the Implications of the Sale of Wine by the Virginia Department of Alcoholic Beverage Control", prepared for the Virginia Wine Wholesalers Association, Virginia Retail Merchants Association, Virginia Food Dealers Association, Virginia Association of Chain Drugstores, Southland Corporation, and the Wine Institute, 1983.

"Performance and Diversification of the Blue Cross/Blue Shield Plans in Virginia: An Operational Review", prepared for the Bureau of Insurance of the Virginia State Corporation Commission, with Michael J. Ileo and Alexander F. Skirpan, 1988.

The Cost of Capital - A Practitioners' Guide, Society of Utility and Regulatory Financial Analysts, 1997 (previous editions in 1991, 1992, 1993, 1994, and 1995).

Papers Presented and Articles Published

"The Differential Effect of Bank Structure on the Transmission of Open Market Operations," Western Economic Association Meeting, with Charles Schotta, 1971

"The Economic Objectives of Regulation: The Trend in Virginia," (with Michael J. Ileo), William and Mary Law Review, Vol. 14, No. 2, 1973

"Evolution of the Virginia Banking Structure, 1962-1974: The Effects of the Buck-Holland Bill", (with Michael J. Ileo), William and Mary Law Review, Vol. 16, No. 3, 1975

"Banking Structure and Statewide Branching: The Potential for Virginia", William and Mary Law Review, Vol. 18, No. 1, 1976

"Bank Expansion and Electronic Banking: Virginia Banking Structure Changes Past, Present, and Future," William and Mary Business Review," Vol. 1, No. 2, 1976

"Electronic Banking - Wave of the Future?" (with James R. Marchand), Journal of Management and Business Consulting, Vol. 1, No. 1, 1976

"The Pricing of Electricity" (with James R. Marchand), Journal of Management and Business Consulting, Vol. 1, No. 2, 1976

"The Public Interest - Bank and Savings and Loan Expansion in Virginia" (with Richard D. Rogers), University of Richmond Law Review, Vol. 11, No. 3, 1977

"When Is It In the 'Public Interest' to Authorize a New Bank?", University of Richmond Law Review, Vol. 13, No. 3, 1979

"Banking Deregulation and Its Implications on the Virginia Banking Structure," William and Mary Business Review, Vol. 5, No. 1, 1983

"The Impact of Reciprocal Interstate Banking Statutes on The Performance of Virginia Bank Stocks", with William B. Harrison, Virginia Social Science Journal, Vol. 23, 1988

"The Financial Performance of New Banks in Virginia", Virginia Social Science Journal, Vol. 24, 1989

"Identifying and Managing Community Bank Performance After Deregulation", with William B. Harrison, Journal of Managerial Issues, Vol. II, No. 2, Summer 1990

"The Flotation Cost Adjustment To Utility Cost of Common Equity - Theory, Measurement and Implementation," presented at Twenty-Fifth Financial Forum, National Society of Rate of Return Analysts, Philadelphia, Pennsylvania, April 28, 1993.

Biography of Myon Edison Bristow, Dictionary of Virginia Biography, Volume 2, 2001.