EXHIBIT NO. ___(CJC-1T)
DOCKET NO. UE-04____/UG-04____
2004 PSE GENERAL RATE CASE
WITNESS: DR. CHARLES J. CICCHETTI

BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION, **Complainant,** **v.** **PUGET SOUND ENERGY, INC.,** **Respondent.**	**Docket No. UE-04____** **Docket No. UG-04____**

PREFILED DIRECT TESTIMONY OF DR. CHARLES J. CICCHETTI (NONCONFIDENTIAL) ON BEHALF OF PUGET SOUND ENERGY, INC.

APRIL 5, 2004

PUGET SOUND ENERGY, INC.

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PUGET SOUND ENERGY, INC.

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DR. CHARLES J. CICCHETTI

I. INTRODUCTION

Q. Please state your name, business and address.

A. My name is Charles J. Cicchetti. My address is Pacific Economics Group, 201 South Lake Street, Suite 400, Pasadena, California 91101.

Q. What is your position with Pacific Economics Group?

A. I am a Co-Founding Member of Pacific Economics Group.

Q. What are your duties as a member of Pacific Economics Group?

A. I actively consult with clients on price, costs, environmental, natural gas and electricity market issues and antitrust policies, particularly as those policies relate to regulated industries.

Q. Do you hold any other positions?

A. I hold the Jeffrey J. Miller Chair in Government, Business and the Economy at the University of Southern California.

Q. What is your educational background?

A. I attended the United States Air Force Academy, and I received a B.A. degree in

Economics from Colorado College in 1965 and a Ph.D. degree in Economics from Rutgers University in 1969. From 1969 to 1972, I engaged in post-doctoral research on energy and environmental matters at Resources for the Future.

Q. Please summarize your professional experience.

A. I served as chief economist for the Environmental Defense Fund from 1972 to 1975, and was a faculty member at the University of Wisconsin from 1972 to 1985, ultimately earning the title of Professor of Economics and Environmental Studies. From 1975 through 1976, I served as the Director of the Wisconsin Energy Office and as Special Energy Counselor for the Governor. In 1977, I was appointed by the Governor as Chairman of the Public Service Commission of Wisconsin and held that position until 1979, and served as a Commissioner until 1980. In 1980, I co-founded the Madison Consulting Group, which was sold to Marsh & McLennan Companies in 1984. In 1984, I was named Senior Vice President of National Economic Research Associates and held that position until 1987. From 1987 until 1990, I served as Deputy Director of the Energy and Environmental Policy Center at the John F. Kennedy School of Government at Harvard University, and from 1988 to 1992, I was a Managing Director and ultimately Co-Chairman of the economic and management consulting firm, Putnam, Hayes & Bartlett, Inc. In 1992, I formed Arthur Andersen Economic Consulting, a division of Arthur Andersen, LLP. In late 1996, I left Arthur Andersen to co-found Pacific Economics Group, L.L.C.

Q. Have you published any papers or articles?

A. Yes. I have published articles on energy and environmental issues, public utility regulation, competition and antitrust. A complete listing of my publications is included in Exhibit No. ___(CJC-2).

Q. Have you ever given expert testimony in a court or administrative proceeding?

A. Yes. A list of the proceedings in which I have provided expert testimony since 1980 is also included in Exhibit No. ___(CJC-2).

Q. Who retained you for this testimony?

A. I have been retained to present testimony on behalf of Puget Sound Energy, Inc. (PSE or the Company).

II. PURPOSE AND SUMMARY OF TESTIMONY

Q. What is the purpose of your testimony?

A. My testimony covers two primary areas, each of which contains several related sub-topics. First, I discuss rate relief topics and how those apply to PSE. Within this general topic, I discuss several matters that affect the manner in which the Washington Utilities and Transportation Commission (the Commission or WUTC) should decide the appropriate Return on Equity (ROE) for PSE.

The second primary area is the ROE analysis that I have been asked to conduct

for PSE. It is well established that an ROE must be determined that is sufficient to enable the utility to (1) discharge its service obligations in a safe and reliable manner; (2) maintain its financial integrity; (3) attract the capital necessary for capital improvements required to maintain safe and reliable service; and (4) adequately compensate investors for their assumption of risk. With these interrelated objectives as a backdrop, I discuss the three methods that I use to calculate ROE. These are the Discounted Cash Flow (DCF), Capital Asset Pricing (CAPM), and the Risk Premium (RP) methodologies.

In this section, I also discuss the capital structure proposed by PSE and explain why it is just and reasonable to use a 55/45 debt-to-equity structure for PSE.

Throughout my testimony, I explain the importance and consider the benefits that accrue to customers and shareholders alike from reducing the effect of factors that restrict PSE's opportunity to earn its authorized ROE. If these factors are addressed in this proceeding, I would recommend an ROE of at least 11.75%. If these factors are not addressed, I urge this Commission to set an authorized ROE of at least 12.50% to offset the earnings drag or revenue deficiency effects associated with these factors.

Q. How is your testimony organized?

A. In Section III, I discuss general rate relief topics. In this section, I review several actions taken by PSE over the past three years to reduce its dividends and restore equity. This serves as the predicate for PSE seeking a capital structure comprised

of 45 percent equity. I also explain the factors built into PSE's current rates that restrict PSE's opportunity to earn its authorized ROE, including rate design, capital expenditures, investments in natural gas conversion, safety investments for natural gas infrastructure, and hydro condition assumptions. I explain how these factors prevent PSE from having a fair opportunity to earn its currently authorized ROE of 11%. In this section, I explain that PSE competes against other utilities for capital and that the Commission must set PSE's ROE at a level high enough so that PSE can attract the required capital. I also explain why PSE needs to attract capital to finance resource acquisitions that PSE anticipates over the next several years. Further, I explain how PSE's current credit rating hurts consumers and that the Commission can raise ROE and actually help consumers by reducing interest rates and achieving the other benefits, such as expanded hedging and long term purchase power contracts, that are available to a stronger-rated company.

In Section IV, I review and explain my approach for determining a just and reasonable ROE using several approaches. I first start by recognizing that the various jurisdictions across the United States generally fall into either (i) the camp that is not restructuring its electricity industry or (ii) those that are considering restructuring, are in the process of restructuring, or have completed the restructuring process. My first approach surveys those states that, like Washington, have not adopted restructuring. These are typically the states that have, in the past, been successful at keeping rates low through effective regulation. In these more traditional, non-restructuring states, utilities are expected to continue investing in generation assets because the respective

commissions have decided to stay with the traditional cost-of-service regulatory approach. This traditional approach to regulation requires that the utility have the ability to acquire energy and to attract the capital required to build the infrastructure required to serve its load. Thus, I examine the ROEs that these more traditional cost-of-service jurisdictions have recently awarded to electric and gas utilities.

I also perform several additional formal ROE analyses. I describe conceptually the DCF, CAPM, and RP methods. I also explain these matters quantitatively. These are combined with my analysis of approaches being used by other regulatory commissions in the nation that have adopted a traditional approach that is similar to that used by the Commission. My overall conclusion is that a just and reasonable ROE for PSE is between 11.75% and 12.5%. I also discuss the significance of other factors that add additional risk and uncertainty for PSE. These factors affect ROE requirements and investor expectations. In addition, PSE's current performance and the broad utility and stock markets affect the required ROE for regulated utility companies. Regulated utility firms that eschew restructuring and are required to invest for their customers face new financial realities that need to be embraced by both management and regulators. I address these matters in this testimony.

In Section V, I present my conclusions and summarize my policy recommendations.

III. GENERAL RATE RELIEF TOPICS

Q. Why is it important to review general rate relief topics here?

A. Several broad issues and developments should be considered by this Commission in establishing PSE's ROE in this proceeding. First and foremost, it is important to recognize that the electricity industry has changed dramatically in some ways over the past few years. I maintain a database that follows which states have restructured their electricity industry over the past years and the form that this restructuring has taken. I have been actively involved with the debacle caused by California's foray into restructuring. I co-authored a California State Auditor's report analyzing the causes of the crisis and served on Governor Davis's Market Advisory Board, helping to seek ways to extricate the state of California from the quagmire.

It is important to understand that because of the California crisis and upheaval in the industry, the current regulatory climate facing energy utilities, including PSE, is not likely to be perceived favorably by the investment community. In addition, the investment community may view Washington State's regulatory climate unfavorably because PSE does not seem to have a reasonable opportunity to earn its authorized ROE. This unfavorable impression makes it more difficult for PSE to restore its financial ratings and strength, which in turn will make its cost of debt and equity more expensive. This means that PSE will continue to experience trouble in competing for capital against utilities located in regulatory jurisdictions that are perceived more favorably by the financial community. However, if the Commission adopts the Company's package of proposals, the financial

community would likely be encouraged by, and more optimistic about, the regulatory environment in Washington. This would reduce the perceived regulatory risk faced by PSE and would help PSE to improve its financial strength and ratings, which would reduce PSE's customers' costs.

It is also important to recognize, as I explained above, that regulatory jurisdictions often follow different policy approaches that are quite out of step with Washington. This makes the traditional "peer group" assessment that is often used in ROE determinations dangerously misleading if utilities from states with vastly different regulatory environments than Washington's are included. Consequently, I think it is beneficial to begin this ROE analysis for PSE by examining some general rate relief topics, especially as they apply to PSE and what it has been doing. This will set the context for determining ROE and capital structure.

A. Dividend Reduction

Q. What steps has PSE taken to reduce its dividend?

A. In 2001, PSE's dividend was $1.84. PSE has since taken steps to improve its financial situation by reducing that dividend to $1.00. Thus, since 2001, PSE has reduced its dividend by about 59%.[1] During that same period, PSE has worked to move its debt equity ratio from 68.3% debt and 31.7% equity in 2001 to 60% debt

[1] This represents the percent change over the average dividend. ($1.84-$1.00)/([$1.84+$1.00])/2=.5915. It is a conservative way of measuring the percent change.

and 40% equity in 2004,[2] as it continues to strive towards its goal of 55% debt and 45% equity, the capital structure I recommend using in this proceeding.

This is all significant for several reasons. First, reducing dividends reduces yield if the stock price remains the same. Recently, PSE's stock price also increased, which further reduces its dividend yield. Yield, as I explain below, is one factor used in developing a DCF estimate of the required ROE. Thus, it is important to recognize that PSE has been taking steps to improve its capital structure, which will in the long run improve its financial strength rating and bond ratings, improvements that benefit both shareholders and customers. Looking at ROE mechanically, these effects would reduce the yield component in a DCF analysis. Thus, these dividend cuts and concurrent decrease in yield need to be translated into forward looking growth in investment benefits. As explained below, I recognize this in the analyses I have used to determine my recommended ROE for PSE.

[2] Here, preferred shares and debt are considered together.

B. Earnings Erosion

Q. What do you mean by earnings erosion or earnings drag?

A. Earnings erosion or drag means those factors, including regulatory policies, that make it difficult, if not impossible, for PSE to earn its authorized ROE. Although PSE's authorized ROE is 11%, the Company's actual reported ROE was 7.6% for 2002 and 7.3% for 2003. This failure to come close to earning its authorized ROE has been evident for the past four years. Here, I am not talking about the variances in costs each year. I am also not suggesting that PSE should be guaranteed its authorized ROE. Rather, I am referring to systemic factors or regulatory policies that deny PSE a fair *opportunity* to earn its authorized ROE.

Q. Please describe the earnings drag factors to which you refer.

A. The first issue is PSE's current rate design and impact of reduced use per customer that PSE has been experiencing. The Company recovers its relatively fixed costs for gas and electric system infrastructure through volumetric rates. Under this structure, the lower revenues produced by decreased usage-per-customer results in earnings erosion because PSE does not recover its revenue requirement.

PSE has been adding customers and selling more MWhs. This growth partially offsets, but does not fully eliminate, the revenue loss from reduced use-per-customer and resulting earnings erosion problem. In fact, the costs incurred by PSE to upgrade the infrastructure to accommodate this growth and improve

reliability are another source of earnings erosion.

The second concern is the hydro-condition assumptions that the Commission has imposed in estimating PSE's power costs when it sets rates. Utilizing 40-year water instead of 60-year water tends to introduce bias towards wet years, and overlooks dry years. Thus, PSE would tend to under-recover its power costs.

1. Reduced Use-Per-Customer and Infrastructure Costs

Q. How does PSE's current rate design hurt PSE?

A. As described in Mr. James Heidell's testimony, Exhibit No. ___(JAH-1T), PSE relies on volumetric charges to recover a large amount of the fixed costs for the system required to bring gas or electricity to customers. When use per customer declines, for example due to conservation or more energy efficient appliances and buildings, the Company under-recovers its infrastructure costs until the next rate case. Even then, if usage continues to decline, the under-recovery starts again immediately. This drags down earnings.

Q. Have you estimated the lost earnings associated with under recovering infrastructure costs?

A. Yes. PSE is incurring significant capital expenditures for improved infrastructure to serve existing and new customers. PSE's rate of current capital expenditures is creating higher depreciation expenses than what is covered in its current tariffs. If PSE's system had no growth, the entire difference between the current capital expenditures and the recovery of, and on, could be lost. PSE has, however, added

new customers and MW retail sales have increased since 2001, while use per customer fell.

PSE's net loss for electricity when system growth offsets PSE under-recovery of capital expenditures is $9,138,877 for depreciation alone. For natural gas, PSE's equivalent under-recovery is $7,279,459. Combined, the ROE annual under-recovery is $16,418,336. I am informed that a 100 basis points increase or decrease in ROE equals an increase or decrease in PSE's gas and electric revenue requirements of about $26 million. Therefore, PSE is under-earning by about 63 basis points due to the failure of regulation to keep up with PSE's investments in new infrastructure.

Q. Is this the only loss for PSE related to earnings erosion?

A. No. PSE depreciates its capital expenditures between rate cases and the amount subsequently placed in rate base is reduced for the interim rate case depreciation. Accordingly, PSE does not earn a return "of" all of its prudent investments, in addition to under-recovering its authorized ROE "on" these same prudent investments.

I also understand that PSE plans to increase its annual transmission and distribution (T&D) capital expenditures in 2004 and 2005 by amounts well above PSE's current investments of approximately $215 million. Therefore, the earnings erosions due to under-recovery of these costs will worsen in the future unless this Commission grants PSE regulatory relief.

2. Hydro Data.

Q. Please describe the problem with the way the hydro flows are calculated.

A. Currently, for purposes of estimating PSE's power costs for setting rates, 40-year Columbia River flows are used. There are, however, data available for 60-years. I understand that additional data covering the period 1988-1997 will soon be available. The testimony of Dr. Jeffrey Dubin, Exhibit No.___(JAD-1T), which is filed concurrently with mine, analyzes the 40-year and 60-year data sets. He concluded that there would be bias introduced by using the data set containing 40 years worth of flow data. He found that the 40-year data tended to overstate the average flow of the Columbia River by failing to include drier years that had occurred in the 1928-1947 time period. Using the last 40 years would likely overstate the amount of hydro that would be available to PSE.

When the hydro forecasts are overstated, the resulting expected value of hydro-generated (MWhs) is inflated. This makes it unlikely that PSE can avoid incurring higher power costs than those reflected in rates.

Q. How does the hydro issue relate to PSE's Power Cost Adjustment (PCA) Mechanism?

A. The PCA Mechanism accounts for differences in PSE's modified actual power costs relative to a power cost baseline that includes, among other things, an estimated expected value for hydro generation. It provides for sharing costs and benefits between customers and the Company. The PCA mechanism provides for

four sharing bands. In the first sharing band, the first $20 million of costs or savings over the baseline are the Company's responsibility. In the second sharing band, 50% of the costs and benefits between $21 million and $40 million are shared equally between the customers and the Company. In the third sharing band, the costs and benefits between $41 million and $120 million are assigned 10% to the Company and 90% to the customers. In the fourth band, the costs and benefits exceeding $120 million are assigned 5% to the Company and 95% to the customers.

For the first four years (July 1, 2002 through June 30, 2006), PSE's share of power costs/benefits are calculated over time and cannot exceed a cumulative net $40 million balance. Once the $40 million cap is exceeded, customers are assigned 99% and PSE 1% of the power costs over the $40 million cap. The cap ends on July 1, 2006, at which time any deferred balances associated with the cap are set for refund or collection.

I understand that the deferral amount under the PCA Mechanism has already reached the $40 million cap. Along with the other variances due to true-up of prices, this is indicative that the power cost baseline has been set too low, such that PSE's ongoing power costs are not recovered in rates.

Q. How does the use of 40-year hydro data contribute to setting the baseline power cost too low?

A. The baseline power cost is established on a proforma test period level. The

Power Cost Baseline rate is defined as the sum of the Fixed Rate Components and Variable Rate components divided by the test year delivered load (MWh). Therein lies the problem with using 40-year Columbia River Flow data that uses a biased estimate of rainfall and overstates the likely hydro flows in a test year. By overstating the likely hydro flow, which is generally much less expensive than power PSE would need to purchase to make up for any hydro shortfalls, the Power Cost Baseline will be understated. PSE is solely responsible for the first $20 million of costs associated with its power costs. By starting with an overstated hydro flow, there is a built in earnings drag that causes PSE to be unable to earn its authorized ROE.

Q. How would the investment community view this issue?

A. The investment community would tend to view this variation in hydro flow as another element of risk making it more difficult for PSE to earn its authorized ROE. The first $20 million of additional power costs associated with overestimated hydro flows are PSE's responsibility. Thus, when hydro flows are overestimated, the Company starts in a hole from which it is difficult to dig out. This would be perceived as additional risk by investors. The hydro volatility increases risk disproportionately to the shareholders. The investment community will not ignore this.

Q. Are there any other factors associated with the 40-year hydro data that increase the Company's risk?

A. Yes. When hydro flow is lower than the misleading average 40-year hydro flow, PSE is pushed into the volatile gas market to find replacement power. Dr. Dubin also discusses greater variance in the estimated hydro conditions using the shorter time period in his testimony. In bad hydro years, demand for natural gas as a fuel to run combined cycle and combustion turbines will typically increase. As demand increases, prices also increase. These factors all tend to increase the natural gas price when hydro flow is below average.

While it might be tempting not to address this issue in that PSE is already at the $40 million PCA cap, allowing the cap to be exceeded because the baseline is improperly set hurts the Company by delaying any potential recovery on these additional costs. Moreover, costs in excess of the cap continue to be subject to a prudence review. The investment community is becoming increasingly aware of the potential exposure of utilities to disallowances of their fuel and/or hedging costs associated with their natural gas fired combustion turbines. The uncertainty of recovery of these costs would also likely be perceived by investors as additional risk, notwithstanding the $40 million PCA cap.

Q. Couldn't PSE hedge its hydro supply with natural gas or purchased power contracts?

A. To an extent, this is possible. However, PSE's relatively weak financial ratings

limit its ability to hedge effectively, as discussed in Ms. Julia Ryan's testimony, Exhibit No.___(JMR-1T). When hydro conditions are sub-par, there is increasing competition for limited natural gas supplies and purchased power agreements (PPAs). Counterparties will typically favor financially strong partners, further limiting PSE's ability to hedge. Financial weakness will add to PSE's cost of capital and make it more difficult to sign long term PPAs.

Q. What could be the consequence if the Commission does not take action to address these earnings erosion issues?

A. Failure to provide PSE with a fair opportunity to earn its authorized ROE will add to the Company's perceived risk in the financial community. Either higher authorized ROEs or policy changes are needed to reverse the negative spiral of eroding earnings, particularly because PSE plans additional resource acquisitions and increases in its infrastructure investments.

PSE is currently rated BBB- for its corporate credit rating. The current spread between a BBB+ company and a BBB- is unusually compressed at about 25 basis points. This is likely to be a short-lived phenomenon. I expect that more traditional spreads in the 50 basis point range or greater between BBB+ and BBB- companies will return.

As debt cost increases and earnings erode, PSE's efforts to acquire resources and improve infrastructure will become more costly for consumers, leading to a negative regulatory and financial spiral.

Q. Will you summarize these sources of earnings erosion for PSE?

A. Yes. A combination of rate design, the under-recovery of increased expenditures to toughen and improve its infrastructure, and the manner in which expected hydroelectric MWhs are set, all cause PSE to chronically fail to earn its authorized ROE.

Q. What do you recommend?

A. I support a plan to improve PSE's tariffs, cost allocation, and accounting to reduce earnings erosion. I also am pragmatic and recognize that changing such matters can take time for the Company, Staff, and other parties to resolve. More importantly, regulators may also seek to retain current accounting and rate design policies for other offsetting reasons; and, therefore, would consider earnings erosion as the price paid to retain some current practices.

Much of this is, of course, beyond the scope of my assignment. That said, I emphatically recognize that the price of earnings erosion comes with a concomitant higher cost of capital.

As described above, I understand that each 100 basis points change in ROE would equal a change of $26 million in PSE's revenue requirement. The earnings erosion, for the various reasons I discussed above, conservatively causes PSE to under earn by at least $27.5 million, or more than 100 basis points. Because of these factors, PSE should be authorized to earn an ROE higher than the 11.75% I recommend based upon the analysis I discuss below. I conservatively put the

higher ROE that I recommend at 12.5%, although an even higher ROE would be justified based on the combined current earnings erosion.

It is normal for some regulatory sharing of even conservative estimates. And, it is possible to provide some regulatory relief for these matters. Therefore, I recommend limiting the increase to ROE to an additional 75 basis points, not the more than 100 that could be justified for PSE, if the current sources of earnings erosion are not addressed in their entirety. In this circumstance, I would propose an ROE of 12.5%.

As a pragmatist and former regulator, I also recognize the "stickiness" related to raising the previously authorized 11% ROE. Regardless, current market conditions, especially for similarly situated traditional cost-of-service regulatory jurisdictions, easily justify an 11.75% ROE. Regulation is, however, often about the end result and not the logic used to get there. With that in mind, the current earnings erosion that conservatively would add 75 basis points to the required ROE also justifies the proposed increase from 11% to 11.75%. The 11.75% is the minimum ROE I would recommend for PSE under the current circumstances.

Q. Please summarize the traditional regulatory principles that are relevant.

A. Authorizing the ROE is more than just determining the cost of capital using formulae and historical information. *Hope Natural Gas* and *Bluefield Water*

Works[3] recognize the need to attract capital. In order for PSE to attract capital it needs, a reasonable imputed capital structure and an ROE of at least 11.75% are required, if current regulatory practices related to hydro conditions and volumetric rate charges are addressed. The Company has proposed beginning to make changes in rate design and hydroelectric baselines that would reduce negative factors that undermine PSE's ability to earn its authorized ROE. I support such efforts and propose an 11.75% ROE. Alternatively, if the current policies are maintained, PSE requires an ROE of at least 12.5% in order to be an attractive investment opportunity.

Q. Why should the Commission take the action suggested by the Company in addressing rate design and hydro issues?

A. These changes are needed in order to provide PSE with the opportunity to earn its authorized ROE. Under the current rate structure and the manner in which the hydro data is used to forecast hydro generation for PSE, the Company is restricted from earning its authorized ROE. This inability will not go unnoticed by the financial community. PSE will be considered to be a relatively risky investment and its cost of debt and equity will rise accordingly. In the long run, both consumers and shareholders will be better off if the Commission takes the steps necessary to provide PSE with the opportunity to earn its authorized ROE.

[3] *FERC v. Hope Natural Gas Co.*, 320 US 591 (1944); *Bluefield Water Works and Improvement Co. v. Public Service Commission*, 262 US 679 (1923).

C. Consumer Benefits Associated With Improving the ROE

Q. How will consumers benefit by improving PSE's ROE?

A. When I was the Chair of the Public Service Commission of Wisconsin, my mantra was, "What is good for the shareholders is often good for the consumers." By this, I mean that if PSE is granted a reasonable ROE of at least 11.75% and the major negative earnings erosion problems are fixed, PSE would actually have an opportunity to earn its authorized ROE. This would create a ripple effect that will improve the Company's financial condition and credit rating. This would reduce the cost of long-term debt as PSE's bonds earn higher ratings and enjoy better investment grade status. Higher investment grade status means a lower cost of debt, a better chance of attracting capital, a higher open credit limit on wholesale purchases, and could make other cost savings available to PSE. Lower debt costs and free credit benefit consumers. Generally, these cost savings would be expected to exceed the increase in weighted cost of capital caused by improving the ROE. Investment capital could allow PSE to implement aggressive generation investments, fuel price hedging, climate hedging, conservation, and safety enhancement programs. All these activities could allow PSE to reduce costs, which would benefit customers in the long run.

Q. Are there other ways in which customers would benefit from fixing earnings revenue deficiency problems and granting PSE an ROE of at least 11.75%?

A. Yes. PSE has embraced ambitious conservation, energy efficiency, and

renewable programs that help consumers reduce their consumption. Further, PSE has embarked on infrastructure investments that improve safety and reliability, as described in Ms. Susan McLain's testimony, Exhibit No.___(SML-1CT). This is good public policy and pro-consumer. Nevertheless, this also adds more revenue recovery risk and, indeed, results in earnings erosion under existing rate structures. Risk causes the cost of capital to increase.

I urge this Commission to increase PSE's authorized ROE to support these pro-consumer actions, rather than to create disincentives for PSE to continue with these worthwhile activities due to earnings erosion and near noninvestment grade ("junk") status.

IV. RETURN ON EQUITY AND RATE OF RETURN ANALYSES FOR PSE

Q. How is this part of your testimony organized?

A. First, I discuss PSE's capital structure and what I recommend in this proceeding. Second, I discuss the ROEs that have been recently awarded to utilities in other jurisdictions. Here, I focus on whether the particular state is undergoing electric industry restructuring. Third, I discuss three approaches for determining a reasonable ROE for Puget. I will discuss, in turn, Discounted Cash Flow (DCF), Capital Asset Pricing Model (CAPM), and risk premium (RP) approaches and compare my recommendations to the ROEs allowed by other jurisdictions.

A. Capital Structure

Q. What capital structure is PSE proposing for this filing?

A. I support the Company in proposing a capital structure that is 55% debt and 45% equity.

Q. Is it appropriate for the commission to use a capital structure comprised of 45% equity in this proceeding?

A. This Commission recognized in the 2002 general rate case settlement that it is important for PSE to increase its equity share. PSE has slashed its dividend from $1.84 per share to $1.00 per share, a 59% decrease, to help achieve an increase in equity to about 40% in 2004. PSE proposes to continue to retain earnings, eschew dividend growth, and continue to improve its financial strength.

Q. Isn't debt less expensive than equity?

A. Yes, other things equal, debt is less costly than equity. Nevertheless, regulators and financial markets recognize that too much debt is inherently risky. A firm with a significant degree of indebtedness also has lower quality debt, and therefore, higher fixed financing costs, greater interest payments, and/or liabilities. Such firms generally have lower debt ratings and, as a result, higher interest costs. Moreover, a more highly leveraged firm (*i.e.,* one with more debt) will have more expensive equity, in part because investors view highly leveraged firms as risky investments.

In addition, with more debt, operating income or margins must cover significantly greater annual interest payments before equity investors can receive any earnings per share and/or dividends. This increases equity risk. These combine to increase financing costs for necessary new investments. These factors also increase the costs of long-term supply contracts and, in the extreme, could reduce a utility's access to debt, equity, and long-term PPAs.

High debt ratios also work against retail customers by increasing the risk of both debt and equity, thereby increasing their respective cost. Regulators traditionally have sought to regulate stand-alone utilities that are investing in the future based on a capital structure comprised of 50% equity. This permits regulators to eschew risk and target authorized RORs at levels that provide the utility with necessary capital while protecting customers in terms of least cost financing principles.

Q. Does capital structure influence bond ratings?

A. Yes. The principal factors used by Standard & Poor's and Moodys, leading bond rating entities for utilities, are debt/equity ratios, times interest coverage, and risk.

Q. How do PSE's bond ratings compare with other utilities?

A. Currently, PSE's senior secured bond ratings are BBB (S&P) and Baa2 (Moody's), while its overall corporate rating is BBB-. The senior secured bond ratings were established in October 2001 and April 2002 respectively. At the time of the Moody's downgrade, PSE dropped two ranges. Since then, PSE has reduced its dividend and has been working to reduce costs. Nevertheless,

earnings are still well below PSE's current authorized ROE. PSE's current bond rating places it in the bottom quartile of utility companies. *See* Exhibit No. ___(CJC-3).

Without significant rate relief, additional downgrades could occur. A fair regulatory outcome in this proceeding should allow PSE to achieve 45% equity and improve its bond ratings. I recognize that the Company is targeting a rating improvement from BBB- to BBB+. Currently, this would save 25 basis points. However, this difference is currently compressed and I expect the future savings for PSE's customers to be about 50 basis points, consistent with the historic norm of about 50 basis points difference between BBB- and BBB+.[4]

Fair rate relief in this proceeding will reduce PSE's debt because such relief would likely improve PSE's bond ratings and enable it to attract the capital necessary to serve the long-term needs of its customers at a lower cost than would be possible with its current BBB- rating from Standard & Poor's.

[4] A Standard & Poor's Global Fixed Income Research report entitled "U.S. Credit Spreads Tighten and Volatility Falls," addresses this phenomenon.

B. Other Jurisdictions

Q. How does the restructured versus non-restructured states dichotomy affect authorized ROEs?

A. In the past decade, many states, such as California, restructured and moved from traditional cost of service regulation to a competitive environment. The impetus to restructure was a perceived failure of traditional cost of service regulation to keep prices to reasonable levels. When California began its restructuring efforts in 1996, its prices were about twice the national average. Today, average electricity prices in California are three times the national average. Other states, such as Washington, have not restructured. Unlike California, these states did not jettison traditional cost-of-service approaches despite external pressures to do so. Nevertheless, investor impression of the utility sector, as a whole, is colored by the failed attempts at restructuring, even in jurisdictions, such as Washington, that retained traditional cost-of-service approaches.

Q. What are you suggesting?

A. First, I think it is important, when setting PSE's authorized ROE, for the Commission to focus on utilities located in jurisdictions that, like Washington, have retained traditional cost-of-service approaches. These utilities, like PSE, continue to invest in rate base generation and enter long-term PPAs to reduce customer risk and hedge volatile energy markets. Consequently, PSE will be competing with these utilities for the capital needed to build that new generation

and infrastructure. Thus, the way in which the public utilities commissions in these other non-restructuring states are setting ROEs for the utilities within their respective jurisdictions, including incentive programs and accounting treatment, should be very relevant to this Commission.

Q. Do other non-restructuring jurisdictions typically have performance-based or other incentive ratemaking plans?

A. Performance-based and incentive plans are fairly common in other non-restructuring jurisdictions. For example, Georgia Power for several years has had a sharing plan with authorization to earn an ROE consisting of a band. This is currently capped at 12.95%. This 12.95% is, in effect, its authorized ROE target. If it earns above that authorized 12.95%, it shares the excess earnings with its customers. The sharing mechanism provides Georgia Power with the incentive to cut costs so as to increase its earnings. The Georgia Public Utilities Commission has frozen Georgia Power's retail rates within an ROE band with the very real potential for Georgia Power to exceed that ROE, thereby benefiting both customers (through rate reductions) and shareholders. Consider Table 1, below. Here, I show that the average ROE is 12.54% for states that retain traditional utility investments and have strong positive performance-based rates (PBR), which provide an incentive to invest and keep costs under control.

TABLE 1
PBR POST-2001

Company	State	Operation Subj to PBR	Rate Adj Provisions and Incentives	ROE Target	Restructuring
Alabama Power	Alabama	Electric	Rate Stabilization	13.75%	No
Georgia Power	Georgia	Electric	Rate Freeze	12.95%	No
Mid American	Iowa	Electric	Rate Freeze	12%	No
Northern States	N. Dakota	Electric	Benchmarking	12%	No
Otter Tail	N. Dakota	Electric	Benchmarking	12%	No

AVERAGE ROE TOTAL: 12.54

Next, consider Table 2. Here, I show the average authorized ROE for PBR states since 2001 (the information from Table 1, above) as well as the rate cases since 2003 in states with traditional cost-of-service regulation. These states have average ROEs of about 11.95% for electric and 11.52% for natural gas. Combined, the average return is about 11.86%. The authorized ROE in benchmark states like Wisconsin (12.3%), Georgia (12.95%), and South Carolina (12.45%), are very important indicators of what regulators around the country think is required in order to attract capital when significant new investments are necessary.

TABLE 2
PBR Post-2001 and/or
Rate Case Since 2003

Company	State	Service	New ROE
Alabama Power	Alabama	Electric	13.75
TECO (Peoples Gas)	Florida	Gas	11.25
Georgia Power	Georgia	Electric	12.95
Mid American	Iowa	Electric	12
Aquila	Iowa	Gas	Settled
Interstate Power & Light	Iowa	Electric	11.116
Interstate Power & Light	Iowa	Gas	11.017
Midwest Energy	Kansas	Gas	11.66
Kentucky Power	Kentucky	Electric	11
ENTERGY Gulf States	Louisiana	Electric	11.1
Northern States	N. Dakota	Electric	12
Otter Tail	N. Dakota	Electric	12
South Carolina Electric	S. Carolina	Electric	12.45
PacifiCorp	Utah	Electric	10.7
Madison Gas & Electric	Wisconsin	Electric	12.3
Madison Gas & Electric	Wisconsin	Gas	12.3
PacifiCorp	Wyoming	Electric	10.75

AVERAGE ROE TOTAL: **11.77**
AVERAGE ROE ELECTRIC: **11.84**
AVERAGE ROE GAS: **11.56**

In contrast to the above tables, states that eschew traditional regulation in favor of restructuring have authorized ROEs averaging 110 basis points lower when compared to the average 11.77% ROE of those companies contained in Table 2. This is illustrated in Table 3, below, which shows recently authorized ROEs in states where restructuring is active, and Table 4, which shows recently authorized

ROEs in states where restructuring has been delayed or suspended.

TABLE 3
Restructuring Active
Rate Case Since 2003

Company	State	Service	New ROE
Unisource	Arizona	Gas	11
Washington Gas Light	District of Columbia	Gas	10.65
Commonwealth Edison	Illinois	Electric	11.72
Washington Gas Light	Maryland	Gas	11
Maine Public Service	Maine	Electric	10.25
Elizabethtown Gas	New Jersey	Gas	10
Jersey Central Power & Light	New Jersey	Electric	9.5
Public Service Electric & Gas	New Jersey	Electric	9.75
Rockland Electric Co.	New Jersey	Electric	9.75
Orange & Rockland Utilities	New York	Electric	12.75
Orange & Rockland Utilities	New York	Gas	11
Northwest Natural Gas	Oregon	Gas	10.2
Pacific Power & Light	Oregon	Electric	10.5
New England Gas Co.	Rhode Island	Gas	11.25
Central Vermont PSC	Vermont	Electric	10.25

AVERAGE ROE TOTAL: **10.63**

AVERAGE ROE ELECTRIC: **10.56**

AVERAGE ROE GAS: **10.72**

TABLE 4
Restructuring Delayed, Suspended, or Active
Rate Case Since 2003

Company	State	Service	New ROE
Unisource	Arizona	Gas	11
Arkansas Western Gas	Arkansas	Gas	9.9
Commonwealth Edison	Illinois	Electric	11.72
Maine Public Service	Maine	Electric	10.25
Elizabethtown Gas	New Jersey	Gas	10
Jersey Central Power & Light	New Jersey	Electric	9.5
Public Service Electric & Gas	New Jersey	Electric	9.75
Rockland Electric Co.	New Jersey	Electric	9.75
Orange & Rockland Utilities	New York	Electric	12.75
Orange & Rockland Utilities	New York	Gas	11
Empire District Electric	Oklahoma	Electric	11.27
Northwest Natural Gas	Oregon	Gas	10.2
Pacific Power & Light	Oregon	Electric	10.5
New England Gas Co.	Rhode Island	Gas	11.25

AVERAGE ROE TOTAL: **10.63**

AVERAGE ROE ELECTRIC: **10.69**

AVERAGE ROE GAS: **10.56**

C. DCF Analysis

Q. Will you describe the DCF theory?

A. Yes. Investors purchase stocks today (Period 1) because they seek future (Period 2) income. There are two components of future income: (i) expected dividends; and (ii) expected capital gains. The following expression captures this fundamental financial concept:

$Price_1 = (Dividend_2 + Price_2)/(1 + ROE)$

Where:

$Price_1$ is the current per share price of the stock, let it equal P_1

$Dividend_2$ is the expected dividend per share, let it equal D_2

$Price_2$ is the expected future price, let it equal P_2

ROE is the rate of return on equity that discounts future expected values to the present.

Dividing by (1 + ROE)

$(1 + ROE)P_1 = D_2 + P_2$

$(ROE\ P_1) = D_2 + P_2 - P_1$

$ROE = D_2/P_1 + (P_2 - P_1)/P_1$

= expected yield + expected growth in the share price

Where:

"yield" is the future dividend divided by current price.

"expected growth" is the expected percentage change in share prices from Period 1 to Period 2

The DCF model is based on shareholder values and expectations. In short, ROE

equals yield plus growth.

Q. Please describe your DCF analysis.

A. Table 5 shows the monthly ROE based on market expectations for PSE. The past 12 months show that, on average, investors expect a 12.2% ROE for PSE.

TABLE 5
DCF Analysis for PSE

Date	Growth in Stock Price	Dividend yield	DCF Rate of return
Mar-04	7.1%	4.4%	11.5%
Feb-04	10.6%	4.4%	15.0%
Jan-04	17.6%	4.2%	21.9%
Dec-03	7.5%	4.2%	11.7%
Nov-03	7.5%	4.3%	11.8%
Oct-03	6.5%	4.4%	10.9%
Sep-03	9.4%	4.5%	13.9%
Aug-03	0.5%	4.6%	5.0%
Jul-03	4.2%	4.6%	8.7%
Jun-03	14.5%	4.2%	18.7%
May-03	11.7%	4.3%	16.0%
Apr-03	1.9%	4.7%	6.6%
Mar-03	2.5%	4.7%	7.2%
AVERAGE	**7.8%**	**4.4%**	**12.2%**

Note: The Growth in Stock Price is measured from the price twelve months prior. See Exhibit No. ___(CJC-4).

Q. Did you determine DCF estimates for comparable utilities?

A. Yes. Table 6 shows the ROE defined as *k_stk* for utility companies that (i) are about PSE's size, or smaller, (ii) serve customers in a state that has rejected industry restructuring, and (iii) the utility provides electricity and natural gas

services. The average ROE determined in the 3rd quarter of 2003 for this comparison group is 15.5%. If I include both non-gas and combination utilities, the ROE would increase to 19.1%

TABLE 6
DCF Analysis for Comparable Utilities

COMPANY	BIG	NO RESTRUCTURING	GAS	K_STK
Black Hills	0	1	0	0.20228
Hawaiian Electric	0	1	0	0.0669
IDACORP	0	1	0	0.1199
ALLETE	0	1	0	0.27707
Cleco	0	1	0	0.24763
Empire District	0	1	0	0.32039
Great Plains Energy	0	1	0	0.50634
OGE Energy	0	1	0	0.34888
Otter Tail	0	1	0	0.03056
Central Vermont	0	1	0	0.26826
Green Mountain Power	0	1	0	0.2747
UIL Holdings Corp	0	1	0	0.06925
Avista	0	1	1	0.35792
MDU Resources Group	0	1	1	0.4058
PNM Resources	0	1	1	0.27006
Puget Energy	0	1	1	0.13889
Sierra Pacific	0	1	1	-0.22831
Alliant Energy	0	1	1	0.19015
Aquila	0	1	1	-0.19251
MGE Energy	0	1	1	0.20869
WPS Resources	0	1	1	0.2025
Wisconsin Energy	0	1	1	0.25471
SCANA	0	1	1	0.31223
TECO Energy	0	1	1	-0.05985

Avg of k_stk not big and no restructuring and gas combo = 0.155023

Q Please describe your DCF analysis.

A. My DCF analysis for PSE alone indicates that investors would expect a 12.2% ROE, which supports my recommendation of an 11.75% ROE assuming the regulatory drag factors are addressed, and 12.5% if not. My DCF analysis for similarly-situated combination electric and gas utilities revealed that investors expect an ROE of 15.5%.

D. CAPM Analysis

Q. Please describe the CAPM analysis.

A. The CAPM conceptually identifies total risk as the sum of systematic risk and non-systematic risk. Systematic risk is defined as how a particular stock's return covaries with the market. The latter is generally defined as a market portfolio of various stocks. I use the Dow Jones Industrial Average (DJIA) to reflect the overall economy's strength and movements. I use the DJIA because it is widely used by investors, the general public, politicians, and many others. Non-systematic risk is a risk specific to a single firm and does not covary with the market.

Q. Please describe the formulas used in a CAPM analysis.

A. The CAPM begins by determining the statistical relationship between a shareholder's return on a particular stock (*e.g.,* PSE) and the return from building a broad stock portfolio in a variety of companies, often called a market index (*e.g.,* DJIA). The following formula is used in a CAPM analysis.

ROE = Risk Free Rate + Beta (Market Return – Risk Free Rate)

Q. How is return defined?

A. For any stock held, investors may gain in two ways. First, the stock's market price might appreciate over time. Second, the business might pay out cash dividends. I use both factors in estimating Beta.

Q. What is the "beta" term in the CAPM formula?

A. Beta is a statistically determined regression coefficient. Beta is calculated by using least squares regression techniques to measure the covariance between individual company returns and a broad market index. Using these techniques, a specific stock's return is regressed, as the dependent variable, against the broad market return less the risk-free interest rate, as the independent or explanatory variable.

"Beta" is a Greek letter (β) that statisticians use to represent the regression coefficient estimated in this fashion. The interpretation of the Beta term by financial analysts is based on comparing the inherent risk or variation in a single stock versus the broad market alternative.

When Beta is less than "one" and greater than "zero", the stock is considered to have less variability and risk than the market portfolio. When Beta exceeds "one" the stock is found to be more risky than the market portfolio. A Beta of exactly "one" means the stock has the same risk or variability as the market portfolio.

Q. How did you estimate a beta for PSE?

A. I determined the Beta for PSE by analyzing quarterly data for PSE over the past three years. The following regression equation measures Beta for PSE over this three-year period.

$$(ROE[PSE] - R_F) = .62807\ (ROE[DJIA] - R_F)$$

$$R^2 = .40$$

$$t = 2.8$$

This Ordinary Least Squares (OLS) regression follows the CAPM theory precisely and suppresses the constant term because the term R_F, or the risk free interest rate, is subtracted from the dependent variable, ROE(PSE). I also altered this function to add an intercept and to remove the R_F term from the dependent variable. These alternatives slightly reduced Beta and lowered the predicted value of ROE(PSE).

This equation has an R^2 and explains about 40% of the variation in the dependent variable with the single $(DJIA - R_F)$ explanatory variable. The Beta coefficient estimate has a t-statistic of 2.8, or nearly a 99% confidence level.

Q. How did you define R_F?

A. R_F is the long-term risk-free rate that matches most utility time horizons. I used the interest on a 30 year long-term Treasury Bond to measure R_F in this regression equation. That interest rate is currently about 4.89%.

I also tested the effect of a short term T-Bill (90 days) as a measure of R_F. The estimated Beta increased slightly. None of these sensitivity analyses changed my overall CAPM conclusion.

Q. What growth factor did you use in your CAPM analysis?

A. The CAPM requires a forecast of growth in the market. Here I use the DJIA.

Q. How has the DJIA changed recently?

A. In the past year (as of March 2004), the DJIA of 30 large companies has increased 37.97%. The Dow also measures an index of 15 utilities that increased slightly more than the DJIA. The utilities increased by about 38.93% over the same period.

Q. Were the last 52 weeks exceptionally high?

A. Yes. Calendar year 2003 was a good year for investors in the stock market generally. The DJIA increased 25.3% from year end 2002 to year end 2003. Investors in the 15 Dow Utilities did slightly better in 2003 than the DJIA. During the past ten years, three years had declines in the DJIA and seven had increases. Calendar year 2003 was in the top four; only 1995 and 1996 were greater and 1999 was about the same as 2003. The three negative years were 2000 to 2002. The return over ten years increased from 1993 to 2003 was 178% or an average of about 17.8% per year when dividends are included in the Dow.

The prevailing thinking is that 2004 will be good, but not as good as 2003. One

conservative approach is to use the last ten year annual change of 17.8 percent. Another approach would be to reduce the most recent 12 months DJIA growth, perhaps cutting it in half to reflect lower expectations, and use 19%. The goal is to reflect market expectations. The more recent growth rates are likely better near term predictors, while an estimate using ten years of change would be a better long term predictor. The problem, of course, is that Federal Reserve Policy, macroeconomic variables, and international factors matter. Here, I selected the more conservative of these two reduced projections of future DJIA change and used a 17.8% growth factor.

Q. What does your CAPM analysis show?

A. Using the estimate of 17.8% described above, I calculated the CAPM for PSE as follows:

$$ROE(PSE) = 4.89\% + .62807(17.8 - 4.89)$$

$$ROE(PSE) = 12.998\%$$

This estimate of PSE's ROE uses my estimate of the expected market return of 17.8%, the current interest on 30 year U.S. Treasury Bonds, and the estimated PSE Beta to determine ROE of just under 13%. This estimated ROE supports my recommended ROE for PSE of between 11.75% and 12.5%, depending upon the earnings erosion relief provided by the Commission.

In fact, the CAPM would support an ROE of 11.75%, even if the market expects a DJIA rate of growth of only about 15.8%, which is less than the annual growth

rate in the DJIA in six of the last ten years. In fact, 15.8% is lower than all of the "up" year increases since year 1995. As I discuss below, the Beta for the target group of utilities that PSE should seek to match is considerably higher, at about .78, than PSE's Beta, at about .63. Therefore, the market expectation using the .78 Beta for the target utilities could be even lower at about 13.7% and still justify setting PSE's ROE at 11.75%. *See* Exhibit No. ___(CJC-5).

Q. Did you test the effect of omitted variables and how these missing factors could affect beta?

A. Yes. In the analysis that I performed for this case, I used the same approach for a group of 55 utilities that I used to measure Beta for PSE. In this analysis, I added additional factors or variables. I found that applying the missing values to a sample of 55 utility companies over the same time period would cause estimated Betas to increase significantly. Here, I find that Beta should be about .78 for the target utility group. PSE needs to improve its financial health to reach this target group's performance. Therefore, an ROE higher than 11.75% could be justified as a target for PSE. This is based on my analysis of Beta for 55 utility companies, adjusting for other explanatory factors or variables to make this sample comparable to PSE. *See* Exhibit No. ___(CJC-5).

Q. Did you test any hypothesis related to DCF similar to your sensitivity analysis of your CAPM estimates and the factors that could distinguish PSE from other energy utility companies?

A. Yes. I assembled similar data for other energy utility companies and statistically tested for the significance of various factors that vary across the sample of 55 utilities over time. I also used the last reported quarterly data for these companies in cross section analysis of DCF for these 55 utilities, as well as over the past three years using monthly and quarterly data. *See* Exhibit No. ___(CJC-5).

Q. Why did you do this?

A. In my DCF analysis for PSE, I determined that investors are currently looking for about a 12.2% ROE for PSE. I used an analysis of the longer time period and across 55 different companies to determine the various factors that could affect investors' expectations related to PSE. Put another way, I have attempted to determine how other utilities, mostly in other jurisdictions, have been affected by such factors as: utility size, the need to make traditional investments, whether the state was restructuring, whether the utility sells both electricity and natural gas, the region of the country in which the utility is located, debt to equity ratio, etc. *See* Exhibit No. ___(CJC-5).

Q. Why did you perform so many tests?

A. Many of these factors are correlated and can change over time. I have attempted to test the various hypotheses in different data sets to improve statistical

reliability and to reduce the omitted variable bias.

Q. What did you find?

A. I found that I cannot reject the following hypotheses:

a. Utilities in states that are not restructuring often have higher ROEs than utilities located in states that are restructuring;

b. Utilities that need to invest and borrow have higher ROEs than utilities that do not need to invest and borrow;

c. Utilities in the west have higher ROEs;

d. Size does not matter;

e. Lower debt-to-equity ratios sometimes increases ROE; and

f. Combination electric and natural gas companies are not usually different than pure electric companies.

Q. Please summarize your CAPM and DCF analyses.

A. My CAPM analysis supports an ROE of about 12.998%. My DCF supports an ROE of about 12.2% ROE. I recommend 11.75% to 12.5% based upon the degree of earnings drag relief granted.

E. Risk Premium

Q. You also mentioned the risk premium (RP) method. Would you describe that approach?

A. Yes. The RP method also begins with the risk-free interest rate. To this, a corporate debt risk premium is added along with a second component to reflect equity risk.

Q. Did you also perform such risk premium recovery analysis for PSE?

A. Yes. I estimate a current range of ROEs under the RP method of about 12.03% and 12.43%, which supports my recommendations and complies with my DCF and CAPM analyses.

Q. How did you derive an RP estimate of ROE?

A. Financial markets reflect a strong statistical relationship between risk and returns. A manifestation of this is the risk premium spread between returns on stocks and interest paid on government bonds. In fact, this risk spread relationship is very stable. Recently there have been breakthroughs in understanding that the risk spread varies in an inverse fashion with changes in interest rates on risk free government bonds. This means that, as interest rates fall, the risk premium spread increases, and *vice versa*. Today, federal bonds have interest rates that are relatively low; therefore, the risk premium spread has increased over the rough norm of 6 to 7 percent.

Professors Felicia Marston and Robert Harris[5] conducted statistical studies in 1992 and 1993. They have since updated their data and now include the "bull" markets of much of the 1990s in a paper prepared in 1999.[6]

Their updated papers show that consumer confidence and market volatility also affect the spread in risk between stocks and long-term government bonds. Specifically, declines in consumer confidence, lower interest rates, and greater financial market volatility increase the risk premium spread.

Each factor would increase the historic spread in equity risk relative to the current long-term interest on U.S. Treasury Bonds of 4.89%. Professors Harris and Marston estimate the basis spread to range between 7.14% and 7.54%. I conclude these estimates are conservative and should be used. Therefore, the current Risk Premium (RP) rate of return for equity is as follows:

(Low) ROE(RP) = 4.89 + 7.14 = 12.03

(High) ROE(RP) = 4.89 + 7.54 = 12.43

With greater volatility, reduced consumer confidence, and lower interest rates, the spread would increase, which would increase the estimated ROE.

[5] Harris, Robert S. and Felicia C. Marston, "Estimating Shareholder Risk Premium Using Analysts' Growth Forecasts; Practical Issues in Valuations", Financial Management, June 22, 1992, Volume 21, No.2, page 63. Harris, Robert S. and Felicia C. Marston, "Risk and Return: A Revisit Using Expected Returns" The Financial Review, Vol. 28, No. 1, February 1993, pp117-137.

[6] Harris, Robert S. and Felicia C. Marston, "The Market Risk Premium Expectational Estimates Using Analysts' Forecasts," University of Virginia, Darden Graduate School of Business, Working Paper No. 99-08.

Q. How risky is PSE relative to other stocks?

A. There are several factors that are relevant in answering this question.

1. PSE has about 60% debt, which is in the process of being reduced to a 55% level. This makes PSE's stock relatively risky because rates of return on equity increase with leverage, or debt.

2. PSE is currently rated by Zacks as a Hold. It is moving down in the analysts' recommendations from a rating of 2.43 three months ago to 3.0 today. The higher the rating number, the weaker the analyst's recommendation to hold or buy the stock. PSE is close to being a moderate sell, which would be a 3.1 rating.

3. Compared to the S&P 500 largest companies, PSE has an interest coverage[7] of 2.0. This can be compared to an interest coverage of 2.8 for the S&P 500. PSE has a debt-to-equity ratio of 1.30 versus 1.0 for the S&P 500. PSE has a lower Quick Ratio[8] of 0.6 versus 1.1 for the S&P 500. PSE has a lower current ratio[9] of 0.8 versus 1.5 for the S&P

[7] Interest coverage equals earnings before interest and taxes, plus depreciation, divided by interest payments.

[8] Quick Ratio equals cash plus short-term securities and receivables divided by current liabilities.

[9] Current ratio equals current assets divided by current liabilities.

500.

4. PSE has a lower market-to-book ratio (1.40) versus the S&P 500 (3.45). PSE's Price/Earnings (P/E) ratio is 18.2 versus 35.6 for the S&P 500. These factors suggest financial weakness. Since 1994, PSE's P/E ratio has fallen from 29.60 to 18.2 today, just as PSE's debt-to-equity ratio increased (*i.e.,* more leverage or debt) from 0.82 in 1994 to 1.3 today.

Each of these factors suggests greater relative risk for PSE stock purchases versus the S&P 500. Nevertheless, analysts project that PSE will improve and make healthy improvements on its stock prices in 2004 and 2005, averaging about 28% in 2004. These guidance reports are based upon the assumption of a favorable rate case outcome for PSE. This a bit of a "chicken and the egg" matter for the Commission and PSE.

Q. In conclusion, are these ROE returns in the 12% to 13% range overly aggressive for PSE?

A. No. The ROEs I have calculated reflect what investors would require and expect if they invest in PSE. I have performed analyses using traditional regulatory approaches for PSE and found ROEs generally above the 11.75% I am recommending as the floor, assuming this Commission mitigates the current negative earnings drag, and above 12.5% if it does not. Additionally, the ROEs

being granted to utilities in traditional non-restructuring jurisdictions generally have ROEs in this range. Utilities in those states, such as Wisconsin, that have been in the regulatory vanguard, often grant authorized ROEs in the middle twelves. Additionally, states often have incentive mechanisms in place that provide the utility with the opportunity to exceed the authorized ROE and share that upside between shareholders and customers. In contrast, Washington does not have such incentives in place. Rather, the regulatory environment is such that built in earnings erosion actually causes PSE to fail to hit its currently authorized 11% ROE. Thus, I recommend that the Commission authorize an ROE of 11.75% if it takes steps to change some of these policies that make it difficult for PSE to earn its authorized ROE. Alternatively, I recommend a higher ROE of 12.5% if earnings drag remains. PSE will thereby be better positioned to attract capital on favorable terms to build new generation plants and other needed infrastructure and to enter into hedging transactions to reduce risks associated with the wholesale gas and power markets.

V. CONCLUSION

Q. You have completed a statistical analysis and looked at what other similarly situated state commissions have done with respect to recent ROEs. To which analysis do you give more weight?

A. Because PSE must compete for capital against utilities located in other states, I give more weight to what other state regulatory commissions are doing in states that, like Washington, have not restructured. Given that the industry, economy,

and financial markets are currently undergoing changes, I think that it is important to carefully look at what could be called the "collective" judgment of other state regulatory commission in setting ROEs. Additionally, because a higher ROE will likely result in a stronger credit rating and lower interest rates, the effect of an increase in ROE will be cushioned for ratepayers in the future.

Q. Why should this Commission increase PSE's ROE to a range between 11.75% and 12.5%?

A. PSE needs to invest in new generation and perhaps purchased power agreements, and invest in electric and natural gas infrastructure to assure safety and to meet growing demand. Short-term interest rates such as 90 day T-bills are very low today, at less than 1%. This prompts some to believe that authorized utility ROEs can also be set low. This conclusion is false. The market expects regulators in traditional states to maintain debt-to-equity ratios in the 50/50 to 60/40 range. PSE seeks to land in the middle of this range and has cut its dividend significantly in order to do so.

Equally important, states in the upper Midwest and southeast that, like Washington, plan to keep traditional cost-of-service regulation, are granting ROEs in the middle of the 12% to 13% reasonable range. Some are adding positive PBR incentives as additional inducements to investors to invest their capital in utilities in their states.

Long-term bonds trade at nearly 5%. Risk premiums of about 7.5% should be

added. This also places the ROE for PSE in the 12-13% range.

Current returns based on PSE's stock prices (DCF) are about 12.2% because the investment public expects PSE to make the necessary new investments and, equally important, expects that this Commission will grant PSE the necessary rate relief and set the ROE to at least the 11.75% level while removing the built-in negative earnings erosion. If not, an ROE of 12.5% is reasonable. The market would expect a higher authorized ROE than 11.75% in order for PSE, under current earnings drag policies, to earn at least 11.75%.

There are no free lunches in the global economy. Attracting capital is costly. Paying investors too little will harm consumers. As a former state regulator, I often reminded myself of these facts and I cautioned others to recognize that regulators are regulated by the market.

This Commission is in a difficult spot. To help consumers, it must raise PSE's ROE and retail prices in order to protect consumers from restructuring risk, price volatility, and future supply uncertainty. However, these actions should pay off in the longer term by helping to make PSE a resilient utility capable of reliably and safely serving its customers at reasonable prices.

Q. Does that conclude your testimony?

A. Yes, it does.

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