EXHIBIT NO. ___(CJC-6CT)
DOCKET NO. UG-040640, *et al.* (consolidated)
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. UG-040640 Docket No. UE-040641 (*consolidated*)
In the Matter of the Petition of PUGET SOUND ENERGY, INC. For an Order Regarding the Accounting Treatment for Certain Costs of the Company's Power Cost Only Rate Filing.	Docket No. UE-031471 (*consolidated*)
In the Matter of the Petition of PUGET SOUND ENERGY, INC. For an Accounting Order Authorizing Deferral and Recovery of the Investment and Costs Related to the White River Hydroelectric Project.	Docket No. UE-032043 (*consolidated*)

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

NOVEMBER 3, 2004

REDACTED
VERSION

PUGET SOUND ENERGY, INC.

PREFILED REBUTTAL TESTIMONY OF DR. CHARLES J. CICCHETTI

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PUGET SOUND ENERGY, INC.

PREFILED REBUTTAL TESTIMONY OF DR. CHARLES J. CICCHETTI

I. INTRODUCTION

Q. Are you the same Dr. Charles J. Cicchetti who submitted direct testimony in this proceeding on behalf of Puget Sound Energy, Inc. ("PSE" or the "Company")?

A. Yes I am.

Q. What is the purpose of your rebuttal testimony?

A. In my rebuttal testimony, I respond to and rebut the prefiled direct testimony filed by Stephen G. Hill on behalf of Public Counsel. I also respond to and rebut the prefiled direct testimony of Dr. John W. Wilson on behalf of Commission Staff. More specifically, I explain why the return on equity ("ROE") recommendations made by Mr. Hill (9.75%) and Dr. Wilson (9%) are inadequate and would cause the Company to be unable to attract capital at reasonable costs and, therefore, harm both PSE and its consumers. Finally, I respond to Mr. Lazar's proposal for differentiated ROEs by rate class.

Q. Please summarize the conclusions you reach in your rebuttal testimony.

A. Currently, PSE has an authorized ROE of 11% but actually earned 7.3% in 2003. The investment community expects PSE to make the new investments that are

needed. Equally important, there is a strong expectation that this Commission will grant PSE the rate relief necessary to allow PSE to attract capital at a reasonable cost to finance such improvements. To do this, the Commission should authorize an ROE of at least 11.75%, assuming removal of built-in negative earnings erosion as I describe in my direct testimony, Exhibit No. ___(CJC-1T). The capital structure used should reflect the 45% equity that PSE expects to achieve [redacted].

As Mr. Reynolds describes in his testimony, PSE's strategy involves an extensive effort to secure a stably priced, long-term supply of energy resources for its customers and to enhance its risk-management capabilities so the Company can limit customers' exposure to an uncertain energy marketplace. I understand this to be one of the State of Washington's top priorities. As described in Mr. Reynolds's testimony, PSE has made a tremendous effort to work with a broad range of stakeholders in developing this strategy.

Now, the Company faces a critical need to invest in new energy resources and new infrastructure, both to serve the needs of a steadily growing customer base and to upgrade aging facilities that serve existing customers. In order to meet its public service obligations, PSE must attain the financial strength to attract necessary capital on reasonable terms. If the positions of Commission Staff and Public Counsel were adopted, customers may save a little money in the short term, but these proposals would carry much greater costs and unnecessary risk for customers over the longer term.

Q. What are your primary difference with Dr. Wilson and Mr. Hill?

A. My fundamental differences with Dr. Wilson and Mr. Hill are that: (1) neither seems to recognize or appreciate the relatively high degree of new capital expenditures that PSE needs to undertake and for which it needs to attract capital to finance; and (2) the utility industry has changed and this Commission needs to consider and be guided by the same factors as other state commissions, which have rejected restructuring and have recognized the need for utilities in their respective jurisdictions to make new capital investments. Dr. Wilson and Mr. Hill fail to address these circumstances and why PSE should have its authorized ROE slashed by about 200 and 125 basis points, respectively, from its currently authorized 11%. This is all the more surprising given the earnings dilution associated with current regulatory mechanisms.

II. CONCEPTUAL RESPONSE AND REBUTTAL OF MR. HILL'S AND DR. WILSON'S DIRECT TESTIMONIES WITH RESPECT TO THEIR ROE ANALYSES

Q. Have you had the opportunity to review the prefiled testimonies of Mr. Hill and Dr. Wilson?

A. Yes. Overall, Mr. Hill and Dr. Wilson fail to recognize the utility industry has changed markedly over the past several years. Certain states have embarked on ambitious efforts to restructure their electricity industries, while others are taking a slower, but sometimes incoherent, approach to restructuring. Others still, like Washington, have preferred to stay with the tried and true traditional regulatory approach. As I show in my direct testimony, the manner in which various states

have chosen to restructure (or not) affects the ROEs that have been recently authorized in those states. Mr. Hill and Dr. Wilson ignore this important fact. Mr. Hill fails to acknowledge this important difference between Washington and other states when selecting his peer group. Moreover, while Dr. Wilson uses my peer group, he does not do so consistently.

Further, Mr. Hill and Dr. Wilson ignore the fact that PSE is in the somewhat unique position of being a utility that needs to invest substantial amounts of money in both its electric and gas businesses. This makes PSE much different from a combination utility that does not need to attract large sums of money from investors. For purposes of this testimony, I refer to infrastructure broadly, including gas and electric delivery system and resource acquisition investment.

PSE needs to attract capital on reasonable terms in order to finance these delivery system and generation resource infrastructure investments for its customers. PSE currently has a BBB- corporate and a BBB secured bond rating. These need to be improved. By contrast, Mr. Hill and Dr. Wilson ignore this important reality. Indeed, PSE's ratings likely would decline based upon their recommendations.

A. Bond Downgrade

Q. Does Mr. Hill's analysis address the appropriate debt spread in this proceeding?

A. No. Mr. Hill analyzes a differential in debt spread based upon PSE's current debt ratings, BBB secured and BBB- corporate, and the savings to be had if these

current ratings improve one rating to BBB+ and BBB, respectively.

However, Mr. Hill's analysis of debt spread ignores the effect of his proposal to reduce PSE's authorized ROE to a single digit and fails to consider or adjust for current attrition.

Adopting Mr. Hill's proposal could likely result in a one-notch credit downgrade for PSE. By contrast, the Company's financial strategy, as reflected in its proposal, could likely result in a one-notch credit upgrade. Therefore, the debt spread analysis of these proposals should be based on a two-notch credit rating spread.

Q. Have you quantified the difference in utility bond spreads for this two-rating differential?

A. Yes. A utility bond spread is the amount by which the utility bond rate exceeds a Treasury bond rate. The lower the utility bond rating, the higher the spread. A spread differential between two bonds with different credit ratings is the difference between the spread for the two bonds. I estimate the spread differential for a BBB- secured bond as compared with a BBB+ secured bond. currently to be about 40 basis points. Historically, these different ratings would have had a greater spread differential. Because Mr. Hill only considers a one-notch change in bond rating, he considers a spread differential of 17 basis points (*See* Exhibit No. ___(SGH-1T) at 23), which is relatively small and fails to recognize the difference in differential between his proposal and the Company's.

Q. Why do you conclude that Mr. Hill's and Dr. Wilson's proposed ROEs,

equity share, and ROR recommendations could threaten a PSE bond downgrade?

A. There are four reasons why I conclude that PSE is at risk for a credit downgrade if either Dr. Wilson's or Mr. Hill's recommended ROR is accepted by this Commission.

First, consider the following calculations of overall return associated with these proposals: (i) PSE's rate base is $3.65 billion; (ii) PSE's current pre-tax overall return is 10.94%; (iii) Dr. Wilson proposes a new pre-tax overall return of 9.83% (a reduction of 1.11%); and (iv) Mr. Hill proposes a new pre-tax overall return of 10.11% (a reduction of 0.83%). In Table 1 below, I show the cash flow reductions that result from their proposals.

TABLE 1

Cash Flow Impacts

	Recommended Overall Return Decrease	Cash Flow Reduction
Dr. Wilson	1.11%	$40.5 million
Mr. Hill	0.83%	$30.3 million

Reduced cash flow would reduce PSE's coverage ratios, which are currently in the weak end of the range for BBB- corporate and BBB secured debt, increasing downgrade risk. Consider Table 2, which lists the "BBB" utility parent companies in Mr. Hill's sample group. PSE has lower cash flow and higher capital spending per share than the companies in Mr. Hill's sample group of companies. Going forward, PSE plans to increase its capital expenditures significantly as it acquires generation resources to meet its deficit power position, thereby creating even greater differences with Mr. Hill's sample group. Puget

Energy also has about 75% of the fixed charge coverage of these same companies. Puget Energy and PSE are at risk of a downgrade if PSE does not get rate relief and it continues to invest as planned.

TABLE 2

Parent Company	Hill Bond Rating	Cash Flow per Share	Cap'l Spnd'g per Share	Cap'l Spnd'g/ Cash Flow	Fixed Charge Coverage %
CENTRAL VT	BBB+	$2.80	$1.28	0.46	241
ENERGY EAST	BBB+	$4.28	$1.98	0.46	211
FIRST ENERGY	BBB	$5.40	$2.60	0.48	186
PROGRESS ENERGY	BBB	$7.54	$4.14	0.55	210
CINERGY	BBB+	$4.78	$3.95	0.83	286
CLECO	BBB+	$2.98	$1.58	0.53	181
EMPIRE DISTRICT	BBB	$2.48	$2.65	1.07	246
ENTERGY	BBB	$7.43	$6.85	0.92	263
GREAT PLAINS	BBB	$4.69	$2.19	0.47	421
HAWAIIAN ELECTRIC	BBB	$3.54	$2.15	0.61	295
PNM	BBB-	$3.05	$2.78	0.91	231
PINNACLE WEST	A-	$7.33	$7.60	1.04	250
AVERAGE		**$4.69**	**$3.31**	0.71	**252**
PUGET ENERGY	BBB	$3.90	$3.09	0.79	190

Second, PSE has debt equal to about 60% (59.9%). The average for Mr. Hill's peer companies at the utility subsidiary level is about 46% debt. Consider Table 3 below. Only one of Mr. Hill's peer utilities has a higher debt capitalization than PSE. Higher debt means greater risk and increased downgrade risk. PSE is a definite outlier among BBB rated utilities and risks downgraded debt if it continues to invest without rate relief.

TABLE 3
DEBT/BOOK CAPTIALIZATION RATIO

PARENT/UTILITY SUBSIDIARY	CREDIT RATING	DEBT/BOOK CAPITALIZATION PERCENTAGE
ENERGY EAST	BBB+	
NYSE&G	BBB+	53
Rochester Gas & Electric	BBB+	50
Central Maine Power	BBB+	29
CINERGY	BBB+	
Cincinnati Gas & Electric	BBB+	46
Union Light	BBB+	22
PSI Energy	BBB+	52
PROGRESS ENERGY	BBB	
Carolina Light & Power	BBB	50
Florida Power	BBB	47
CLECO	BBB+	
Cleco Power	BBB+	48
EMPIRE DISTRICT	BBB	
Empire Distict Electric	BBB	46
ENTERGY	BBB	
Entergy Arkansas	BBB	49
Entergy Louisiana	BBB	46
Entergy Mississippi	BBB	56
Entergy New Orleans	BBB	60
Entergy Gulf States	BBB-	57
GREAT PLAINS	BBB	
Kansas City P&L	BBB	58
PINNACLE WEST	A-	
Arizona Public Service	BBB	54
FIRST ENERGY	BBB	
Pennsylvania Power	BBB-	43
Jersey Central	BBB-	24
Cleveland Electric	BBB-	52
Ohio Edison	BBB-	35
Metrolopitan Edison	BBB-	34
Toledo Edison	BBB-	42
Pennsyvania Electric	BBB-	30
PNM	BBB-	
Public Services Co. of New Mexico*	BBB	51
HAWAIIAN ELECTRIC	BBB	
Heco*	BBB+	61
CENTRAL VERMONT	BBB+	
Central Vermont*	BBB-	37
Average		**46**
PUGET ENERGY	BBB	
Puget Sound Energy	BBB-	60

Q. What is your third reason?

A. PSE purchases a large share of the energy it delivers to its customers. This is partly because PSE sells natural gas, which is typically purchased. PSE also purchases a large share of the electricity it sells. In 2003, PSE purchased 73% of its electricity needs. In contrast, Mr. Hill's peer group of "BBB" rated utilities purchased only about 55% of their power needs. See Table 4. This difference is understated for utilities comparable to PSE because some of these "BBB" peers are located in restructured regions of the country and purchase all their electricity from others. PSE is a definite outlier among utilities traditional regulated states in terms of purchased power.

TABLE 4
POWER SOLD TO CUSTUMERS 2003

	Bond Rating	% Generated	% Purchased
ENERGY EAST	BBB+		
NYSE&G	BBB+	21	79
Rochester Gas & Electric	BBB+	64	36
Central Maine Power	BBB+	0	100
CINERGY	BBB+		
Cincinnati Gas & Electric	BBB+	82	18
Union Light	BBB+	0	100
PSI Energy	BBB+	85	15
PROGRESS ENERGY	BBB		
Carolina Light & Power	BBB	93	7
Florida Power	BBB	79	21
CLECO	BBB+		
Cleco Power	BBB+	49	51
EMPIRE DISTRICT	BBB		
Empire Distict Electric	BBB	60	40
ENTERGY	BBB		
Entergy Arkansas	BBB	68	32
Entergy Louisiana	BBB	54	46
Entergy Mississippi	BBB	38	62
Entergy New Orleans	BBB	28	72
Entergy Gulf States	BBB-	52	48
GREAT PLAINS	BBB		
Kansas City P&L	BBB	94	6
PINNACLE WEST	A-		
Arizona Public Service	BBB	44	54
FIRST ENERGY	BBB		
Pennsylvania Power	BBB-	50	50
Jersey Central	BBB-	0	100
Cleveland Electric	BBB-	37	63
Ohio Edison	BBB-	24	76
Metrolopitan Edison	BBB-	0	100
Toledo Edison	BBB-	34	66
Pennsyvania Electric	BBB-	1	99
PNM	BBB-		
Pub. Serv. Co. on New Mexico*	BBB	100	0
HAWAIIAN ELECTRIC	BBB		
HECO	BBB+	61	39
CENTRAL VERMONT	BBB+		
Central Vermont*	BBB-	0	100
Average		**45**	**55**
PUGET ENERGY	BBB-	27	73
Puget Sound Energy	BBB		

* From Valueline

Q. Have you estimated the effect over time of improving the Company's overall financial strength on future ROE requirements?

A. Over time, improved financial health, as typically reflected in improved debt ratings, should result in lower future ROE requirements. This is because future ROE requirements are affected by risk assessment.

For PSE, I estimate that (other factors being equal) PSE's financial strategy as represented in its proposal would result in reduced future pre-tax ROR of 75 basis points (or about 50 basis points in authorized ROE), on a future rate base of $4 billion, using an equity share of 50% of that rate base.

Under these circumstances, the reduction (which may not fully occur for several years) would result in an annual benefit to consumers as follows:

Rate Base * Percent Equity * ROR Reduction, or

$4 billion * 50% * .0075 = $15 million per year.

Mr. Gaines incorporates this factor into his analysis of the customer benefits of an improved credit rating.

B. Infrastructure

Q. You have suggested that Mr. Hill and Dr. Wilson have ignored in their analysis the infrastructure investments that PSE needs to make. Please summarize your general understanding of that investment.

A. PSE's net utility plant (original cost less accumulated depreciation) is expected to

grow to $4,108,360,000 in 2004, to $4,524,337,000 in 2005, and to $4,568,127,000 by the end of the rate year in 2006 (February 2006). These increases represent increases of 10.13% and 11.19%, respectively, over 2004 net utility plant. These increases are greater than expected customer growth, which averaged about 2% annually between 2001 through 2003. These necessary investments are relatively atypical and support the conclusion that PSE needs rate relief, not a roll back in ROE and related revenues.

Q. Please explain.

A. I examined recent gross utility plant growth rates and customer growth rates for a sample of natural gas distributors. About 32% of PSE's gross utility plant was held in natural gas distribution in 2003, using the company's four factor allocation system. Exhibit No. ___(CJC-7) shows that in 2002, PSE's rate of natural gas gross plant additions exceeded its natural gas customer growth rate by 4.66%. The sample of 48 natural gas companies had significantly less net growth than PSE. Their rate of natural gas gross plant additions exceeded customer growth rate by only 2.63%.

In the last year (2002) of this sample, PSE had 77% more gross gas utility growth relative to customers than did the sample group. This difference in recent PSE growth is even more significant since the historic differences in annual growth rates between PSE and this sample are relatively small: 3.7% (.13/3.51) for the twenty year period and 2.7% (.08/2.92) since 1990.

Q. Did you perform a similar analysis for electric utility plant?

A. Yes. I performed a similar analysis of recent gross utility plant growth rates and customer growth rates for a sample of 55 electric utilities. The results are shown in Exhibit No. ___(CJC-8). On the electricity side, the differences between PSE and the sample through 2002 have been small. Further, because generation additions are relatively large and occur sporadically, the year selected for comparison can lead to misleading observations. That said, three things are particularly important. First, for the 20-year period, PSE's rate of electricity gross plant additions exceeded its electricity customer growth rate by an average of 3.41% per year. The sample group differential was slightly less, 3.17% per year. Second, if the comparative analysis is restricted to distribution as shown in Table 5, PSE's growth rate differential in years 2001 and 2002 is significantly higher than that of the sample group of 55 electric utilities.

Table 5
Distribution Gross Plant Growth Rate Less Customer Growth Rate

Year	PSE	Sample	Difference
2001	19.11%	3.55%	15.57%
2002	1.36%	3.34%	-1.98%
2 year change	10.24%	3.45%	6.97%

Third, PSE expects to grow combined gross utility plant from $6,706,061,000 in 2004 to $7,310,431,000 in 2005, or by 9.01%. PSE's electric customer growth is less than 2% (1.92% in 2002) and its natural gas customer growth is about 2.5% (2.59% in 2002). Subtracting customer growth from gross plant additions, PSE would have growth in utility plant of between 6.5% and 7% relative to its expected customer growth. This would be significantly greater than the typical electric and natural gas utilities in the nation.

In short, PSE needs to grow utility plant to meet customer needs. In this regard, PSE's investment needs are much higher than that of a broad sample of utilities nationwide and supports the conclusion that PSE needs rate relief, not reduction in ROE and related revenues.

C. Regulatory Standards and Expectations

Q. Does Mr. Hill accurately reflect your understanding of the "Hope" standard for ROE?

A. No. I do agree with Mr. Hill's statement at pages 5-6 of his direct testimony that the "Hope" standard does not "guarantee profitability." A primary focus of regulation is to set returns at a level sufficient to attract capital to ensure that prudent investments can be made. Furthermore, there needs to be reasonable opportunities for regulated firms to earn their authorized returns.

Mr. Hill ignores PSE's need for infrastructure investments to fulfill its public service obligations to both its electricity and natural gas customers. Further, Mr. Hill neither responds to nor considers the facts described in my direct testimony where I outline the various earnings drags or attrition effects inherent in PSE's rate design and other mechanisms. Mr. Hill, in effect, acknowledges that PSE also does not earn its authorized return of 11%, when he calculates in Exhibit No. ___(SGH-15) PSE's current actual ROE to be 7.5%. Under Mr. Hill's reduced ROE, it may be unrealistic to expect PSE to be able to continue making necessary infrastructure investments.

Q. At page 5 of his direct testimony, Mr. Hill attempts to justify his low ROE recommendation by asserting that several other regulatory jurisdictions have set single digit ROEs in the past year. What is your reaction to Mr. Hill's attempted justification of his low ROE recommendation?

A. First, I note that five out of the eight regulatory jurisdictions cited by Mr. Hill are currently actively or otherwise pursuing restructuring. This makes them *prima facie* different from Washington. States that embrace restructuring are embracing restructuring risks and competition. The only two cases in traditional non-restructured states were the Arkansas Western Gas Co in Arkansas and the Lower Valley Energy case in Wyoming. Neither is relevant for PSE and Washington. Arkansas Western is a gas distribution company serving about 130,000 customers in Northern Arkansas. It is not vertically integrated and does not sell electricity. The ROE in the case referenced by Mr. Hill was also reached through a stipulated agreement. Lower Valley Energy is not an investor owned utility. It is a rural electric cooperative (*i.e.,* customer owned). The 9.21% ROE authorized is not relevant to any consideration of the appropriate ROE for PSE, or any other investor owned utility (IOU). I remain convinced that the most relevant rate orders are the ones I show in my direct testimony in Table 1 and revised Table 2, which reflect jurisdictions that agree with this Commission's rejection of retail electricity restructuring.

Q. At page 7 of his direct testimony, Mr. Hill cites an A.G. Edwards report on the gas utility industry. He asserts that for a sample of 20 large and small gas distributorships, the "median total return expectation (dividend yield

plus expected growth – a DCF-type calculation) is 8.45%." Is this relevant?

A. No. The A.G. Edwards pessimistic view on total return from natural gas distribution companies, which rely heavily on near term projections, are not relevant to an analysis of the required ROE for a combination electric and gas utility like Puget. The median total return expectation for small and large natural gas distribution companies is not relevant to what a reasonable ROE should be for a combination natural gas and electric utility in PSE's unique situation.

Further, the A.G. Edwards report indicates that the return (yield plus growth) for integrated gas utilities is 10.8%, much higher than the 8.45% Mr. Hill touts from A.G. Edwards and the 9.75% he proposes here. The A.G. Edwards report (at page 1) explains that it expects integrated gas utilities "to perform well as managements raise earning guidances and analysts raise estimates in the upcoming quarters." Mr. Hill inappropriately uses A.G. Edwards' near-term estimates of 8.45% to justify his long-term DCF estimates.

Q. At pages 7-10 of his direct testimony, Mr. Hill asserts that capital costs are at historically low levels and argues that this indicates that "investors are willing to buy and hold stocks that offer what seem to be 'low' returns..." Do you concur with Mr. Hill's assertion?

A. No. Mr. Hill refers to what he describes as "the recent credit loosening by the Federal Reserve Bank (Fed)" to stimulate the economy. However, he mostly ignores the fact the Fed is in the process of reversing this trend and is tightening credit and that long-term interest rates are increasing. He also ignores the role of

rising oil prices and their adverse effect on broad stock market indices and prices. Inexplicably, Mr. Hill ignores the fact that on June 30, 2004, the Fed increased the target Federal Funds interest rate by 0.25%. Fed Chairman Alan Greenspan has been clear that he plans to increase rates further and would aggressively take steps to control inflation in the future, as energy prices surge and the U.S. dollar declines relative to other currencies. The recent actions taken by the Fed and other factors affecting the costs of capital contradict Mr. Hill's assertions.

Q. Is Mr. Hill's discussion, at page 8 of his direct testimony, of utility bond yields for A-rated utilities relevant in this proceeding?

A. No. PSE has an unsecured BBB- rating. Therefore, Mr. Hill's discussion of a 2004 bond yield of 5.92% for A-rated utilities is not relevant for PSE. PSE's corporate bonds are rated BBB-, and its senior secured bonds are rated BBB by Standard & Poors. In fact, PSE's bonds are rated in the lowest 20% of utility companies and are a far cry from the top 13 of 107 utility companies that have A bond ratings. I showed this in Exhibit No. ___(CJC-3) filed with my direct testimony. Lower bond ratings mean higher interest rates for the life of the bond, typically for decades. Currently, PSE's long-term bond secured and unsecured yield is greater than the 5.92% for utilities with an A rating Mr. Hill discusses on page 8 of his direct testimony.

Q. At page 12 of his direct testimony, Mr. Hill argues that common equity capital costs are lower today because of recently enacted changes in federal tax law. Do you concur with Mr. Hill that these tax code changes have lowered investors' expectations or requirements?

A. No. It is true that Public Law 108-24 (signed into law on May 28, 2003) reduced the taxable rate on dividends and capital gains to 15%.[1] However, Mr. Hill's argument ignores the fact that some investors do not pay the higher tax brackets that the change in the tax law was designed to help. This is particularly the case for pension funds and other similar institutional investors that hold large percentages of utility stocks and that pay no taxes until dividend income is withdrawn. These fund-related investors effectively pay no taxes at all. Consequently, the change in the tax laws would have no effect whatsoever on their tax liability and, under Mr. Hill's logic, would have no effect on their return expectations or requirements. For many other small investors, such as many retirees, utility stocks are often held for their dividends and the tax law change will have no discernable effect on their investment requirements or expectations because they are likely in low or no income tax brackets. Further, the current reduction in dividend taxes only applies for five years. Mr. Hill vastly overestimates the effect that the change in the tax laws has on utility investor expectations and requirements. He also ignores two other facts. First, PSE cut its dividend. This reduced PSE's value for dividend-seeking investors. Second, the tax reduction also applies to capital gains on stocks, which makes Mr. Hill's assertions concerning dividend yields misleading.

D. Market-to-Book Ratios

Q. Mr. Hill places significant weight on market-to-book ratios (MBR). Do you

[1] The tax on dividends will be reinstated in 2009, unless the tax cut is reauthorized.

agree with this emphasis?

A. No. The MBR is generally defined as the price of a stock divided by the book value per share. The primary use of MBR is not to set regulated ROE.

Non-regulated business book value and utility book value are not the same, as I explain below. The book value that regulators consider is the rate base, which is an asset, not a liability as in the case of shares or equity. While MBR is useful to compare the potential value of equity purchases across similar firms (*i.e.,* other companies in the same business), Mr. Hill improperly seeks to use MBR to set ROE. This is not the focus of how corporate finance courses and textbooks recommend using MBR.[2]

Further, PSE has an allowed ROE of 11%, but does not earn that ROE. In fact, Mr. Hill puts PSE's current ROE at 7.5%. This suppresses PSE's share price and explains why PSE's MBR is low relative to the other utilities that Mr. Hill considers in Exhibit No. ___(SGH-10) (1.28 versus 1.45). As I explain, Mr. Hill and I view MBR quite differently.

Q. Beginning at page 13 of his direct testimony, Mr. Hill argues that "when market prices are above book value, investors expect utilities to earn equity returns that are greater than the market based cost of equity capital for those companies." Do you concur with his assertion?

A. No. Mr. Hill's assertion is grounded on the assumption that investors in utility

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[2] See for example, Brealy and Myers, *Principles of Corporate Finance,* 6th Edition.

stock expect to earn only what the utility earns on book value. Mr. Hill's concerns, and similar concerns expressed by Dr. Wilson, are incorrect, as I explain below.

An investor's return requirement is based on what the investor expects to earn on her new investment, not the utility's original rate base. There are many reasons why investors pay more than book value for a utility stock. For example, if investors expect industry consolidations to continue, with the attendant acquisition premiums and potential synergies, it is likely that the stock will trade above book value. Mr. Hill cites Valueline (at page 14 of his direct testimony) for the proposition that investors expect utilities to earn 11% on their book value over the next 3 to 5 years. This also suggests that investors expect regulators to authorize ROEs of about 11% and that utilities would be able to earn that authorized ROE. If regulatory commissions were indeed authorizing ROEs of 9.75% as Mr. Hill recommends, it does not seem likely that Valueline would suggest that utilities are expecting to earn 11% on their book value. I also doubt that most utilities would, as they do, have MBRs greater than one.

Utility industry MBRs are also affected by the broader stock market's MBR. Indeed, the so-called "dot.com" bubble burst was a market correction to what some would say were over-exaggerated MBRs in the tech sector. The utility industry's stock prices were, fortunately, not over-inflated to the same extent as tech stocks. The bursting bubble effect was not so important for utility stocks, especially the utilities in states that eschewed restructuring for utility services. That said, the fact is that all MBRs are currently generally greater than one across

the various sectors in the stock market, including utilities.

PSE is in a particularly challenging place because it expects to make significant investments to serve its customers. In contrast to PSE, many utilities' share prices generally reflect the benefit of cash flow growth from depreciating expenses that exceed new capital expenditures. In fact, cash grows well in excess of their rate base changes, which in some cases are even negative. The resulting pattern is for MBR to exceed one for utilities not making investments. It is self defeating to use these facts to penalize PSE by slashing its authorized ROE because PSE needs to make significant investments in infrastructure.

Q. At page 15-16 of his direct testimony, Mr. Hill asserts that "the market-to-book/expected return relationship that actually exists today in the market for utility stocks indicates that investors expect that those companies will earn a return on the book value of their equity (ROE) which exceeds the cost of equity capital." Do you concur with his statement?

A. No. As I stated above, there are many reasons why an investor would pay more than book value for a stock. The fact that the current MBR for utility stocks exceeds one does not mean that investors are willing to accept less than the return the utility expects to receive on its book value.

An MBR greater than one would also mean the company's earnings are expected to increase through growth in sales, reduced costs, and/or for regulated utilities, a growth in rate base with a return equal to or greater than its incremental cost of capital. For these reasons, it is not the case that current MBRs indicate that

investors expect utilities to earn a return on book value in excess of the true cost of equity capital.

I generally find that the pattern of utility MBRs reflects investor expectations about rates of return. Where a utility needs to invest in its regulated business (like PSE here), its earnings and cash flow are relatively weak, and interest rates are relatively high, MBRs tend to be low. For example, during the 1970s and early 1980s, utilities were building generation and their MBRs tended to be below one. Conversely, the MBRs for healthy electric utilities tend to substantially exceed one, as they do today, when rate base is increasing and investors expect a just and reasonable regulatory treatment. As can be seen in Mr. Hill's Exhibit No. ___(SGH-10), his sample group of utilities has an average MBR of 1.45, which is consistent with utilities that do not have to undertake much new investment. PSE's MBR, as shown in Exhibit No. ___(SGH-10), is 1.28, substantially lower than the sample group's average, and indicative of the inherent difference between PSE, which needs to invest in infrastructure, and the sample group of utilities chosen by Mr. Hill.

Q. In addition to these differences, what are your conceptual differences with Mr. Hill and Dr. Wilson with respect to MBRs in excess of one?

A. First, utilities and other businesses generally have MBRs over one. This is to be expected as current long-term interest rates have declined. Most utilities refinanced their embedded debt to bring coupon rates down to lower current levels. This is fairly unusual for the utility industry because the utility industry and regulators have historically had to contend with embedded coupon rates

falling short of current interest rates. For most of my more than 35 years of regulatory experience regulators have not typically raised ROR to reflect the old norm when current interest rates were higher than embedded coupon rates. Instead, regulators have used a blended embedded cost of debt (*i.e.,* coupon rates) when establishing ROR, not higher current interest rates.

During the past several years, coupon rates often exceeded current rates. This is not a contributing factor to increased MBRs. Utilities like PSE refinanced their older, more costly, debt to lower ROR for their consumers. This beneficial action also generally pushed MBR above one due to regulatory lag and improved regulated prices for customers. These are good results for consumers and not a windfall for equity. Regardless, regulators, who did not adjust ROE when coupon rates were less than current interest rates, should not penalize ROE when utilities refinance away from more costly embedded debt to lower cost current debt. Under these conditions, MBRs greater than one would be likely.

Second, a reasonable way to analyze the implications of MBR > 1 is to start with the case of MBR = 1.

Consider the basic concept of business value, discounted cash flow:

$$PV = CF/r$$

Where: PV is present value,

CF is Cash Flow; and

r is cost of capital or discount rate

We can also consider *PV* to equal Market Value (*M*). Several other

simplifications can be made. These are the following:

(i) Assume certainty, or no risk of not earning authorized *ROR*. This means that

Earnings (E) = ROR(BV)

Where:

ROR is the authorized rate of return;

BV is the book value of rate base

(ii) Assume that the utility has 0% earnings retention and does not grow. Then cash flow (*CF*) equals Earnings (*E*) and equals Dividends (*D*). For simplicity, let's also put these values on a per share basis. Accordingly:

Price per Share = M/S =CF/S =E/S =D/S

No growth means that current annual depreciation expense equals current annual capital expenses. Putting these assumptions together yields:

*M = CF/r = (ROR * BV/Share)/r*

Where share price (*M*) equals discounted cash flow (*CF*) and earnings per share (*E=ROR * BV per share*). Rearranging terms:

*rM = ROR * BV*

M/BV = ROR/r

Mr. Hill reads a great deal into the ratio of M/B equal to one because under these conditions, the conclusion would be that:

M/B = 1 = ROR/r, or

$r = ROR$

Q. Where do you differ from Mr. Hill in setting *r* equal to ROR?

A. We begin at the same point. However, I do not accept the assumptions shown above either as givens or reflecting PSE's situation. I think we must consider the "facts" at hand compared to these specific assumptions. There are five particular assumptions that, if not supported by PSE's unique facts, would cause MBR to exceed one.

Q. What are these five assumptions?

A. The first assumption is that authorized *ROR* should be set equal to the weighted average cost of capital (*r*). For MBR to equal one, expected or actual earnings attrition should be eliminated. In actuality, PSE has earnings attrition. Investors expect rate relief. The existence of attrition, other things constant, reduces MBR. In fact, PSE has seen its MBR lag others in the utility industry. However, improving ROR to remove attrition would improve PSE's opportunities to recover its true cost of capital (*r*).

Q. What is the second assumption that would cause MBR to exceed one?

A. The second assumption is that MBR ratios can exceed one if non-regulated businesses are present and the market places a value on these businesses relative to book value. Often, utilities diversify away from capital-intensive regulated businesses. When this happens, MBR are likely greater than one for the utility industry. This fact is not particularly relevant for PSE since, according to

Valueline, PSE is mostly a regulated utility (98%). Nevertheless, other utilities in Mr. Hill's sample group are diversified and Mr. Hill ignores this fact when he used his sample group to establish PSE's ROE.

Q. What is the third assumption that would cause MBR to exceed one?

A. The third assumption is that Book Value (*BV*) and Rate Base (*RB*) are not identical financial concepts. Non-regulated businesses have Book Value but do not have Rate Base. Book Value for non-regulated businesses means the value on the corporate balance sheet. As a business retains earnings, these earnings are booked at the value earned. Similarly, debt and equity are booked at the value at which they are raised. Good will and other concepts are included.

Rate Base for regulated utilities is defined as the original cost of utility investments less accumulated depreciation. Book Value and Rate Base concepts can also differ conceptually and quantitatively. For example, utility taxes and regulatory tax treatment usually have significantly different timing. When utilities make significant investments, they take accelerated tax depreciation and often earn tax credits. However, these tax benefits are often treated by regulators as benefits for consumers, not investors. When this happens, the MBR is suppressed. However, in the out years, as these prior consumer benefits that regulators captured historically are repaid, MBR increases.

Similarly, any deferred Construction Work in Progress (CWIP) or Allowance for Funds Used During Construction (AFUDC) would be deferred in rate base. This would mean that Book Value and Rate Base are not equal. The market price

would also be affected as customers are able to defer paying for new investments. How these combine to affect MBR is ambiguous. What is not ambiguous is the fact that for an industry that is currently catching up to past deferments in earnings and not making new capital expenditures, MBR likely would exceed one, on an industry-wide basis.

PSE is different. While it also has an MBR exceeding one, it lags the industry as it begins to add new infrastructure and to grow. I read this to mean that PSE needs a higher ROE. Mr. Hill and Dr. Wilson reach the opposite conclusion and would penalize PSE by authorizing single digit ROEs.

A related matter is that finance theory would expect original cost less depreciation to equal replacement value. If technology and production costs are declining, MBR would increase. The utility industry and PSE have increased productivity. This means that MBR greater than one is not a reason to penalize a utility that has made strides to reduce operating costs and select more efficient capital replacements.

In sum, an MBR equal to one would be a statistical aberration and it should not be made a regulatory goal.

Q. What is the fourth assumption that would cause MBR to exceed one?

A. The fourth assumption is that, holding everything else constant when annual depreciation exceeds annual capital expenses, the business can return capital funds to owners and MBR would increase because share prices would reflect capital returns. This is often the case for utilities that are abandoning traditional

rate base financing. This is not the situation in which PSE finds itself. Nevertheless, utility stocks trade in a market where there is high correlation. This pushes most utilities to have an MBR greater than one.

In PSE's case, investing more in traditional rate base means future earnings growth and likely future dividend and cash per share growth. If regulators set a just and reasonable return, PSE will keep its MBR above one due to rate base growth and future cash flow. Table 6 shows these data for PSE.

Table 6

	2004/2005 In Millions of Dollars	2005/2006 In Millions of Dollars
Capital Expenditures	$604.3	$360.4
Depreciation	$168.4	$225.4
	2004	**2005**
Cash Flow per Share	$4.05	$4.45
Earnings per Share	$1.25	$1.55

For PSE, capital expenditures exceed depreciation. This suppresses MBR relative to others and is consistent with PSE's relatively lower MBR (1.28) compared to Mr. Hill's sample group (1.45). That said, PSE expects to grow cash flow and earnings per share as it finances much of this growth out of increased retention and recent dividend reductions.

Q. What is the fifth assumption that would cause MBR to exceed one.

A. The fifth assumption is that when cash flow per share exceeds earnings per share

as Table 4 shows to be the case for PSE, the MBR would increase above one. Mr. Hill and Dr. Wilson ignore much of the meaning behind these facts. As a result, they propose to reduce the authorized ROE because PSE's MBR exceeds one. I conclude that the facts discussed here make a compelling case to do the opposite (*i.e.,* increase PSE's ROE) and to reflect the rate year ended capital structure in the authorized ROR.

E. Capital Structure

Q. Do you agree with Mr. Hill's discussion, commencing on page 17 of his direct testimony, as to why the Commission should set PSE's common equity at 40%?

A. No. PSE has, as I explained in my direct testimony, cut its dividend from $1.84 to $1.00 per share and increased its equity share. The Company is targeting the 45% equity that it proposes in this rate case, and I support that proposal. Mr. Hill would set the common equity share at 40%, which is below rate year levels, and less than Dr. Wilson's 41.84% equity share.[3] Mr. Hill makes several claims in his direct testimony concerning PSE's equity share with which I disagree.

First, he looks backwards, not forwards. This is wrong because PSE continues to increase its equity share, consistent with its efforts to strengthen its financial health.

[3] In effect, Mr. Hill would use a lower equity share than Dr. Wilson, which is somewhat offset by his higher recommended ROE.

Second, Mr. Hill virtually ignores the effect of PSE's high reliance on purchased power. Purchased power obligations, like debt, increase the risk associated with ROE, and therefore, the cost of capital. Mr. Hill inconsistently gives short shrift to PSE's non-equity liability in setting ROE and at the same time, dampens the share of equity in PSE's capital structure.

Third, Mr. Hill brings in affiliate debt reported in consolidated accounting. This Commission isolates utility related finance. Mr. Hill's analysis is misleading and erroneously suggests that PSE may be subsidizing non-regulated businesses with utility customer dollars. Such subsidies cannot occur since PSE's cost of service excludes activities outside the utility or "below-the-line."

Fourth, PSE has a corporate credit rating at the low end of BBB-. Mr. Hill treats PSE as though it were in the middle of the utility pack. It is not. Mr. Hill's combined ROE and equity percentage recommendations likely will push PSE further towards the very bottom of the list of utility bonds that I show in Exhibit No. ___(CJC-3).

Q. In his direct testimony, Mr. Lazar suggests that the Commission allocate PSE's costs differently to various customer classes by setting a different ROE for gas operations, electric operations, and generation. Please respond to his recommendation.

A. There are three very simple and widely accepted reasons why regulators have, in my three plus decades of regulatory experience, rejected the type of differentiated rate of return proposal that Mr. Lazar supports in this proceeding.

First, utilities are often, as is PSE, fully integrated. This literally means that there are significant "common" costs, which cannot reasonably be unbundled or assigned to different users based on cost causality. Put simply, a new base load generation unit can be and likely would be used by original and new customers, big volume and small customers, peak and off-peak. There is no reasonable basis for making a differentiated ROE allocation associated with a new generation unit to a particular group of customers.

PSE also purchases significant amounts of natural gas and electricity. The energy purchases are a very significant share of PSE's revenue requirements. There is no sensible way to allocate different energy purchase costs to different categories or groups of fully bundled customer categories. Utility regulation puts all income on the rate base formula with no fuel or purchase power mark ups.

Second, certain costs and services that can be segregated (*e.g.,* voltage losses, distribution costs, transformation investments, metering and billing) are separately assigned and attributed using well-known and widely accepted cost-of-service allocation methods. Mr. Lazar wants to go further, attempting to do something that cannot be done. Mr. Lazar would seek to allocate differentially, in terms of different ROE, the capital produced internally from past investments and currently commingled revenue requirements, as well as newly secured new debt and equity. These capital funds come from different sources. They cannot be allocated or attributed because internal and external finance is a common cost. There is no practical way to separately assign vintaged sources of funds used to finance utility investments.

Third, the cost of capital is a blended or weighted average mix of long-term debt using vintage, embedded coupon rates, current short-term debt used to secure purchased energy, and other operating costs, plus equity made up mostly of retained earnings from past years. This blend is the weighted cost of capital, or components that make up the overall ROR.

Mr. Lazar offers no objective basis to assign these components of capital cost. There simply is none. The Commission should reject this flawed proposal.

F. Critique of ROE Analyses Undertaken by Mr. Hill and Dr. Wilson

Q. Mr. Hill has conducted an ROE analysis using a proxy group that differs from both your proxy group and that chosen by Mr. Wilson. Please describe the proxy group chosen by Mr. Hill.

A. Mr. Hill has chosen a proxy group based on the following criteria: (i) the company must not be in the process of merging or being acquired and must not have had an upward stock price shift due to that merger; (ii) no recent cut or omitted dividends; (iii) bond rating between BBB- and BBB+; (iv) generation assets; (v) a stable book value; and (vi) at least 50% of revenues generated by electric utility operations. Mr. Hill identifies thirteen electric and electric/gas combination utilities that passed his screen.

Q. What is your overall reaction to the peer group selected by Mr. Hill?

A. First, two of the companies that Mr. Hill claims passed his screen did not in fact pass his screen. Mr. Hill's Exhibit No. ___(SGH-8) shows his selection criteria.

Great Plains Energy is shown on that exhibit as having only 48% of its revenue derived from electricity sales, below the 50% threshold chosen by Mr. Hill. Thus, it does not pass Mr. Hill's screen. Pinnacle West Capital is shown on Exhibit No. ___(SGH-8) as having an A- bond rating, which is beyond the parameters of Mr. Hill's screen.

Additionally, I disagree with certain of the companies chosen by Mr. Hill's screen because they are much larger than PSE, and thus not truly representative peers. For example, in terms of customers served, Energy East, Progress Energy, and Entergy are more than twice as big as PSE. First Energy is more than three times as big. All have relatively recently been formed by fairly large mergers.

However, the factor that I find most lacking in Mr. Hill's criteria for inclusion as a peer is whether the utility is located in a state that is restructuring. As I have said, there are substantial differences in the regulatory treatment of utilities between those located in states that have opted not to restructure and those located in states that have opted to restructure. Therefore, states located in states where restructuring is active or has been pursued should be excluded from PSE's peer group. This restriction would eliminate six of Mr. Hill's choices (Energy East, First Energy, Cinergy, Entergy, PNM, and Pinnacle West), all of which have utility subsidiaries located in states that have undergone restructuring (the first five) or have undertaken then repealed industry restructuring (Pinnacle West in Arizona).

Q. Mr. Hill asserts at page 33 of his direct testimony that his selection criteria have produced a peer group that is similar in risk to PSE. Do you agree with

his claim?

A. No. Mr. Hill cites several factors as "proving" that his peer group is similar in risk to PSE. He cites price/earnings (P/E) ratios, analysts' buy/sell recommendations, and first mortgage bond ratings. I will address each in turn.

Q. What does Mr. Hill assert with respect to P/E ratios?

A. Mr. Hill asserts that the average P/E ratio for the electric industry is 14.5 and that his sample group has a P/E ratio of 14.85. Mr. Hill asserts that Puget's P/E ratio is 16.3, from which he concludes that "Puget can be considered to have lower investment risk..." The fallacy and incompleteness in Mr. Hill's approach can be demonstrated when one recognizes the full meaning of P/E ratio comparisons. Let's begin with the simple inverse of a P/E ratio of 10/1, which is 1/(P/E), or 1/10 = 10%. The inverse of a P/E ratio is a rudimentary measure of current returns to investors because it divides current earnings per share by the current share price. However, finance students are quickly warned that investor expectations are seldom limited to current earnings and prices.

The most common explanation is that: *Expected Return = E/P + PVGR*, where *PVGR* is growth in future earnings per share (EPS growth).

Therefore, a company with a P/E ratio of 10.0 and expected growth (*PVGR*) of 3%, would have an expected return of 1/10 + 3%, or 10% + 3%, or 13%.

Mr. Hill reports that the BBB-rated utilities in his sample group have a P/E ratio of 14.85 and that PSE has a P/E ratio of 16.3. Stated in inverse P/E form, their

current returns would be 6.73%(1/14.85), and 6.13%(1/16.3), respectively. Mr. Hill then concludes PSE has lower risk, presumably because it has a lower current return. There are two important things missing in Mr. Hill's logic. First, PSE has a built-in earnings drag that reduces EPS and a recent disallowance of expense recovery of 28¢ per share after taxes. These reduce current E/P. Second, PSE expects to add to utility plant faster than it is depreciating original cost. This means its PVGR will likely increase faster than other utilities that are investing as quickly as PSE.

If this Commission recognizes that the relative growth in PSE's utility plant provides a reasonable opportunity for PSE to earn a return commensurate with current costs of capital and risk, PSE's PVGR will grow. This growth would likely exceed the growth for Mr. Hill's BBB-rated peers.

Mr. Hill and Dr. Wilson recommend that this Commission slash PSE's ROE by about 125 and 200 basis points, respectively. This would cause PSE's stock price to fall and earnings to erode. The irony is that PSE's P/E would likely fall along with PSE's realized returns.

Q. What does Mr. Hill assert with respect to bond ratings?

A. Mr. Hill begins with PSE's First Mortgage Bond Rating of BBB. However, Mr. Hill fails to address my Exhibit No. ___(CJC-3), Standard and Poors' Credit Ratings for Utilities, which I updated as of September 2004 and ranks PSE 92nd out of 107 utility companies. It is also important to recognize that PSE's corporate unsecured rating is actually BBB-. Of the companies chosen by Mr.

Hill as representative of PSE's risk, only Central Vermont Power has PSE's BBB- rating. All the others have superior ratings, making his sample group not comparable to PSE. The crux of the problem facing PSE is its poor credit rating, which will make it more difficult and expensive to attract the capital it needs to serve its customers. Authorizing an ROE in the range suggested by Mr. Hill will help ensure that PSE's credit rating will remain mired in the bottom region of Standard and Poors ratings and as I discuss may even decline for both PSE's secured and unsecured debt.

Q. Have you reviewed the authorized ROEs for Mr. Hill's sample group?

A. Yes. I reviewed the authorized ROEs as reported in Valueline. Some of these authorized ROEs have been in place for many years, while some are the result of more recent rate orders. Nevertheless, the average authorized ROEs as reported in Valueline for Mr. Hill's sample group is 11.85%. More telling, the sample group earned 10.025% on average common equity in 2003 according to Valueline. In contrast, PSE earned only 7.0% on average common equity in 2003 according to Valueline, well below its authorized ROE of 11% and about 300 basis points less than Mr. Hill's sample group. Mr. Hill's sample group is far different from PSE in this respect. This serves to highlight the financial challenges that are faced by PSE that exacerbate its ability to implement its strategy to serve customers effectively, as described by Mr. Reynolds.

Q. Please remind us of the criteria you used to pick your sample group of utilities.

A. I included electric utilities that were about PSE's size, provided electricity and natural gas service, and served customers in a state that has rejected restructuring. As a check, I also included a sample where I included both non-gas and combination utilities.

Q. Do the utilities in Mr. Hill's sample group pass your criteria?

A. Only one does. Mr. Hill and I agree that PNM should be in the sample. However, the balance of the sample group chosen by Mr. Hill do not meet my criteria for a relevant peer group. Six of his sample group of utilities are located in states that have not rejected restructuring. These include Energy East (New York and Maine), FirstEnergy (Ohio, Pennsylvania, and New Jersey), Cinergy (Ohio), Entergy (Texas, Arkansas), and Pinnacle West (Arizona).

Eight of Mr. Hill's sample group are not combination gas and electric utilities, and thus are not faced with the substantial gas system investment that PSE needs to make. These all-electric utilities are Central Vermont, FirstEnergy, CLECO, Empire District, Great Plains, Hawaiian Electric, and Pinnacle West. Further, Progress Energy is 94% electric and Cinergy is 77% electric.

As I previously noted, four of the utilities in Mr. Hill's sample group are much larger than PSE. For example, Energy East, Progress Energy and Entergy are all more than twice as large as PSE in terms of customers served. FirstEnergy is more than three times as large as PSE in terms of customers served.

Q. What growth rate did Mr. Hill use in his DCF analysis?

A. Mr. Hill describes the growth rate he used in his DCF analysis at pages 34-38 of his testimony as the "five year sustainable growth rate." In essence, Mr. Hill's growth rate is a combination of what he describes as Internal Growth and External Growth. Mr. Hill shows his Internal Growth rate calculations in Exhibit No. ___(SGH-9). His internal growth rate is the product of the utility's ratio of retained earnings ("B") and its earned return on equity ("R"). Mr. Hill describes his B*R internal growth rate at page 34 of his direct testimony.

Q. Do you concur with Mr. Hill's approach?

A. No. In effect, Mr. Hill assumes that electric utilities are free, as are unregulated firms, to make their retained earnings and future investment decisions in a manner that maximizes shareholder value measured through its sustainable growth rate. Regulated firms are different from unregulated firms. First, utility investment options are constrained by their duty to serve. As I have repeatedly stated, PSE is in a position where it needs to make substantial infrastructure investments. Second, earnings are regulated. Third, cash flow from depreciating rate base tends to be more important for regulated companies than it is for unregulated companies. Mr. Hill fails to recognize or consider the meaning of any of this in his DCF analyses growth rate. Consequently, Mr. Hill's analyses produce biased underestimates of the ROE that PSE needs.

Q. Does Mr. Hill use the internal growth rates he computes in Exhibit No. ____(SGH-9) in his ROE analysis?

A. No, he does not, even though he shows his calculations and resulting internal

growth rate for each company in his sample group in Exhibit No. ____(SGH-9). In his Exhibit No. ___(SGH-4), Mr. Hill recites a litany of projected growth rates published by Valueline, including dividend growth and book value growth. Mr. Hill then reaches a conclusion as to what a "reasonable" growth rate would be. This is the growth rate that he purports to plug into Exhibit No. ___(SGH-10) as the internal growth rate component of the overall sustainable growth rate for his DCF analysis.

Table 7 below compares the sustainable internal growth rates that Mr. Hill goes to great length to compute and present in his Exhibit No. ____(SGH-9) to the internal sustainable growth rates (BR or "g" for 2003) that Mr. Hill thinks are "reasonable" (as shown in his Exhibit No. ___(SGH-10)) to use for his sample group of utilities. These "estimated" internal growth rates are the internal growth rates that Mr. Hill uses in his sustainable growth calculations in Exhibit No. ____(SGH-10).

TABLE 7

Company	Internal Growth Rate From SGH-9	Internal Growth Rate From SGH-10
Central Vermont	2.28%	4.25%
Energy Eat	5.83%	4.50%
FirstEnergy	3.82%	4.75%
Progress Energy	3.26%	3.75%
Cinergy	3.19%	4.00%
Cleco	5.05%	4.50%
Empire District	-1.15%	3.50%
Entergy	5.45%	5.75%
Great Plains	1.23%	4.00%
Hawaiian Electric	1.89%	3.25%
PNM Resources	6.01%	5.00%
Pinnacle West	5.32%	4.50%
Puget Energy	-0.02%	4.00%
Average	3.24%	4.29%

Q. Please comment on Mr. Hill's approach regarding internal growth rate.

A. There is a widely accepted tenet in quantitative analysis that the final calculation can be no more reliable than the weakest link in the mathematical chain of logic. Here, Mr. Hill has failed to address the fact that PSE has cut its dividends and that his formulas cannot deal with such negative dividend growth. Accordingly, Mr. Hill looks to other utilities for a basis for assuming some positive dividend growth. But he concludes that this dividend growth is still too small because, when he adds the low dividend growth to yield for others, he finds that, for some, equity would have a lower cost of capital than new utility bonds. This result is neither logical nor reasonable.

Q. In his Exhibit No. ___(SGH-4), Mr. Hill suggests that Valueline presented expectations with respect to sustainable growth for each of the utilities in his sample group. Please comment on this suggestion.

A. Mr. Hill is wrong in suggesting that Valueline published or discussed the sustainable growth rates he uses. Valueline does not use the term "sustainable growth" in discussing the utilities in Mr. Hill's sample group. Valueline simply does not use this term in its discussion of utilities. Rather, Valueline published its projected earnings per share, dividend per share, and return on common equity. From these, Mr. Hill has apparently calculated what he calls a sustainable growth rate by adding his estimate of new share issuance growth. However, this is Mr. Hill's own creation. Simply because he used numbers published by Valueline does not in any way mean that Mr. Hill can bootstrap a suggestion that Valueline concurs with his sustainable growth number or that his sustainable growth number

has meaning. Mr. Hill suggests that Valueline endorses his methodology. It does not.

Q. Please describe Mr. Hill's external growth rate.

A. Mr. Hill calculates what he calls an external growth rate that he adds to his internal growth rate. At page 37 of his direct testimony, Mr. Hill states that "because a goal of regulation is to duplicate the strictures of the competitive marketplace and, in so doing, to allow a utility to recover no more than its cost of capital, it is reasonable to assume that the market price/book value ratio would have a tendency towards unity in order to mitigate the impact of over-earning on the projected external growth rate." Mr. Hill's formula for external growth rate is set forth in Exhibit No. ___(SGH-10) as: *g*((M/B + 1)2-1,* where "*g*" is Mr. Hill's unsupported estimate of expected growth in shares and "*M/B*" is the current market to book ratio for the utility. In essence, Mr. Hill takes the average of each of his sample companies' current market price/book ratio plus one and multiplies by his unsupported estimate of growth in new shares to compute what he describes as investors' expectations of the future. He then adds this number to his unsupported estimate of sustainable internal growth rates to further adjust upwards his long-term sustainable growth rates. Moreover, I note that, in the calculations Mr. Hill sets out for each of his sample utilities, he does not appear to apply his own formula. Rather, the formula set out for the individual companies is: *g*((M/B–1)/2-1).* I assume that the first formula is the correct one, and that Mr. Hill meant "*M/B+1*", not "*M/B-1.*"

Q. What is your reaction to Mr. Hill's methodology?

A. It is totally subjective. Without any basis or explanation, Mr. Hill increases the growth rates he uses for his sample group from an average of 3.2% to 4.3%. Mr. Hill also appears to arbitrarily assume share growth for the utilities, so as to use a formula to calculate what he calls external growth. These are pure guesses, despite their mathematical complexity and his error in Exhibit No. ___(SGH-10). He points to reported growth rates from Valueline, but in the end, he disregards all the published growth rates for a rate that he considers to be "reasonable." Mr. Hill could achieve any ROE recommendation he wanted by varying the growth rates he uses. This approach is subjective and ignores the multitude of differences within his peer group and between PSE and the companies in his sample group. This degree of subjectivity raises substantial questions about Mr. Hill's approach and his recommendations.

Q. Would Mr. Hill's DCF approach support his recommendations?

A. No. His "sustainable" growth rates would have produced an ROE in his DCF analysis that would have approximated the cost of debt, and would be *de facto* unreasonable. To demonstrate this, I substituted the growth rates produced by his sustainable growth analysis (from Exhibit No. ___(SGH-9)) for the growth rates he judged to be "reasonable." Table 8 below shows the comparisons in ROEs from these three perspectives in Mr. Hill's testimony.

TABLE 8

Company	ROE Using Internal Growth Rates From SGH-9	ROE Using External Growth Rates From SGH-9 and Internal Growth Rates From SGH-10	Adjusted ROE From Growth Rates From SGH-10
Central Vermont	6.91%	6.98%	8.95%
Energy East	10.12%	10.30%	8.96%
FirstEnergy	7.64%	8.13%	9.06%
Progress Energy	8.68%	9.02%	9.52%
Cinergy	8.02%	8.81%	9.63%
Cleco	10.28%	10.61%	10.06%
Empire District	5.17%	5.80%	10.46%
Entergy	8.72%	8.72%	9.02%
Great Plains	6.88%	8.08%	10.85%
Hawaiian Electric	6.74%	7.35%	8.71%
PNM Resources	9.08%	9.08%	8.07%
Pinnacle West	9.90%	9.94%	9.12%
Puget Energy	4.56%	4.70%	8.72%
Average	**7.90%**	**8.27%**	**9.32%**

Several things become readily apparent when Table 8 is examined. First, the average ROE that Mr. Hill would have derived for his sample group had he not "adjusted" the internal growth rates he developed would be 105 basis points lower (8.27 versus 9.32) than the average ROE he actually calculated. And had he not further adjusted his growth rates by adding his estimate of external growth rates, his ROE would have been 7.9%, 142 basis points below the average ROE he actually calculated. And recall that even Mr. Hill thought that the 9.32% ROE was too low and he "generously" adjusted it upwards to 9.75%.

Second, there is much more variation in the ROEs Mr. Hill's method produces if he does not smooth out the results by manipulating his internal growth rates. For example, the ROEs produced for Mr. Hill's sample group range from a low of 4.70% to a high of 10.61%, a range of 591 basis points, when his Exhibit No. ___(SGH-9) internal growth rate is used with his external growth rate. The

results are equally dramatic when only Mr. Hill's internal growth rate from Exhibit No. ___(SGH-9) is used, ranging from 4.56% to 10.28%, a range of 572 basis points.

Third, the ROE for PSE produced by Mr. Hill's methodology is 4.70%, below the cost of PSE's debt. With his methodology producing such drastic and unreasonable results, Mr. Hill was required to force the data by unilaterally and subjectively adjusting the internal and external growth rates. Mr. Hill calculated internal and external growth rates then ultimately discarded them in favor of a subjective, unsupported assessment as to what would be "reasonable."

Q. Please comment on Dr. Wilson's overall recommendations in this proceeding.

A. Dr. Wilson recommends a 9% ROE and a 42% equity share. He relies primarily on DCF and CAPM approaches, as do I. Dr. Wilson, however, thinks that PSE's authorized ROE should be slashed by 200 basis points. He relies, in part, on his observation that MBR exceeds one, which he states, at page 8 of his direct testimony, indicates "that investors are expecting returns in excess of capital costs." Notwithstanding this "expectation," Dr. Wilson suggests that this Commission should slash 200 basis points from PSE's authorized ROE while expecting the market to support PSE in making major capital additions. Dr. Wilson proposes that PSE continue on as it has, only for less money, and apparently presumes that the market and investors will not notice this development as long as PSE's MBR exceeds one.

I reject this logic. I will not repeat all my criticism of MBR. I have already

criticized Mr. Hill's assertions regarding MBR. Those critiques apply equally to Dr. Wilson's similar assertions.

Q. What is your opinion of Dr. Wilson's DCF analysis?

A. Dr. Wilson begins by stating that DCF debates generally come down to differences in opinion about "yield" and "growth." He erroneously ignores the more fundamental issues of whether DCF theory fits PSE's facts and whether he has even performed a sensible DCF analysis of PSE.

First, PSE has a low yield and negative dividend growth because it cut its dividend and increased its equity capitalization. Rotely-applied, DCF theory does not fit PSE's facts.

Second, the DCF theory, as Dr. Wilson applies it, is based on the same false assumption used by Mr. Hill: both assume an equivalence of cash, earnings, and dividend growth. This is not the same for PSE. Although PSE has positive cash and earnings, it has negative dividend growth.

Third, Dr. Wilson fails to recognize that investors purchase stocks for a combination of dividend yield and price appreciation expectations. Often, when the assumed equivalence described above does not hold, price expectation or appreciation becomes more important than dividend yield.

Q. Does Dr. Wilson perform a sensible DCF analysis of PSE?

A. No. For his DCF analysis, Dr. Wilson uses arbitrary assumptions in an attempt to compensate for the reality that, in Exhibit No. ___(JWW-4), two utilities in his

sample group have zero dividends, five have negative dividend growth rates, and two are reported as having no meaningful figures (NMF).

Dr. Wilson concludes that average DCF for his sample group is 7.77%. However, if one were to perform his DCF analysis using only the three utilities that do not have negative dividend growth or zero dividends (NMF), there would be a sample of three utilities. I show in Table 9 the "DCF" that would result from using this small sample.

TABLE 9
Remaining Utilities in JWW-4

Utility	Receent Yield	Valueline Growth	IBES Growth
MDU	2.80%	5.40%	9.00%
WPS	4.80%	1.80%	6.00%
SCANA	3.80%	5.20%	5.00%

Resulting "DCF"

Utility	Valueline	IBES
MDU	8.20%	11.80%
WPS	6.60%	10.80%
SCANA	9.00%	8.80%
Average	8.00%	10.50%

Midpoint of Averages: 9.25%

Q. What do you conclude from this?

A. Using Dr. Wilson's sample group would indicate about 150 basis points (7.77% not 9.25%) less than would have been determined had he eliminated all the negative growth and zero dividend utilities from the sample group.

Next, Dr. Wilson applies a concept of fundamental growth in Exhibit No. ___(JWW-5). This increases his group DCF to 8.63%. Here, Dr. Wilson ignores IBES, the higher of the two growth rates that he relied upon in Exhibit No. ___(JWW-4) for projected growth.

In Exhibit No. ___(JWW-4), the average Valueline DCF was 6.6%. Using projected yield increases and assuming (for purposes of my analysis here) what Dr. Wilson calls "Fundamental Growth," this group DCF is 8.63%. If these same 203 basis points of average differential were added to his average DCF estimates based on the IBES numbers from Exhibit No. ___(JWW-4), Dr. Wilson's new DCF using IBES would increase to 10.93% (8.9% + 2.03%). This is close to PSE's currently authorized ROE of 11% and 193 basis points above Dr. Wilson's proposed ROE.

Using the 4.8% projected yield in Exhibit No. ___(JWW-5) for PSE and IBES' projected 6.0% growth in Exhibit No. ___(JWW-4) would yield a PSE DCF of 10.8%, which is also close to PSE's current authorized ROE.

Finally, using the three utilities from his sample group that do not have negative dividend growth or zero dividends, the average DCF using Exhibit No. ___(JWW-5) would be 9.3%. When I add the 203 basis point difference between IBES and Valueline, the DCF for the three utilities increases to 11.33%, which approaches the 11.75% that I recommend in this proceeding.

III. THE CORE DIFFERENCES

Q. The three ROE witnesses in this proceeding each employs a DCF analysis in reaching his conclusions related to establishing a just and reasonable ROE. What is the key factor that separates your recommendation from those of Dr. Wilson and Mr. Hill?

A. As Dr. Wilson states, the key factor that separates my recommendation from the recommendations of the two other witnesses is the *g* factor, or the growth rate used in the DCF calculations.

Q. Please explain why you conclude that "g" should be higher for PSE than the growth rates used by Dr. Wilson and Mr. Hill.

A. The basic core principal behind the DCF is that free cash flow (*FCF*), which is the total amount of cash that can flow to shareholders and long-term interest bearing debt holders, determines and drives a firm's valuation. Firm valuation is typically defined as:

$$PV = FCF_1/(1+k) + FCF_2/(1+k)^2 + ...FCF_t/(1+k)^t$$

The first simplifying assumption needed to convert a firm's valuation to a cost of equity capital model is to assume that *FCF* grows at a constant rate of growth for *g*. Therefore, under this assumption:

$$FCF_t = FCF_1 + (1+g)^{(t-1)}$$

The second simplifying assumption is that *FCF* grows at a rate *"g"* into

perpetuity. Under this assumption, *PV* becomes:

$$PV = FCF_1/(k-g)$$

The cost of equity capital, "*k*," becomes:

$$k = (FCF_1/PV) + g$$

Starting in year 0, this becomes:

$$k = (FCF_0(1+g)/PV) + g$$

A well-known and cited drawback is that *k* must exceed *g*, since *g* is assumed to be constant (assumption 1). If growth exceeds the cost of equity in perpetuity, the value of the firm is negative. This result is not reasonable because, in fact, when *g* exceeds *k* and both are assumed to be constant over time, would mean that the firm's value would be infinite. This would also happen when *k* equals *g*. Literally, the firm would own everything in the future.

The practical solution is to limit the concept of exceptional growth (*i.e.*, when *g* exceeds *k*) to a finite time period. This is sometimes called, as Ibbotson notes, a two-stage growth model. Indeed, multi-stage growth models such as a three period or three stage model may make more sense in a DCF model. In practice, some firms may grow exceptionally fast for a brief period (*e.g.*, two to five years). This might be followed by an intermediate period of slightly higher than sustainable growth, followed in turn by the final stage of normal or sustainable growth. The following formula would apply for a three stage growth model, holding *k* constant.

$$PV = \sum_{t=1}^{N1} FCF_0(1+g)^t/(1+k)^t + \sum_{t=N1+1}^{N2} FCF_{N1}(1+g_2)^t/(1+k)^t + \frac{\frac{FCF_{N2}(1+g_3)}{(k-g_3)}}{(1-k)^{N2}}$$

The difficulty and flaw with a simplified DCF is that the possibility of initial above normal growth above the sustainable growth must either be ignored or somehow assumed away. This would lead to significant biases in estimating *PV* and the estimated value of *k,* or cost of capital.

This difficulty is circular, which means that using DCF correctly to determine a firm's value will require that the estimated value of *k* be reduced if it is assumed that current market prices per share correctly forecast future patterns of above normal growth followed by periods approaching sustainable, or normal, growth. Failure to recognize this fact is the primary reason why Mr. Hill does not correctly interpret PSE's current MBR greater than one. Put simply, an MBR greater than one could easily mean, in part, that the market expects some near-term growth in excess of that which is sustainable, or the normal *g* of the simplified DCF analysis. This conclusion also means that the simplified DCF is too low because the assumptions underlying the DCF are invalid.

If this same set of facts in viewed from the perspective of how to measure *k*, or ROE, exceptional growth, holding the price per share constant, would mean that as the periods of higher than normal growth occur, the estimated *k* or discount factor would also need to increase.

Q. Are there additional differences related to the interpretation that you place on *g* compared to Mr. Hill and Dr. Wilson?

A. Yes. Sustainable growth depends upon the plow back or retention rate and ROE. Mr. Hill and Dr. Wilson make a third assumption concerning *g*. They assume that *g* is constant over time and that dividends per share, earnings per share (EPS), and cash per share all grow at the same rate "*g*". This assumption does not fit the facts for PSE.

Table 10 shows Valueline's past values and future estimates for PSE's dividends, EPS, and cash flow per share.

Table 10

Retention based on Earnings per Share

Year	Earnings per Share	Dividends per Share	Retention Rate
2002	$1.24	$1.21	2.42%
2003	$1.22	$1.00	18.03%
2004	$1.25	$1.00	20.00%
2005	$1.55	$1.00	35.48%
2007-09	$1.75	$1.12	36.00%

Retention Based on Cash Flow

Year	Cash Flow per Share	Dividends per Share	Retention Rate
2002	$3.80	$1.21	68.16%
2003	$3.90	$1.00	74.36%
2004	$4.05	$1.00	75.31%
2005	$4.45	$1.00	77.53%
2007-09	$5.00	$1.12	77.60%

Percent Growth Rates (year-to-year)

Year	EPS	Dividend	CFS
2003	-1.60	-17.40	2.60
2004	2.50	0.00	3.90
2005	24.00	0.00	9.80
2007-09	12.40	12.00	12.40

The first conclusion to reach from Table 11 is that the assumption of constant growth in these three factors for PSE is neither sensible nor reasonable.

The second conclusion to reach is related to retention rates, which are sharply increasing in terms of both EPS and cash flow per share (CFS). During 2005, Valueline expects PSE's EPS and CFS to increase to about 35.5% and 77.5%, respectively. These improvements result directly from three important factors: (i) PSE has slashed its dividend; (ii) PSE is financing needed utility plant with internally generated cash flow and equity; and (iii) PSE is reducing its debt to equity ratio as it moves towards the 45% equity ratio it seeks in this proceeding.

The third conclusion I reach flows from the assumption that the market expects these improvements to happen and that PSE will be able to timely recover its costs. Three ways of using the PSE data from Table 10 to estimate *g* or sustainable internal growth are particularly relevant. For 2004 to 2005, these are:

- EPS growth (24%) * Equity Retention (35.5%) = 8.5%
- CFS Growth (9.8%) * Cash Flow Retention (77.5%) = 7.6%
- Authorized ROE (11%) * Cash Flow Retention (77.5%) = 8.5%

The first two are what the market observes for PSE. The last is what the market might surmise as a near-term growth objective for a utility with a currently authorized ROE of 11% and more than three fourths of its cash flow reinvested to grow necessary infrastructure.

Mr. Hill looks to a purported peer group of utilities to set his sustainable "*g*" for

PSE at 4.28%. This is significantly less that the three *"g"* values I show above for a company such as PSE that is growing faster and financing much of its increasing equity share from internally generated cash flow.

Adding PSE's current dividend yield of 4.5% to Mr. Hill's *"g"* would yield a DCF of about 8.3%, well below PSE's current authorized 11% ROE.

Adding PSE's current dividend yield of 4.5% to the mid-range of 7.6% and 8.5% that I determined above, would put PSE's ROE at 12.55%. Given PSE's growth in investments and retention ratios. Indeed, I continue to recommend an increase to 11.75%, assuming that attrition losses are addressed and 12.5% if these issues are not resolved.

Finally, Mr. Hill would reduce PSE's authorized ROE due to PSE's MBR in excess of one. This should not be done because the market is pricing PSE according to expected significant improvement in cash and earnings retention as it expands its rate base (or book value) using internally generated cash flow and an expected supportive regulatory environment.

Q. Is your rebuttal DCF analysis consistent with your direct testimony?

A. Yes. I believe that financial markets are efficient and that market participants generally interpret information rationally and transparently. That said, I relied upon PSE's share price growth in my direct testimony to capture the market's interpretation of PSE's growth, rate base additions, internal financing of such infrastructure and increasing equity finance.

Q. Do you have any further adjustments to make to the DCF evidence, in response to Mr. Hill and Dr. Wilson, which is in dispute in this proceeding?

A. Yes. PSE pays quarterly dividends, as do most utilities. Additionally, Valueline has projected dividend growth for PSE of 12% after 2005. Both facts could increase the DCF calculation if reasonably included in a more complex and relevant DCF formula.

Q. Can you demonstrate what you mean?

A. Yes. I will begin with a simple DCF calculation that derives an ROE of 12%, by setting yield (D_O/P_O), at 5% and growth (g) at 7%. Thus, the simple annual DCF would be:

$$\text{ROE (Simple Annual)} = D_O/P_O + g$$
$$= 5\% + 7\%$$
$$= 12\%$$

Next, consider what happens if D_O/P_O grows from its current level at the same g. The first adjustment to DCF would be:

$$\text{ROE (Dividend Growth)} = [D_O/P_O(1+g)] + g$$
$$= 5\%(1.07) + 7\%$$
$$= 12.35\%$$

The first adjustment to the simplified ROE is that if current yield is set too low, given expected growth in the test year, the DCF will under-estimate ROE because the test year D/P and current D_O/P_O would differ. In this example, the correctly

estimated ROE would be 35 basis points greater.

The second adjustment is to include quarterly dividend payments with a growth of g. Here, the corrected DCF formula is:

ROE(dividend growth and quarterly payments) =

$$[D/P(1/4)^{(1.12).75}+D/P(1/4)^{(1.12).5}+D/P(1/4)^{(1.12).25}+D/P(1/4)]^{(1+g)}+g$$

$D/P = 5\%$

$g = 7\%$

ROE = 12.585%

Combined, these two factors would add 58.5 basis points to the simple ROE of 12%.

Q. Is this formulation directly comparable to the continuous in perpetuity version of DCF that is based on Professor Gordon's DCF work?

A. No. The continuous growth in perpetuity model is the simplified DCF formulation that each expert in this proceeding used in their respective Direct Testimonies; to wit:

$$ROE = D_O/P_O + g$$

That said, it is well known that both adjustments described above are refinements that improve the applicability of the basic or simplified DCF to better fit particular facts in this proceeding.

I have previously demonstrated the third adjustment in a paper with Dr. Jeffrey Makholm. We explained that it is possible to derive a revised continuous discrete

dividend DCF in perpetuity, assuming continuous dividend payments to reflect the continuous trading activity of shares that recognize the approaching dividend payment. (*See* Exhibit No. ___(CJC-9).) The resulting formulation is:

$$ROE = D_O/P_O[ROE(ln(1+ROE))](1+g)+g$$

Putting ROE initially at 12%, the simplified value, it is possible to estimate a new ROE using this formula. Placing the newly estimated value in the formula, a second estimated ROE is determined. After three such iterations, the estimated continuous ROE in perpetuity with a one-step growth in current dividends and continuous dividend payouts into perpetuity would be 12.68%, or 68 basis points greater than the basic or simplified Gordon DCF in perpetuity would yield.

IV. CRITIQUE OF CAPM ANALYSES CONDUCTED BY MR. HILL AND DR. WILSON

Q. Do you have any conceptual differences with other witnesses' interpretations of CAPM?

A. Yes. Mr. Hill discussed using both the "geometric" and "arithmetic" average risk premium (return related to an index). However, the reference he cites, Ibbotson Associates,[4] leaves no room for uncertainty:--the arithmetic rather than the geometric average is to be used (*see* Exhibit No. ___(SGH-1T) at 71). Nevertheless, Mr. Hill implies there is some choice here. There is no such

[4] Ibbotson Associates, "Stocks, Bonds, Bills, and Ibbotson Valuation Edition" (SBBI), 2004 Yearbook.

ambiguity.

Similarly, Ibbotson also finds long-term bonds, not 90-day T-Bill, to be "appropriate" for long-horizon equity premium analyses used to determine business value and return on equity (*see* Exhibit No. ___(SGH-1T) at 69). Again, Mr. Hill suggests there is uncertainty about this matter, when, in fact, it is clear that a long-term federal bond should be used as the risk free proxy in the CAPM.

I concur with both of these Ibbotson conclusions. Mr. Hill seems less certain and introduces multiple estimates using unreasonable or inappropriate variables. This needlessly confuses the choices and analysis.

Q. Are there any other differences?

A. Yes. However, first I must say that I agree with Mr. Hill that leverage is important in determining ROE because more debt means more interest coverage risk and a higher cost of equity capital. In my direct testimony, I purposefully kept matters relatively simple and did not include an adjustment for PSE's leverage in my ROE recommendations. I also proposed using a 45% equity percentage in the capital structure.

Assuming my capital structure and ROE recommendations are followed, I would not propose additional adjustments for PSE's ROE. However, to the extent that m recommendations are not followed, the Beta in the CAPM should be releveraged. This is not necessary if the Commission approves a 45% equity share for PSE and raises ROE as I propose.

Q. How would you propose to releverage Beta if the Commission uses a Beta estimate for a peer group of companies that have relatively more equity than PSE?

A. Let's suppose by way of example that published peer companies are used to estimate PSE's beta. Let's also suppose that a peer group has 50% debt (D) and that PSE has 60% debt (DP). Let's further assume a 35% tax rate and .760 Beta for the peer group. I would support and propose to calculate an unlevered peer group beta (β_u) as follows:

$$\beta_u = \beta/(1+((d/1-D)*(1-T))$$

$$\beta_u = .76/((1+.5/.5)*(1-.35)$$

$$\beta_u = .4606$$

I would relever β_u for PSE using PSE's debt (DP)(.6) as follows:

$$B_{PSE} = \beta_u ((1+(DP/1-DP)*(1-T)$$

$$B_{PSE} = .4606 ((1+.6/.4)*(1-.35)$$

$$B_{PSE} = .9097$$

The difference would add 105 basis points to PSE's CAPM for these particular facts. I would propose a similar adjustment if peer companies are used to estimate PSE's Beta, since the peer group would likely have thicker equity than PSE as I previously discussed in detail.

Q. Did you include flotation costs in your ROE estimate?

A. No.

Q. Please explain why you did not do so and whether you should have done so.

A. Again, I have proposed a modest increase in PSE's allowed ROE.

I did not include floatation costs for new equity or debt issuances in my direct testimony. After reviewing Mr. Hill's and Dr. Wilson's direct testimonies, I now know that they propose to reduce PSE's authorized ROE, not increase it as I propose. Neither supports increasing PSE's equity share. Under those circumstances, I would propose an upward adjustment to their ROE estimates to reflect the sizable planned growth in PSE's number of outstanding shares, which will likely increase from about 99.5 million in 2004 to [redacted]. This represents an increase of more than [redacted] shares outstanding. This is more than [redacted] the growth Mr. Hill reflects in Exhibit Nos. ___(SGH-4) and ___(SGH-10), where Mr. Hill uses 1% per year for PSE's share growth to estimate his ROE. Table 11 shows the increase in shares outstanding.

TABLE 11
Common Shares Outstanding

2004	[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	[redacted]	[redacted]	

Table 12 shows the effect on debt equity ratios.

TABLE 12
Debt Equity Ratios

	2004	[redacted]	[redacted]	[redacted]
Total Common Equity	1,632,233	[redacted]	[redacted]	[redacted]
Total Preferred Stock	282,139	[redacted]	[redacted]	[redacted]
Long Term Debt	2,095,348	[redacted]	[redacted]	[redacted]
Total Capitalization	4,008,720	[redacted]	[redacted]	[redacted]
Equity %	**40.72%**	[redacted]	[redacted]	[redacted]

Q. Is there a widely used approach for reflecting floatation costs in an estimated ROE?

A. No. There are disputes as to how to alter the formulae used in these analyses. That said, there is no dispute that dilution of equity by issuing more shares would (1) would raise yield; (2) would add to the cost of capital as all proceeds measured are not fully realized; and (3) likely would, if it is rational to issue more shares, translate to a higher expected growth or "g."

Regardless of how it is reflected, PSE's significant new share issuance of more than [redacted] additional shares would increase its cost of equity and weighted average ROR under most reasonable assumptions.

Q. Do you have any other differences with Mr. Hill related to CAPM?

A. Yes. We disagree on the significance of PSE's relatively modest market

capitalization and how frequently its shares trade. Ibbotson (see page 149) reports that "small company betas tend to be under-measured." In other words, the betas are measured to be less than the company's actual risk and, as a result, these under-measured betas would yield a lower ROE CAPM estimate than their true cost of equity.

Q. Have you examined this possibility in PSE's case?

A. Yes. I begin by noting that my econometrically estimated beta for PSE is less than the industry betas used by Mr. Hill and Dr. Wilson, respectively, in their CAPM analyses. One explanation for this is that PSE has a smaller market capitalization than the peers used by Mr. Hill and Mr. Wilson. This difference could be the reason my econometrically estimated betas were less than Mr. Hill and Dr. Wilson use. I would, therefore, increase my ROE.

Second, this is likely also partially due to PSE's higher degree of leverage compared to the peers, as I previously discussed.

Third, Ibbotson has recently published an extensive quantitative analysis of beta and ROE estimates using CAPM in which it estimates (see page 133) about a 200 basis points higher ROE for mid-cap companies traded on the NYSE than for large cap stock.

Specifically, Ibbotson found that being in the fifth and sixth decile categories of NYSE firm size, starting with the largest market capitalization in the first decile, would add 183 to 203 basis points, respectively, to a CAPM analysis.

PSE has a current market capitalization of about $2.25 billion. There are 2,747 companies that trade on the NYSE. These companies have a combined market capitalization of $11.7 trillion. This is an average capitalization of about $4.26 billion.

This means that PSE has a below average market cap and would be in the mid to small cap range. This means that PSE's cost of equity would be expected to be higher than one would estimate by using data for companies that have greater market capitalizations or by using the typical broad market-based equity premium methods that rely on firms that are larger than PSE in estimating risk premiums.

Q. Does Mr. Hill also conduct a CAPM analysis?

A. Yes, he does. He shows his CAPM analysis in Exhibit No. ___(SGH-13). He does this analysis using a 30-year Treasury Bond and a 13-week T-Bill rate for the risk free rate component of his CAPM analysis.

Q. What does Mr. Hill use for his market risk premium?

A. In Exhibit No. ___(SGH-5), Mr. Hill states that he uses two different market risk premiums. In his CAPM analysis, Mr. Hill utilizes R.G. Ibbotson Associates' published average risk premiums between stocks and T-bills over the 1928-2003 time period, of 8.6% and 6.7% for average and geometric averages, and the corresponding average risk premium between stocks and long-term Treasury Bonds over the same period are 6.6% and 5.0%. He uses both an arithmetic average and a geometric average. Thus, Mr. Hill computes four different CAPM ROEs, ranging from 6.49% to 10.15%. Mr. Hill's calculations are not consistent

with Ibbotson's approach and have the effect of pulling down the low end of his ROE range.

Q. What is your opinion of these analyses by Mr. Hill?

A. Mr. Hill utilizes Valueline for the beta coefficient (equal to .76 based on his group of electricity companies) he uses in his CAPM. Valueline does not state publicly what risk free rate it uses in calculating its beta. Consequently, Mr. Hill's reliance on the 13-week T-Bill rate may mismatch T-Bill and T-Bond rates and fail to account for expected future spreads between short and long bonds. As I stated in my direct testimony, I avoided this potential quagmire by calculating my own beta for PSE. As Mr. Hill notes at page 54 of his direct testimony, my calculated beta is very close to the beta calculated by Valueline. This means I can apply the spread and interest rate consistently. In fact, I did so in my prefiled direct testimony.

Mr. Hill's results are too variable to be sensible. Using the 13-week Treasury Bill rate produces startling ROE estimates for PSE. Certainly, Mr. Hill's 6.94% ROE can be rejected out of hand as unreasonable based on the cost of utility debt.

There are other issues to address. First, in a statistical model the independent variable used in the "beta" regression is the simple difference between the market index selected and a particular utility company's rate of return. Therefore, an arithmetic difference, not a geometric difference is required for mathematical and statistical consistency to represent the average spread.

Second, Mr. Hill discusses unlevering estimated group "beta" estimates and

relevering them for the utility company in question when that utility has less debt. However, he does not include this calculation in his analysis.

Using a 50% debt for average utilities and 60% debt based on Mr. Hill's proposed 40% equity for PSE, we can estimate the effect of this process on the adjusted electric utility group beta, as:

$$\beta_U = .760/1+(.5*.65)$$

$$= .5736$$

and, β(PSE) for 60% debt becomes

$$\beta(PSE)= .5736 * ((1+(.6*.65))$$

$$= .797$$

Using the β(PSE) in Mr. Hill's CAPM with the average spread at 6.6% and a long-term yield at the 5.40% he states is the recent six-week average (see page 6 of Exhibit No. ___(SGH-5)) based on a July 23 to August 27, 2004 period, the following CAPM estimate of ROE would be determined:

$$ROE = 5.4\% + .797(6.6\%)$$

$$ROE = 5.4\% + 5.3\%$$

$$ROE = 10.7\%$$

This approximates PSE's currently authorized ROE before stock issuances expenses are added. Mr. Hill ignored important factors in arriving at 10.15% for the comparable historic average spread.

First, in this important portion of his testimony, Mr. Hill discussed but did not relever the Valueline beta, yielding incorrect results. Second, he reports (in footnote 3 at page 6 of his Exhibit No. ___(SGH-5)) a 5.4% long-term bond yield, but uses 5.15% in his analysis. Mr. Hill also reports, at page 11 of his direct testimony, that "Valueline projects that long-term Treasury Bond rates will average 5.3% in 2004 and 6% through 2005." Mr. Hill chose to ignore these projections. Although Mr. Hill calculated a CAPM using T-bills and both arithmetic and geometric means, he does not report those results at page 40 of his direct testimony, instead reporting only the CAPM range he calculated using the long-term Treasury Bond yield.

Q. Dr. Wilson's also performed a CAPM analysis. Have you an opinion of Dr. Wilson's CAPM analyses?

A. Yes. Dr. Wilson uses data and values in a biased and erroneous manner that produces a flawed result. Most startling, he uses a 1.7% T-Bill rate to represent the risk-free rate for a thirty year utility investment. His CAPM is as follows:

$$K = 1.7\% + .825(7.0) = 7.48\%$$

Dr. Wilson's single-digit result is similar to the 6.49% - 7.93% range calculated by Mr. Hill when he used a T-Bill rate for his risk-free rate. However, Mr. Hill recognized, at page 4 of his Exhibit No. ___(SGH-5), that the current T-Bill yield was too low to provide meaningful results when used in a CAPM analysis and chose to discard the results. Dr. Wilson chose not to take this path and not to follow Ibbotson's advice (and, in my opinion, normal regulatory practice) to use

the 30-year Treasury bond as the risk-free rate. Consequently, his cost of equity is barely above PSE's 6.91% cost of long-term debt as reported and used by Mr. Hill in his Exhibit No. ___(SGH-7), at page 4. Such a result is illogical and must be rejected.

Simply replacing the 90 day T-bill rate with the rate for a 30-year Treasury Bond, all else the remaining the same, would yield a revised ROE (or "K") of:

$$K(\text{revised}) = 5.5\% + .825(7.0) = 11.275\%$$

I conclude that Dr. Wilson's CAPM analysis is biased and erroneous. He estimates an ROE in the "7s" when his own data, used in an unbiased manner, would yield an ROE higher than currently authorized.

V. CRITIQUE OF MR. HILL'S QUANTIFICATION OF ROE

Q. At page 40 of his direct testimony, Mr. Hill shows the result of a modified earnings price ratio analysis (MEPR) that he used to corroborate his DCF and CAPM analyses. Please comment on this analysis.

A. Mr. Hill describes his MEPR analysis in Exhibit No. ___(SGH-15). In essence, Mr. Hill has averaged the results of two very different methods to develop his MEPR. However, I must reiterate that his entire analysis is suspect because his chosen sample group of utility companies does not represent a viable group of companies that have a comparable need to attract additional capital and that have a financial risk profile similar to that of PSE. Consequently, Mr. Hill's MEPR analysis is simply not relevant.

Mr. Hill, at page 8 of Exhibit No. ___(SGH-5), describes how he modifies his analysis by calculating what he calls the current and projected book equity returns for his sample group for 2004, and then again for the period 2007-2009, at 9.54% and 10.08%, respectively. Mr. Hill then takes the average of the earnings to price ratio (7.57%) and his two estimates of return on book value (9.54% and 10.08%) to derive what he describes as his MEPR range of 8.55% to 8.82%. In essence, Mr. Hill takes the midpoint of two very different analyses that contain serious basic flaws and calls this the average MEPR.

Q. What are the basic flaws in Mr. Hill's MEPR analysis?

A. Mr. Hill's analysis begins by calculating the P/E ratio by dividing the expected earnings per share for 2005 by the current market price. This results in an average MEPR for Mr. Hill's sample group of 7.57% and 7.74% for PSE These inverse price to earnings ratios do not include the Present Value of Growth (PVGR). Mr. Hill does not correctly address the missing variable.

Further, Mr. Hill's MEPR analysis ignores the fact that PSE is unlike the other utility companies in his sample. Mr. Hill conveniently ignores the fact that causes PSE to grow relative to his sample. PSE is not just increasing its book value return as it expands capital expenditures. Analysts would also expect PSE's future earnings to increase. If Mr. Hill considered this fact, his projected PVGR would exceed his projected change in return on book value (*i.e.*, embedded original cost less past depreciation), which he estimates as Projected ROE (2007-2009 on Exhibit No. ___(SGH-15)). Mr. Hill's sample underestimates this matter because his sample is not a reasonable representative sample for PSE since PSE is

growing much more significantly than the companies in Mr. Hill's sample.

This difference is no small quibble. The difference is at the heart of our fundamental disagreement. I conclude that PSE needs rate relief and an increase in ROE to finance significant capital expenditures. Mr. Hill looks at the past, as well as other utilities where the realities facing PSE currently and in the future do not apply. Both Mr. Hill and Dr. Wilson underestimate both PSE's required ROE and the increased equity share of ROR.

VI. RESPONSE TO THE CRITIQUE OF MY ROE ANALYSES

Q. Beginning on page 48 of his direct testimony, Mr. Hill criticizes your DCF approach using growth in stock price as being unorthodox, inconsistent with your past testimony, and extremely variable. Please respond to Mr. Hill's criticism.

A. Mr. Hill and Dr. Wilson ignored the fact that the utility industry has changed and differences across states are increasingly important. The DCF analysis depends upon "g" or "growth" measures. The differences between dividends, EPS, cash flow, and other growth measures are sometimes unimportant in a DCF analysis. When such growth measures are very different, as they are now for utilities such as PSE that has cut its dividend significantly, it is not reasonable or sensible to ignore such differences in growth rate estimates by arbitrarily assuming they are equivalent.

A number of states and jurisdictions are restructuring. In other states, such as

Washington, traditional regulatory approaches are being maintained and companies like PSE need to invest large amounts of capital to serve customers. Locking oneself into a growth measure through assumptions, as do Mr. Hill and Dr. Wilson, produces unreasonably low ROE estimates for a company in PSE's situation and does not make sense. Using a new *"g"* based on other utilities without adjusting for differences from PSE also does not fix the problem.

Growth measures that are more applicable to PSE's situation should be used. The fact that I used a different growth measure at a point some 6 ½ years ago in Kansas for a company that owned more non-electric assets and derived more of its income outside of Kansas is simply irrelevant given today's vastly different circumstances. Mr. Hill's criticisms are unfounded and irrelevant.

Q. Mr. Hill criticizes your use of share price growth as the growth parameter of your DCF analysis. Please respond to Mr. Hill's criticism.

A. Mr. Hill's criticism of my use of share price growth in my DCF analysis is unfounded. This is misleading and disingenuous because he states at page 30 of his direct testimony, as does Dr. Wilson, that DCF analyses typically assume that earnings, dividends, and prices grow at a constant and similar rate.

We know that this is not normally going to happen. Some businesses that grow earnings rapidly, eschew dividends entirely and grow share prices. This has been the hallmark of firms such as Microsoft. Other firms, such as PSE, have been forced to cut dividends to retain earnings, finance growth, and reduce indebtedness.

Under this situation, dividend growth rate calculations show no dividend growth for a utility, such as PSE. They would, in fact, show negative dividend growth. However, such a firm's P/E ratio should increase, not because it was over-earning, but because it was expected to grow PVGR. Thus, its share prices would increase. So would its relative MBR. None of this is unexpected or adverse. These are good results for shareholders and customers. The problem is that it is a result that is completely at odds with the assumptions that Mr. Hill and Dr. Wilson build into their flawed DCF analyses. It is not reasonable to ignore these facts.

It is critical to recognize PSE's reality and facts. First, dividends are down because PSE is using retained earnings (*i.e.*, equity) and internal cash flow to finance growth. Second, prices are up as investors observe utility plant additions and expect a just and reasonable regulatory outcome in this proceeding. Third, I urge the Commission to eschew assumptions that don't apply and to recognize that while PSE's dividend yield is down, and dividend growth is negative, that PSE's cost of equity has not declined since the last rate case. Consequently, share price increases for PSE and its new lower yield are the most appropriate factors to use in establishing PSE's current ROE.

Q. Mr. Hill also, at page 49 of his direct testimony, criticizes you for using a CAPM analysis in this proceeding when you did not use one in the Western Resources proceeding in 1996. How do you respond?

A. I use the CAPM as a check on my primary analysis, which uses a DCF analysis. Similarly, I use the risk premium analysis as a check on the DCF analysis. The

Western Resources proceeding was a long, drawn-out hearing, and there had been ROE proceedings that predated that hearing where the CAPM analysis had become extremely controversial. Rather than distracting the Commission from a very strong DCF analysis, I chose to avoid the controversy by not including a CAPM analysis. Here, I offer the CAPM analysis, as does Mr. Hill, as a check to my primary DCF analysis.

Q. On pages 49 through 50, Mr. Hill produces Table 1 where he purports to recreate your DCF analysis. Please comment on Mr. Hill's analysis.

A. Mr. Hill asserts that while the average ROE produced by my analysis is 15.5%, the standard deviation (20.72%) is greater than the average. This, he contends, produces a result that Puget's ROE, with a 95% confidence lies between -25.95% and +50.95%. Thus, he concludes that the "extreme variability" of my analysis does not produce reliable information for this Commission. I do not deny the existence of market volatility and uncertainty. This is a primary reason why now is perhaps the worst time to reduce PSE's authorized ROE, as both Mr. Hill and Dr. Wilson propose to do here. Higher risk means that PSE should reduce its debt share, as I support, and be granted a higher, not lower, ROE.

Q. Dr. Wilson has also restated your DCF table for PSE. Please comment on his efforts?

A. Dr. Wilson's restated table suffers from the same flaws as did a similar table produced by Mr. Hill. The results shown in Dr. Wilson's revised table are misleading because PSE had negative growth in its stock price for the months of

May, June, and July following the Commission's disallowance of $43.3 million of expenses. This amounted to a reduction in earnings per share of $0.28 per share after taxes. The market responded predictably to this negative news and PSE's stock price demonstrated negative growth. In the last month, the stock price has begun to rebound and is again showing positive growth. If the three months where PSE's stock price was negatively affected by this disallowance are excluded from the analysis, the ROE expected by PSE investors would be 11.6% for the updated period, not much different than my proposal for an 11.75% ROE.

As I stated before, stock prices often track a relatively consistent P/E ratio in the short term. Assuming a constant P/E ratio, a 28¢ per share drop in earnings per share (EPS) would cause prices to fall $5.07, or nearly 23.96%. Accordingly, I conclude that, but for this regulatory "bump in the road," investors' expectations for PSE's ROE remain close to the 12% I discussed in my prefiled direct testimony.

Q. In your direct testimony, the DCF analysis for PSE for the period March 2003 through March 2004 produced 12.2%. What does Mr. Hill's analysis of a lower (8.6%) DCF using more recent monthly share prices mean?

A. PSE had negative growth in its stock price for the months of May, June, and July following the Commission's disallowance of $43.3 million of expenses. This amounted to a reduction in earnings per share of $0.28 per share after taxes. The market responded predictably to this negative news and PSE's stock price demonstrated negative growth. Since August 2004, PSE's stock price has begun to rebound and is again showing positive growth. If the three months where

PSE's stock price was negatively affected by this disallowance are excluded from the analysis, the ROE expected by PSE investors would be 11.6% for the updated period.

Stock prices often track a relatively consistent P/E ratio in the short term. A 28¢ per share drop in earnings per share (EPS) would cause prices to fall. Valueline shows that PSE's average annual P/E ratio in 2003 was 18.1. A 28¢ decrease in EPS cause a decline in price per share of $5.07, or nearly 25%, assuming a constant P/E ratio. Accordingly, I conclude that but for this regulatory "bump in the road" investors' expectations for PSE's ROE remain close to the 12% I discussed in my prefiled direct testimony.

Q. At page 52, Mr. Hill produces Table 2, which he claims proves that your DCF methodology is too variable. How do you respond?

A. Mr. Hill simply is unaware of, or ignores, the negative regulatory disallowance that had a unique one time effect on PSE's stock price in May, June, and July. Mr. Hill seems to blindly follow such numbers without giving sufficient weight and thought to what is driving those numbers. The most recent price data is anomalous. Further, there is regulatory risk. There are likely lingering negative price effects from the regulatory disallowance and new regulatory uncertainty given Mr. Hill's and Dr. Wilson's proposals to slash PSE's authorized ROE and to not address the built-in earnings drag I discussed in my direct testimony.

In response to Mr. Hill's critique, I have revised Table 6 from my direct testimony and present it here. I again define the ROE 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) provide electricity and natural gas services.

TABLE 6 (Revised)
DCF Analysis for Comparable Utilities (Q2 2004)

COMPANY	YEAR	QUARTER	BIG	NO RESTRUCTURING	GAS	K_STK
Black Hills	2004	2	0	1	0	6.4%
Hawaiian Electric	2004	2	0	1	0	17.7%
IDACORP	2004	2	0	1	0	7.9%
ALLETE	2004	2	0	1	0	26.0%
Cleco	2004	2	0	1	0	8.7%
Empire District	2004	2	0	1	0	-1.5%
Great Plains Energy	2004	2	0	1	0	8.4%
OGE Energy	2004	2	0	1	0	22.7%
Otter Tail	2004	2	0	1	0	3.6%
Central Vermont	2004	2	0	1	0	9.0%
Green Mountain Power	2004	2	0	1	0	29.5%
UIL Holdings Corp	2004	2	0	1	0	24.2%
Avista	2004	2	0	1	1	28.9%
MDU Resources Group	2004	2	0	1	1	-30.1%
PNM Resources	2004	2	0	1	1	18.1%
Puget Energy	2004	2	0	1	1	-4.0%
Sierra Pacific	2004	2	0	1	1	25.9%
Alliant Energy	2004	2	0	1	1	35.1%
Aquila	2004	2	0	1	1	31.9%
MGE Energy	2004	2	0	1	1	8.1%
WPS Resources	2004	2	0	1	1	18.9%
Wisconsin Energy	2004	2	0	1	1	14.2%
SCANA	2004	2	0	1	1	9.7%
TECO Energy	2004	2	0	1	1	6.5%
				Avg of k_stk not big and no restructuring gas combo:		13.6%

The average ROE determined in the second quarter of 2004 for this comparison group is 13.6%, not the 7.56% to 9.25% Mr. Hill reports.

Q. At pages 52-53, Mr. Hill purports to use the DCF methodology you used in 1996 for Western Resources. In doing so, he calculates an average ROE of 7.56%. Please comment.

A. The 7.56% ROE produced by this DCF methodology should provide abundant evidence to Mr. Hill that using the wrong or irrelevant growth estimates produce

unreasonable results. If Mr. Hill calculated the ROE for just the combination gas and electric companies, his ROE would have dropped even further, to 7.16%, which is *de facto* unjust and unreasonable given current long-term debt rates. Instead, Mr. Hill should have recreated my analysis for the combination gas and electric companies for which I derived the 15.5% ROE. He would also have excluded those utilities where Valueline reported no meaningful figure (nmf) or negative earnings growth. Had he done so, Mr. Hill would have a calculated an ROE of 10.07%, which is still too low, but at least approaches the value that PSE requires, particularly if it: (1) is to finance significant capital additions, and (2) must continue to contend with built-in regulatory earnings drag. Thus, I conclude that my previous methodology using Valueline growth, when correctly, would produce similar, although somewhat lower, ROEs in comparison to the ones I recommend here. Regardless, Mr. Hill's errs by more than 250 basis points.

Q. At pages 54-57, Mr. Hill criticizes you for using one particular period for the Dow Jones Industrial Average (DJIA) as the market risk in your CAPM analysis. Please respond to Mr. Hill's criticism.

A. Mr. Hill's criticism seems to be based primarily on the fact that the recent stock market returns for the period I used in my CAPM analysis (1993-2003) are higher than the 77-year returns he would prefer to use. Mr. Hill's misses the point that investors are forward looking and that PSE must compete in today's market for capital. A 77-year average is simply not a relevant measure of current market risk as measured by return. The fact that a more recent market risk premium of 12.91%, is higher than that calculated using the 77 year average reported by

Ibbotson and touted by Mr. Hill is true, but not a valid criticism of using the higher return that investors would likely consider. Further, in calculating his 6.60% risk premium, Mr. Hill simply subtracted Ibbotson's arithmetic mean for total returns of large company stocks (as reported by Ibbotson) over the past 77 years (12.4%) from the arithmetic mean of Long-Term Government Bonds over the same 77-year period (5.8%). None of these market comparisons is particularly relevant to investors seeking to achieve a return on their investment for PSE in today's market.

Q. At page 58-60, Mr. Hill criticizes your risk premium analysis because it relies on the S&P 500 rather than what he deems "less risky" utilities. Please respond to his criticism.

A. The thrust of Mr. Hill's criticism is that the 12% ROE developed by my risk premium analysis represents the risk faced by a non-regulated S&P 500 company, and overstates the risk faced by a regulated utility. Dr. Hill goes through an exercise where he attempts to reduce the 7.25% risk premium I developed in my direct testimony by multiplying it by .62, the beta I calculated for PSE. Mr. Hill's attempt to adjust the risk premium in this manner is misguided because no such adjustment is required given the conservative nature of the risk premium developed by Harris and Marston. Here, Mr. Hill has arbitrarily selected numbers that have the effect of cutting PSE's authorized ROE to 9.75%, while holding PSE's equity share at 40%, well below the projected 45% equity value.

Q. Do you agree with Mr. Hill's rejection of your use of risk premium as a check on your authorized ROE recommendations?

A. No. Utility stocks are sold and traded in a broad stock market. Stocks need a premium relative to corporate bonds in the same company. Corporate bonds require a risk premium relative to Federal long-term bonds because the U.S. government can raise taxes, if necessary, to guarantee its debt.

In the end, Mr. Hill at page 8 of his direct testimony implies that he would not use the risk premium method as a primary or independent methodology to use in a cost of equity analysis. If this is what he means, we are not very far apart. Current long-term federal bonds are in the mid-5% range, and a spread for corporate equity over such long-term bond rates of at least 6% is typical.

For added earnings drag, a low equity share, and current Federal Reserve policy, I would easily put this together and expect about a 12% ROE for PSE. Mr. Hill is more cautious and comes in below 10%. I disagree. The primary reason is that Mr. Hill significantly understates the equity premium, as I explained.

Q. At page 54 of his direct testimony, Mr. Hill makes criticizes your beta calculation, implying that investors would rely instead on the beta calculated by Valueline. How do you respond to Mr. Hill?

A. Previously, I explained in detail why it is necessary and desirable to calculate a beta rather than relying on Valueline's published beta. Further, Mr. Hill agrees that my calculated beta is "not much different" from the published betas which he prefers. Nevertheless, in order to provide the Commission with the most current information and in an attempt to address Mr. Hill's concerns, I have redetermined the beta for PSE using the most recent three year period, again using quarterly

data. The following updated regression equation measures beta for PSE over this three-year period.

$$(ROE\ [PSE]\text{-}R_F = .61660\ (ROE\ [DJIA]\text{-}R_F$$

$$R^2 = .28$$

This beta (.61660) is only slightly different than the beta I calculated previously (.62807).

Q. At page 54 of his direct testimony, Mr. Hill criticizes you for using a long-term bond to proxy the risk free rate. Please respond to his criticism.

A. I note that although Mr. Hill shows calculations using a short-term T-bill rate and a long-term Treasury bond rate in Exhibit No. ____(SGH-13), he only reports (at page 40 of his direct testimony) his results for the analysis using the long-term bond rate. Further, as I noted earlier in this rebuttal testimony, Mr. Hill used a 5.15% risk free rate. Since the time I filed my direct testimony, the long-term T-bond rate has changed slightly. When I filed my Direct Testimony, I used a 30-year long-term Treasury Bond yield rate of 4.89%. As of October 1, 2004, the yield on a 30-year long-tem Treasury Bond was 4.94%, and it has been higher. Indeed Mr. Hill uses a 5.15% rate for this bond.

Q. Mr. Hill, at pages 48-54 of his direct testimony, criticizes the growth factor you used because it was too volatile. Please respond to Mr. Hill's criticism.

A. Earlier in this rebuttal testimony, I discussed the differences between myself and Mr. Hill and Dr. Wilson with respect to growth rates. I won't revisit that

discussion here. However, to respond to Mr. Hill's comments with respect to volatility, I note that when I filed my direct testimony, the DJIA of 30 large companies had increased 37.97% over the period March 2003 to March 2004. The Dow Jones utility average had increased by about 38.93% over the same period. Utilizing a 12-month change in price for the period June 2003 through June 2004, the DJIA increased 16.14% and the Dow Jones Utility Index increased 10.72%. Expanding the analysis to an 18-month period from December 2002 through June 2004 shows an 18-month change in price for the DJIA of 25.10% and 29.14% for the Dow Jones Utility Index.

In my direct testimony, I recognized that 2003 had been an exceptionally good year for the stock market. Consequently, I took the average of the ten year period from 1993 to 2003 (17.8%) as the growth factor to use in my CAPM. The updates that I described above do not change my opinion as to the efficacy of my using the 10 year average as my growth rate.

Q. In responding to Dr. Hill's criticisms, how does using your updated beta and the updated long-term Treasury bond yield affect your CAPM analysis?

A. Using the 17.8% growth rate I described above, I recalculate the CAPM for PSE as follows:

ROE (PSE) = 4.94% + .61660(17.8-4.94)

ROE(PSE) = 12.87%

While the updated CAPM analysis produced an ROE that was slightly lower than the CAPM originally produced (12.87% versus 12.998%), the estimated ROE

supports my recommended ROE for PSE between 11.75% and 12.5%, depending upon the earnings erosion relief provided by the Commission.

Q. Mr. Hill, at pages 22-24 of his direct testimony, disagreed with you with respect to PSE's bond ratings and the effect that increasing PSE's ROE would have. Please respond to his criticisms.

A. Earlier in this rebuttal testimony, I discussed at length the differences I have with Mr. Hill with respect to bond ratings. In response to Mr. Hill, I updated Exhibit No. ___(CJC-3), which is the current Standard and Poor's Credit Ratings for Utilities. The Exhibit I filed with my direct testimony was current through March 2004. The updated debt ratings through September 2004 shows the number of companies with a BBB- rating (like PSE) remained the same at 15. However there is one additional company with a credit rating better than PSE, which increases the percentage of utility companies with a better credit rating than PSE from 73.8% to 74.8%. Similarly, there is one fewer utility company with a credit rating lower than PSE (12 versus 13 in the original Exhibit No. ___(CJC-3)). This shows that, notwithstanding Mr. Hill's contentions, PSE's relative position is worsening.

Q. Mr. Hill also takes issue with your opinion that the Commission should consider what other state commissions, particularly those located in traditional cost-of-service, non-restructuring states, are authorizing with respect to ROEs. Please respond to his criticism.

A. A fatal flaw in Mr. Wilson's and Mr. Hill's analyses is that they are both wedded

to their analyses and ignore facts relevant and unique to PSE. In so doing, both Mr. Hill and Dr. Wilson ignore or give inadequate weight to these differences between state commissions in states that are dissimilar to Washington in their regulatory approach to restructuring. To respond to Mr. Hill and Dr. Wilson, I need to revisit my direct testimony. There I presented a series of four tables that showed recent ROE decisions. The first table I presented (Table 1) showed recent Performance Based Regulation (PBR) ROE decisions in several traditional regulatory regime states. That table has not changed and I reproduce it here. I still find this table to have significant value for this Commission in setting PSE's ROE in a traditional, fully-regulated jurisdiction.

TABLE 1 FROM DIRECT TESTIMONY
PBR POST-2001

Company	State	Operation Subj to PBR	Rate Adj Provisions and Incentives	ROE Target	Restructuring
Alabama Power	Alabama	Electric	Rate Stablization	13.75%	No
Georgia Power	Georgia	Electric		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	**12.54%**	

Next, I show a revised Table 2, which I have modified since I filed my direct testimony. Again, Table 2 combines the PBR cases post-2001 with the average authorized ROE awarded in rate cases since 2003 for states that have maintained a traditional regulatory environment, like that in Washington.

TABLE 2 FROM DIRECT TESTIMONY
Revised
PBR Post 2001 and/or
Rate Case Since 2003

COMPANY	STATE	SERVICE	NEW ROE
Alabama Power	Alabama	Electric	13.75
Aquila	Colorado	Electric	10.75
Public Service of Colorado	Colorado	Electric	10.75
Public Service of Colorado	Colorado	Gas	11.00
City Gas	Florida	Gas	11.25
TECO Peoples Gas	Florida	Gas	11.25
Georgia Power	Georgia	Electric	12.95
Idaho Power	Idaho	Electric	10.25
Southern Indiana G&E	Indiana	Gas	10.50
Public Service Indiana	Indiana	Electric	10.50
Vectren Energy Delivery	Indiana	Gas	10.50
Mid American	Iowa	Electric	12.00
Aquila	Iowa	Gas	Settled
Interstate Power & Light	Iowa	Electric	11.15
Interstate Power & Light	Iowa	Gas	11.05
Midwest Energy	Kansas	Gas	11.66
Kentucky Power	Kentucky	Electric	11.00
Louisville Gas & Electric	Kentucky	Electric	10.50
Kentucky Utilities	Kentucky	Electric	10.50
Centerpoint ARKLA	Louisiana	Gas	10.25
CLECO	Louisiana	Electric	12.25
ENTERGY New Orleans	Louisiana	Electric	11.25
ENTERGY New Orleans	Louisiana	Gas	11.25
ENTERGY Gulf States	Louisiana	Electric	11.10
People's Natural Gas	Minnesota	Gas	11.71
Interstate Power & Light	Minnesota	Gas	11.00
Interstate Power & Light	Minnesota	Electric	11.25
Missouri Gas Energy	Missouri	Gas	10.50
North Carolina Gas	North Carolina	Gas	11.00
Montana Dakota Utilities	North Dakota	Electric	10.02
Northern States	N. Dakota	Electric	12.00
Otter Tail	N. Dakota	Electric	12.00
South Carolina Electric	S. Carolina	Electric	12.45
Chatanooga Gas Co	Tennessee	Gas	10.20
PacifiCorp	Utah	Electric	10.70
Green Mountain Power	Vermont	Electric	10.50
Central Vermont Public Service	Vermont	Electric	10.25
Madison Gas & Electric	Wisconsin	Electric	12.00
Madison Gas & ELectric	Wisconsin	Gas	12.00
Wisconsin Public Service	Wisconsin	Electric	12.00
Wisconsin Public Service	Wisconsin	Gas	12.00
Wisconsin Power & Light	Wisconsin	Gas	12.00
Wisconsin Power & Light	Wisconsin	Electric	12.00
PacifiCorp	Wyoming	Electric	10.75
Gaz Metro	Quebec (Canada)	Gas	11.64
	Average ROE Total	**10.99**	
	Average ROE Electric	**10.87**	
	Average ROE Gas	**11.15**	

The average ROE (combined for electric and gas rate cases) is 10.99%. The average electric ROE is slightly lower that the average, at 10.87%, and the

average gas ROE is slightly higher, at 11.15%. These ROE averages are slightly lower than when I presented this information in April of this year, but are still consistent with the ROE requested by PSE in this case. Significantly, the ROEs for benchmark states like Wisconsin (12.0%), Georgia (12.95%), and South Carolina (12.45%) are still most relevant to indicate what regulators around the country think is required in order to attract capital to support significant new investments, such as the ones PSE is undertaking on behalf of both the electric and gas customers.

Q. Why do you recommend an 11.75% ROE if the average in Table 2 (Revised) is 10.99%?

A. There are two reasons why PSE needs a higher than average ROE. First, PSE needs to continue to expand capital expenditures. For instance, PSE faces large and growing capital needs to support its extensive resource acquisition program. Second, PSE has a relatively thin equity share compared to other regulated utilities. In fact, Mr. Gaines shows that average equity share nation-wide is nearly 49.7%, while PSE has been financing its capital expenditures in the low 40% range, and here seeks a 45% share. The lower equity share requires a higher ROE to reflect the added risk of more debt in PSE's capital structure.

A utility that has an 11% ROE and 50% equity would be approximately equivalent to a utility with an 11.54% ROE and 40% equity. Similarly, an 11.25% ROE from Table 2 would be equivalent to a utility with an 11.80% ROE and 40% equity. Therefore, an 11.75% ROE, with a 45% equity share, is appropriate (and consistent with the results from Table 2) for PSE as it seeks to

support capital investment.

Q. Has your conclusion changed as a result of this updated analysis?

A. No. My conclusion that this Commission should focus on the ROEs that Commissions around the country in similar regulatory regimes have authorized remains unchanged. This means that I continue to recommend an 11.75% ROE for PSE, assuming attrition is addressed. I also recommend using a 45% share for equity in this rate case.

VII. CONCLUSION

Q. Please summarize your conclusions.

A. PSE's rate of return should be increased, not lowered. Mr. Hill and Dr. Wilson disagree. They would deeply cut PSE's rate of return, while failing to recognize PSE's financial condition, need for improved credit rating, and need to expand its investments in necessary infrastructure. As Mr. Reynolds testifies, PSE's investment needs are driven by its carefully-considered and comprehensive strategy to serve customers reliably and at low cost, while protecting such customers from volatile energy markets.

If Mr. Hill's and Dr. Wilson's advice is followed, I would be surprised if customers would benefit because, for example, either the costs of these necessary delivery infrastructure and generation resource investments would increase for decades to come, such investments would need to be deferred, or both.

The Company needs to invest significant amounts of self-generated and outside funds to meet the needs of new and existing customers. The Company should receive its requested modest rate increase of about 5.7% for electricity users and 6.3% for natural gas users. This is a just and reasonable solution and would support the significant new investments the Company has outlined to meet its customers' needs.

Q. Does that conclude your testimony?

A. Yes.

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