BEFORE THE WASHINGTON UTILITIES & TRANSPORTATION COMMISSION

Complainant,

v.

PUGET SOUND ENERGY, INC.

Respondent.

DOCKET NOS. UE-090704 AND UG-090705

DIRECT TESTIMONY OF GLENN A. WATKINS (GAW-1T)

ON BEHALF OF

PUBLIC COUNSEL

November 17, 2009

DIRECT TESTIMONY OF GLENN A. WATKINS (GAW-1T)
DOCKET NOS. UE-090704 AND UG-090705

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DIRECT TESTIMONY OF GLENN A. WATKINS (GAW-1T)
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**EXHIBITS OF GLENN A. WATKINS (GAW-1T)**

| | |
|---|---|
| Exhibit No. GAW-2 | Education and Employment History |
| Exhibit No. GAW-3 | Puget Sound Energy<br>Electric Cost of Service Summary (Income Taxes Calculated) |
| Exhibit No. GAW-4 | Puget Sound Energy<br>Electric Residential Customer Costs<br>(Cost of Equity @ PSE Proposed) |
| Exhibit No. GAW-5 | Puget Sound Energy<br>Natural Gas Residential Customer Costs<br>(Cost of Equity @ PSE Proposed) |

# I. INTRODUCTION

**Q: Please state your name and business address.**

A: My name is Glenn A. Watkins. My business address is James Center III, 1051 East Cary Street, Suite 601, Richmond, VA 23219.

**Q: By whom are you employed and in what capacity?**

A: I am a Principal and Senior Economist with Technical Associates, Inc., which is an economics and financial consulting firm with offices in Richmond, Virginia.

**Q: On whose behalf are you testifying?**

A: I am testifying on behalf of the Public Counsel Section of the Washington Attorney General's Office (Public Counsel).

**Q: Please describe your professional qualifications.**

A: Except for a six month period during 1987 in which I was employed by Old Dominion Electric Cooperative as its forecasting and rate economist, I have been employed by Technical Associates continuously since 1980.

During my career at Technical Associates, I have conducted marginal and embedded cost of service, rate design, cost of capital, and load forecasting studies involving numerous electric, gas, water/wastewater, and telephone utilities, and have provided expert testimony in Alabama, Arizona, Georgia, Kansas, Kentucky, Maine, Maryland, Massachusetts, Michigan, New Jersey, North Carolina, Illinois, Pennsylvania, Vermont, Virginia, South Carolina, Washington, and West Virginia. I hold an M.B.A and B.S. in economics from Virginia Commonwealth University. I am a member of several professional organizations as well as a Certified Rate of Return Analyst. A more complete description of my education and experience is provided in Exhibit No. GAW-2.

**Q: What is your regulatory experience before the Washington UTC?**

A: In addition to representing Public Counsel in PSE's last general rate case I have also represented Public Counsel in the last two PacifiCorp rate cases as well as this year's Avista general rate case.

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

A: Technical Associates has been retained by Public Counsel to evaluate the accuracy and reasonableness of Puget Sound Energy's ("PSE" or "Company") electric and natural gas class cost of service studies (CCOSS), proposed distribution of revenues by class, and residential rate designs. The purpose of my testimony, therefore, is to comment on PSE's proposals on these issues and to present my findings and recommendations based on the results of the studies I have undertaken on behalf of the Public Counsel.

**Q: Please explain how your direct testimony is structured.**

A: I have separated my direct testimony into three sections: Electric Operations; Natural Gas Operations; and PSE Supplemental Filing. For each operational section, I have three subsections entitled: Class Cost of Service; Class Revenue Distribution; and, Residential Rate Design. My testimony concerning the first two sections (Electric Operations and Natural Gas Operations) is based on the Company's initial filing dated May 8, 2009, for electric operations and its supplemental filing dated August 3, 2009, for the Natural Gas Operations. I discuss the rate design implications of PSE's September 28, 2009, supplemental filing separately in the last section of my testimony.

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1 **II. ELECTRIC OPERATIONS**

2 **A. ELECTRIC COST OF SERVICE**

3 **Q: Please explain the concept of a class cost of service study (CCOSS).**

4 A: There are two general types of cost of service studies used for public utility ratemaking:
5 marginal cost studies and embedded, fully allocated cost studies. PSE has utilized a
6 traditional embedded cost of service concept in this case for purposes of establishing its
7 overall retail revenue requirement, as well as for its CCOSS.

8 Embedded cost of service studies are often referred to as fully allocated cost
9 studies. This is because the vast majority of a public utility's plant investment serves all
10 customers, and the majority of expenses are incurred in a joint manner such that these
11 costs cannot be specifically attributed to any individual customer or group of customers.
12 To the extent that certain costs can be specifically attributed to a particular customer (or
13 group of customers), these costs are directly assigned in a CCOSS. However, the vast
14 majority of PSE's Production, Transmission, and Distribution plant and expenses are
15 incurred jointly to serve all (or most) customers. These joint costs are then allocated to
16 rate classes.

17 It is generally recognized that to the extent possible, joint costs should be
18 allocated to classes based on the concept of cost causation; i.e., costs are allocated based
19 on specific factors that cause costs to be incurred by the utility. Although cost analysts
20 generally strive to abide by the concept of cost causation to the greatest extent practical,
21 some costs (particularly overhead costs), cannot be attributed to specific exogenous
22 factors and must be subjectively assigned or allocated to rate classes. With regards to
23 those costs that can be attributed to a specific factor, cost of service experts often disagree

as to what is the most cost causative factor; e.g., peak demand, energy usage, number of customers, etc.

**Q: How should CCOSS results be used in the ratemaking process?**

A: Although there are certain principles used by all cost of service analysts, there are often significant disagreements on the specific factors that drive costs. These disagreements can and do arise as a result of the quality of data and the level of detail available from financial records. Moreover, there are often fundamental differences in opinions regarding cost causation factors that should be considered to properly allocate costs to rate schedules or customer classes. Additionally, and as mentioned earlier, cost causation factors cannot be realistically ascribed to some costs such that subjective decisions are required.

In these regards, two different cost studies conducted for the same utility and time period can, and often do, yield different results. As such, regulators should consider CCOSS results as one of many tools in assigning revenue responsibility.

**Q: Please explain how you proceeded with your analysis of PSE's electric CCOSS.**

A: As indicated by witness David Hoff, the Company's electric CCOSS conducted for this case is based on the same methodology and model used in PSE's last general rate case (Docket No. UE-072300). As such, the CCOSS sponsored by Mr. Hoff in this case largely represents an update to last year's study. Docket No. UE-072300 was my first case involving PSE and I conducted a rigorous examination of all aspects of PSE's CCOSS. That examination enabled me to gain a thorough understanding of the structure and organization of PSE's model, as well as the assumptions and methods used to classify and allocate Production, Transmission, Distribution and General/Administrative

costs. Building upon my understanding of PSE's electric CCOSS model, I verified the accuracy and consistency of PSE's study filed in this case with that conducted in Docket No. UE-072300. I found that the current study is indeed an update with minor modifications to the study presented by Mr. Hoff in last year's general rate case.

**Q: Please summarize your agreements and disagreements with the CCOSS sponsored by PSE witness Hoff.**

A: With the exception of one issue, I found Mr. Hoff's current CCOSS to reasonably reflect cost causation. This disagreement relates to Mr. Hoff's assignment of income tax expenses to individual classes which results in a mathematical error in his calculated class revenue requirements and attendant parity ratios. Although my disagreement with PSE's treatment of class income tax responsibility is relatively small in this case, I believe it is important that PSE's error be corrected going forward as it can have a significant impact on class revenue responsibility.

As in PSE's last rate case, I continue to have a minor difference in opinion with Mr. Hoff's classification of Production and Transmission plant. However, as a result of PSE's updates in the current study, in large part, PSE's methods, approaches, and results cannot be deemed unreasonable. As such, but for the treatment of income taxes, I have accepted all other aspects of Mr. Hoff's electric CCOSS. In this regard, it should be noted that Mr. Hoff did incorporate certain changes (other than updates) to this year's CCOSS that were recommended by other experts in Docket No. UE-072300. I also concur with these changes.

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1 **Q: What is the effect of PSE's improper allocation of class income taxes?**

2 A: First, it is most important to understand that with the rare exception, it is perfectly
3 acceptable to allocate income taxes on the basis of rate base if the exercise is to determine
4 class tax responsibilities at equal, and required rates of return; i.e., full cost of service.[1]
5 However, PSE has not determined class tax responsibility at full cost of service and as I
6 will explain, PSE's allocation of taxes at current rates results in an error in its
7 determination of each class's "full" cost of service (revenue requirement). PSE's
8 approach tends to overstate the tax expense at current rates (understate profitability) for
9 classes earning below the system average rate of return and understate the tax expenses
10 (overstate profitability) for those classes earning above the system-wide rate of return.
11 As such, PSE's inappropriate tax assignment tends to portray a wider disparity in class
12 rates of return than actually exists.

13 **Q: Please explain how and why PSE's allocation of income taxes at current rates then**
14 **results in an error in the determination of class revenue requirements and attendant**
15 **parity ratios.**

16 A: This error is a result of the approach PSE uses to determine class revenue requirements.
17 The following is PSE's approach to determine class revenue requirements:

18 (1) Revenues, less
19 (2) O&M Expenses, less,
20 (3) Depreciation Expenses, less
21 (4) Taxes Other Than Income, equals
22 (5) Before Tax Operating Income, less
23 (6) Allocated Income Taxes, equals

[1] This is because required net income (after tax) is a direct and linear function of rate base.

1 It is well understood that income tax expense is based on before tax profits.
2 However, Mr. Hoff's CCOSS analysis at current rates ignores this concept and allocates
3 PSE's total electric income taxes to customer classes based on allocated rate base
4 (investment). In other words, Mr. Hoff's CCOSS analysis at current rates assigns income
5 tax expense based on the level of plant investment rather than profit contributions by
6 customer class. Mr. Hoff's determination of each class's income tax responsibility at
7 current rates, therefore, has nothing to do with the reality of this expenses' cost causation
8 (revenues minus expenses), but rather is based solely on investment. Mr. Hoff's
9 approach assigns the same level of income tax responsibility to individual classes
10 regardless of each class's revenues and expenses.
11 This allocation, or assignment, of total Company income taxes based on rate base
12 investment has the potential to significantly distort individual class profitability at current
13 rates and provide inaccurate information as to the adequacy, or inadequacy, of current
14 rates.
15 **Q: Are income taxes normally calculated or allocated for other types of financial or**
16 **profitability analysis?**
17 A: It is universally agreed that when the objective is to evaluate profitability, whether it be
18 for a firm, a specific business unit, or single project, income tax expenses are based on
19 the difference between revenue and deductible expenses. Indeed, for purposes of its
20 requested increases in overall electric and natural gas revenues in this case, PSE
21 calculates each operations' (electric and gas) tax responsibility based on their respective
22 revenues and expenses, and does not assign overall corporate taxes based on an allocation
23 of investment (rate base).

**Table 2**
**Hypothetical Example**
**PSE's Improper Determination of Class Revenue Requirements**

| | Class A | Class B | Total Company |
|---|---|---|---|
| (1) Rate Base | $1,000 | $1,000 | $2,000 |
| (2) Revenues at Current Rates | $800 | $1,000 | $1,800 |
| (3) Expenses (O&M, Deprec., etc.) | $800 | $800 | $1,600 |
| (4) Income Tax a/ | $30 | $30 | $60 |
| (5) Operating Income | -$30 | $170 | $140 |
| (6) Income Requirement b/ | $80 | $80 | $160 |
| (7) Income Deficiency (Excess) (6) - (5) | $110 | -$90 | $20 |
| (8) Revenue Conversion Factor c/ | 0.6 | 0.6 | 0.6 |
| (9) Revenue Deficiency (Excess) (7)/(8) | $183.33 | -$150 | $33.33 |
| (10) Revenue Requirement: (2) + (9) | $983.33 | $850 | $1,833.33 |
| (11) Parity Ratio: (2)/(10) | 81% | 118% | 98% |

a/ Allocated on rate base.
b/ Assumed 50/50 capital structure, 5% cost of debt and 11% cost of equity.
c/ Assumed tax rate of 40% with no gross receipts taxes or uncollectible expense.

As can be seen above, even though the two classes are identical in terms of investment (rate base) and costs, the approach utilized by PSE results in a revenue requirement of $983.33 for Class A and $850.00 for Class B. As a result of this error, the "required" increase for Class A is overstated, while Class B's required increase is understated. This error [from Row (7)] also flows through to the parity ratio such that the class ratio for Class A is understated while that for Class B is overstated.

The error in the approach is evident with a simple check that demonstrates and quantifies the overstatement of Class A's revenue requirement and the understatement of Class B as shown below:

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**Table 3**
**Hypothetical Example**
**Quantification of Error Under PSE's Approach**
**(Income Taxes Calculated)**

| | Class A | Class B | Total |
|---|---|---|---|
| (1) Revenue at Cost of Service | $983.33 | $850 | $1,833.33 |
| (2) Expenses | $800 | $800 | $1,600 |
| (3) Interest Expense a/ | $25 | $25 | $50 |
| (4) Taxable Income: (1) - (2) - (3) | $158.33 | $25 | $183.33 |
| (5) Income Tax @ 40% | $63.33 | $10 | $73.33 |
| (6) Operating Income: (1) - (2) - (5) | $120 | $40 | $160 |
| (7) Rate Base | $1,000 | $1,000 | $2,000 |
| (8) Rate of Return | 12.00% | 4.00% | 8.00% |

a/ Weighted cost of debt of 2.50% from Table 2.

As can be seen above, even though PSE attempts to determine each classes' revenue requirement to yield the required rate of return of 8.00%, Class A generates a 12.00% ROR under this flawed approach, while Class B produces a 4.00% ROR. It should be noted that the RORs are based on class calculated income taxes. If one were to continue to "allocate" income taxes based on ratebase, the disparity is even greater, as shown below:

**Table 4**
**Hypothetical Example**
**Quantification of Error Under PSE's Approach**
**(Income Taxes Allocated)**

| | Class A | Class B | Total |
|---|---|---|---|
| (1) Income Tax | $36.67 | $36.67 | $73.33 |
| (2) Operating Income | $146.67 | $13.33 | $160 |
| (3) Rate of Return | 14.67% | 1.33% | 8.00% |

As can be seen above, PSE's allocation of income taxes is arithmetically in error and produces mathematically incorrect revenue requirements and parity ratios.

**Q: Is it possible to use PSE's overall approach to determine class revenue requirements and parity ratios, and at the same time, generate mathematically correct results?**

A: Yes. If class income taxes at current rates are calculated based on the relationship between revenues and expenses, correct and proper class revenue requirements and parity ratios are produced. Using the same hypothetical example as presented earlier, except that income taxes are calculated, we can prove mathematically that proper results are achieved.

**Table 5**
**Hypothetical Example**
**Proper Determinations of Revenue Requirements**

| | Class A | Class B | Total Company |
|---|---|---|---|
| (1) Rate Base | $1,000 | $1,000 | $2,000 |
| (2) Revenues at Current Rates | $800 | $1,000 | $1,800 |
| (3) Expenses | $800 | $800 | $1,600 |
| (4) Interest Expense a/ | $25 | $25 | $50 |
| (5) Taxable Income: (2) - (3) - (4) | -$25 | $175 | $150 |
| (6) Income Tax @ 40% | -$10 | $70 | $60 |
| (7) Operating Income: (2) - (3) - (6) | $10 | $130 | $140 |
| (8) Income Requirement | $80 | $80 | $160 |
| (9) Income Deficiency | $70 | -$50 | $20 |
| (10) Revenue Conversion Factor | 0.6 | 0.6 | 0.6 |
| (11) Revenue Deficiency | $116.67 | -$83.33 | $33.33 |
| (12) Revenue Requirement | $916.67 | $916.67 | $1,833.33 |
| (11) Parity Ratio | 87% | 109% | 98% |

a/ Allocated on rate base using weighted cost of debt of 2.5%.

Note that the revenue requirement is identical for Class A and B since rate base and all costs are the same for each class. Under the mathematically correct determination in Table 5 above, Class A would receive an increase of $116.67 [Row (11)] as compared to

multiplied by the system effective income tax rate to arrive at each class' income tax responsibility.

**Q: What current revenue to cost and parity ratios result when Mr. Hoff's study is adjusted for a proper calculation of income taxes?**

A: A summary comparison of class current revenue to cost and parity ratios is provided below, while the development of my ratios are provided in Exhibit No. GAW-3:

**Table 7**
**Electric Revenue To Cost & Parity Ratios**

| | Current Revenue To Cost Ratio | | Parity Ratio | |
|---|---|---|---|---|
| Class | Corrected For Income Taxes | As Filed By PSE | Corrected For Income Taxes | As Filed By PSE |
| Residential | 90% | 88% | 97% | 95% |
| Secondary Sch. 24 | 97% | 99% | 104% | 107% |
| Secondary Sch. 25 | 100% | 105% | 107% | 112% |
| Secondary Sch. 26 | 96% | 98% | 103% | 105% |
| Primary Sch. 31/35/43 | 98% | 101% | 105% | 109% |
| Campus Sch. 40 | 87% | 83% | 93% | 89% |
| High Voltage Sch 46/49 | 92% | 91% | 99% | 98% |
| Transportation Sch. 44 | 86% | 88% | 92% | 94% |
| Lighting | 98% | 102% | 105% | 109% |
| Firm Resale/Special Contracts | 85% | 82% | 91% | 88% |
| Total Electric | 93% | 93% | 100% | 100% |

As can be seen above, the correction to income taxes produces somewhat different results. As noted earlier, the correction for income taxes is not dramatic in this case because all classes currently generate reasonably similar rates of return; i.e., are close to the system average rate of return. However, if not corrected, PSE's error can and will be significant in the future for classes that earn significantly above or below the system average rate of return.

a $183.33 increase under PSE approach as shown on [Row (9)] of Table 2. Similarly, Class B's correct required revenue decrease is $83.33 compared to PSE's approach of a $150 decrease [Table 2, Row 9]. As a check on the proper determination of class revenue requirement and parity ratios, the following is true at "cost of service" revenues:

**Table 6**
**Hypothetical Example**
**Quantification of Class Rates of Return Under Correct Approach**

| | Class A | Class B | Total Company |
|---|---|---|---|
| (1) Revenues at Proper Cost of Service | $916.67 | $916.67 | $1,833.33 |
| (2) Expenses | $800 | $800 | $1,600 |
| (3) Interest | $25 | $25 | $50 |
| (4) Taxable Income | $91.67 | $91.67 | $183.33 |
| (5) Income Tax | $36.67 | $36.67 | $73.33 |
| (6) Operating Income | $80 | $80 | $160 |
| (7) Rate Base | $1,000 | $1,000 | $2,000 |
| (8) Rate of Return | 8.00% | 8.00% | 8.00% |

While intuitively obvious because each class's costs and revenues are identical, when income taxes are properly calculated, correct revenue requirements and parity ratios are generated.

**Q: Have you conducted a replication analysis of Mr. Hoff's CCOSS using a proper determination of class income tax responsibility?**

A: Yes.

**Q: Please explain how you calculated electric income taxes for each class.**

A: Income taxes were calculated for each class by first determining each class' earnings before interest and income taxes (EBIT). Synchronized interest expense was then determined for each class based on the allocated level of rate base. Subtracting interest from EBIT results in each class's taxable income. This taxable income amount was then

1 **Q: Earlier in your testimony you indicated that you continue to have a minor difference**
2 **of opinion with Mr. Hoff's classification of Production and Transmission plant.**
3 **Please explain this difference.**
4 A: PSE has continued to utilize the Peak Credit Method to classify its Production and
5 Transmission plant between energy related and demand related plant investment. As
6 noted by Mr. Hoff, this method has a long history of being the accepted approach for PSE
7 as well as other Washington utilities to reasonably classify electric Production and
8 Transmission plant. Furthermore, Company witness Jon Piliaris discusses PSE's history
9 of using the Peak Credit Method and PSE's changes to the application of the method that
10 have evolved over time.
11 For this case, PSE classified Production and Transmission plant as 79% energy
12 related and 21% demand related. This current classification compares to a 74% energy
13 and 26% demand classification utilized by Mr. Hoff in PSE's last general rate case. In
14 that case, my studies and analysis indicated that a 85% energy and 15% demand
15 classification was more appropriate.
16 I have examined Mr. Piliaris' current Peak Credit analyses, and while I do not
17 agree with all aspects of his study, his current study results are much closer to my
18 findings and certainly fall within the range of reasonableness. Moreover, as
19 demonstrated by Mr. Piliaris, minor differences in the energy and demand classification
20 of Production and Transmission plant have an immaterial impact on cost of service
21 results. As such, my differences of opinion as to the various inputs and assumptions
22 required to conduct the Peak Credit classification are immaterial in terms of both the
23 energy and demand separation of Production and Transmission plant, and more

1 importantly, the end results of the CCOSS. For these reasons, I have accepted PSE's
2 classification of Production and Transmission plant.

3 **Q: Please explain Mr. Hoff's other changes to his CCOSS in which you also agree.**

4 A: In PSE's last rate case, ICNU witness Donald Schoenbeck and I disagreed with Mr.
5 Hoff's allocation of Washington excise (utility) taxes. In that case, Mr. Hoff allocated
6 this expense on the basis of Production, Transmission and Distribution plant. Because
7 these taxes are imposed based on revenue, I recommended that this expense is more
8 accurately assigned to classes on the basis of revenue. Mr. Hoff has made this
9 recommended change in this case.

10 In addition, during the last case Mr. Schoenbeck observed that PSE had assigned
11 a portion of two production related expense items (Account No. 557, Other Production
12 expense and Account No. 236.25, Montana Electric License Tax) to transportation
13 customers. Because transportation customers do not use PSE's production facilities, Mr.
14 Schoenbeck opined it is not proper to assign production related costs to the customers. In
15 this case, Mr. Hoff has not assigned any of these expenses to the Transportation class. I
16 also agree with this change.

17 **B. ELECTRIC CLASS REVENUE DISTRIBUTION**

18 **Q: How did Mr. Hoff develop his proposed distribution of the Company's requested**
19 **electric revenue increase to individual classes?**

20 A: Mr. Hoff sponsors PSE's proposed class distribution of the Company's originally
21 requested electric revenue increase of $148.4 million. Mr. Hoff states that his proposed
22 revenue distribution to customer classes is based on a desire to move all classes towards
23 full parity (cost of service) in a gradual manner. Mr. Hoff's proposed class rate spread

assigns smaller percentage increases to those classes that currently produce a parity ratio in excess of 105%, and equal percentage increases to all remaining retail classes since they all achieve parity ratios within about 5% of unity (100%). Under Mr. Hoff's proposal, the Campus Rate 40 generates a somewhat higher percentage increase than the equal percentage classes because these rates reflect customer specific distribution charges according to previous agreements.

A summary of PSE's proposed revenue increases by customer class is shown below:

**Table 8**
**PSE-Proposed Electric Revenue Increase**

| Class | Amount ($000) | Percent Increase |
|---|---|---|
| Residential (Schedule 7) | $90,905 | 8.37% |
| Secondary Voltage | | |
| Schedule 24 | $15,782 | 6.28% |
| Schedule 25 | $11,488 | 4.19% |
| Schedule 26 | $14,026 | 8.37% |
| Primary Voltage (Schedules 31/35/43) | $7,540 | 6.28% |
| Campus Rate (Schedule 40) | $3,897 | 8.68% |
| High Voltage (Schedules 46/49) | $2,959 | 8.37% |
| Lighting (Schedules 50-59) | $1,036 | 6.28% |
| Transportation (Schedules 448-449) | $516 | 8.37% |
| Total Jurisdictional (Retail) | $148,148 | 7.40% |
| Firm Resale/Special Contract (Schedule 5) | $296 | 22.35% |
| Total Company | $148,444 | 7.41% |

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1 **Q: Are PSE's proposed customer class revenue increases reasonable for its electric**
2 **operations?**
3 A: Yes. As I indicated earlier in my testimony, all CCOSS studies require numerous
4 assumptions and subjective judgments. As such, results from these analyses should not
5 be viewed as surgically precise costs to serve, and therefore, should be used as a guide in
6 establishing class revenue responsibility. In this context, CCOSS results are most useful
7 in identifying classes or situations in which current revenues produce significantly higher
8 or lower contributions to profits than the system average profitability. Moreover, when
9 such situations exist, gradual movement toward system-wide profitability is an accepted
10 and prudent ratemaking principle.
11 I have evaluated Mr. Hoff's class revenue spread and have determined that his
12 proposal reasonably and properly comports with the use of CCOSS results as a guide to
13 evaluate required movements to system-wide profitability, and at the same time
14 recognizes gradualism.
15 **Q: Mr. Watkins, please provide your recommended scale back method to assign class**
16 **electric revenue increases should the Commission authorize an overall revenue**
17 **requirement increase less than that proposed by PSE.**
18 A: I recommend that the Company's customer class revenue increase distribution be scaled
19 back in equal portions (i.e., equal percentages) should the Commission authorize an
20 overall electric revenue increase less than that requested by PSE. However, should the
21 Commission authorize an average increase substantially less than the 7.4% increase
22 requested; i.e., less than about 3.7%, an across the board (equal percentage) increase to
23 all retail classes would not be inappropriate. This is because when the overall percentage

increase is very small, the difference between the Company's proposed revenue spread and an across the board is not material. Given the reasonably similar profit contributions (parity ratios) of all classes, an equal percentage (across the board) increase to all classes is, therefore, appropriate if the overall percentage increase is small.

## C. ELECTRIC RESIDENTIAL RATE DESIGN

**Q: Please describe PSE's current and proposed residential electric rate structure.**

A: PSE's current residential electric rate structure consists of a fixed monthly customer charge ($7.00) and an inverted, two-block energy rate. Mr. Hoff proposes to increase all three rate elements by an equal percentage (8.37%) such that his proposed customer charge is $7.59. Under the Company's proposal, base rate residential energy charges would increase from 8.4233¢/kwh to 9.1275¢/kwh for the first 600 kwh of monthly usage and from 10.2042¢/kwh to 11.0584¢/kwh for all additional energy consumption.

**Q: Do you agree with Mr. Hoff's proposed equal percentage increases to each of the Residential rate elements?**

A: No.

**Q: Please explain.**

A: While Mr. Hoff's proposed equal percentage increase to all Residential rate elements may not appear to be unreasonable on its face, it should be recognized that the fixed monthly customer charge was just increased by 16% last year from $6.02 to $7.00. As such, PSE's current proposal to increase the Residential customer charge to $7.59 represents a 26% increase in this rate over a two-year period. In addition, I have conducted an analysis of the direct "customer costs" associated with maintaining a Residential customer's account that indicates a monthly cost of $3.58 to $3.61. Based on

**Q: Please provide a summary of Mr. Hoff's CCOSS results at current rates.**

A: Mr. Hoff's CCOSS generates the following current revenue to cost and parity ratios. It should be noted that Mr. Hoff's electric CCOSS reflects all accounting and proforma adjustments proposed by the Company in its initial filing on May 8, 2009.

**Table 1**
**PSE As Filed Electric CCOSS At Current Rates**

| Rate Schedule | Class | Current Revenue To Cost Ratio a/ | Relative Parity Ratio b/ |
|---|---|---|---|
| 7 | Residential | 88% | 95% |
| 24 | Secondary Voltage <50kw | 99% | 107% |
| 25 | Secondary Voltage >50kw <350kw | 105% | 112% |
| 26 | Secondary Voltage >350 | 98% | 105% |
| 31/35/43 | Primary Voltage | 101% | 109% |
| 40 | Campus | 83% | 89% |
| 46/49 | High Voltage | 91% | 98% |
| 4489/449 | Retail Wheeling (Transportation) | 88% | 94% |
| 50-59 | Lighting | 102% | 109% |
| 5 | Firm Resale/Special Contract | 82% | 88% |
| | Total Company | 93% | 100% |

a/ Current revenue to cost of service (revenue requirement) ratio.
b/ Indexed revenue to cost ratio.

### 1. Income Taxes

**Q: Please explain your disagreements with Mr. Hoff relating to the treatment of income taxes for purposes of PSE's CCOSS.**

A: As is the case for virtually all investor owned public utilities, income taxes represent a significant expense for PSE's electric operations. Although Mr. Hoff has incorporated PSE's total company electric income taxes in his CCOSS, his analysis at current rates inappropriately assigns this expense to individual classes. Mr. Hoff's inappropriate assignment of income taxes at current rates then results in a mathematical error in his determination of class revenue requirements and attendant parity ratios.

these quantitative factors as well as economic pricing principles and public policy, I recommend no increase to the current Residential fixed monthly electric customer charge of $7.00.

**Q: Please explain your Residential direct customer cost analysis.**

A: My Residential customer cost analysis is provided in Exhibit No. GAW-4, which consists of two pages. Page 1 of this Exhibit provides my analysis using PSE's required return on equity of 10.8% and results in a monthly cost of $3.61. Page 2 of this Exhibit is identical to page 1 except that a recommended cost of equity of 9.5% is utilized which reflects the recommendation of Public Counsel cost of capital witness Stephen Hill in this case. As indicated in this Exhibit, my analysis includes the capital costs (return and taxes) associated with meters investment as well as the monthly O&M costs required to maintain a customer's account. These O&M costs include meters operating expenses, meter reading expenses and customer records and collections expenses. Although direct customer costs analyses often also include the capital costs associated with customer service lines, I have excluded these costs in my analyses because PSE's tariffs contain provisions for these costs within its electric line extension policy and fees.[4]

**Q: Please explain PSE's electric line extensions policy for residential customers.**

A: Electric Tariff G, Schedule 85 contains PSE's policy regarding line extensions and connection fees for new customers. In general, customers are charged a connection fee based on the following formula:

+ Primary Voltage Lines Extension Costs
+ Secondary Voltage Lines Extension Costs
+ Exceptional Transmission & Substation Costs

[4] Schedule 85 of PSE electric tariff.

1 - Margin Allowance
2 = Line Extension Cost
3 + Service Line Costs
4 = Total Cost to Customer
5
6 These line extension costs include, at a minimum, the estimated cost to install conductors
7 (excluding service lines) and transformers. It should be noted that the margin allowance
8 does not include service lines, meaning that customers are responsible for the costs of
9 installing service lines to their meters. Customers are charged a non-refundable
10 connection charge for all service line costs, as well as the line extension costs above the
11 prescribed margin allowance. Estimated construction costs differ for underground and
12 overhead service while the margin allowance is constant for both underground and
13 overhead customer service.
14 **Q: What economic pricing principles relate to the determination of fixed monthly**
15 **customer charges?**
16 A: The most basic tenet of competition is that prices ensure the most efficient allocation of
17 society's resources. Because public utilities are generally afforded monopoly status
18 under the belief that resources are better utilized without the duplication of the fixed
19 facilities required to serve consumers, a fundamental goal of regulatory policy is that
20 regulation should serve as a surrogate for competition to the greatest extent practical. As
21 such, the pricing policy for a regulated public utility should mirror those of competitive
22 firms to the greatest extent practical.
23 **Q: Please briefly discuss how prices are generally structured in competitive markets.**
24 A: Economic theory tells us that efficient price signals result when prices are equal to long-
25 run marginal costs. It is well known that, in the long-run, all costs are variable and

1 hence, efficient pricing results from the incremental variability of costs even though a
2 firm's short-run cost structure may include a high level of sunk or "fixed" costs. Indeed,
3 competitive market-based prices are generally structured based on usage, i.e. variable,
4 pricing.

5 **Q: Please explain how this theory and application of competitive pricing should be**
6 **transferred to that of a regulated public utility, such as PSE.**

7 A: Due to PSE's investment in system infrastructure, there is no debate that many of PSE's
8 short-run costs are fixed in nature. As discussed above, efficient competitive prices are
9 established based on long-run costs, which are entirely variable in nature.

10 However, marginal cost pricing only relates to efficiency. This pricing does not
11 attempt to always address fairness or equity. From a perspective of fair and equitable
12 pricing of a regulated monopoly's products and services, it is generally agreed that
13 payments for a good or service should be in accordance with the benefits received. Those
14 who receive more benefits should pay more in total than those who receive fewer
15 benefits. With respect to electric or natural gas usage, the volume of consumption is the
16 most direct, and perhaps best, indicator of benefits received, such that volumetric pricing
17 promotes the fairest pricing mechanism to customers and to the utility.

18 The above philosophy is, and has been, the belief of economists, regulators, and
19 the marketplace for many years. As an illustration, consider utility industry pricing in its
20 infancy (1800s). In the beginning, customers paid a fixed monthly fee and consumed as
21 much of the utility service/commodity as they desired (usually water). It soon became
22 apparent that the fixed monthly fee rate schedule was inefficient and unfair. Utilities
23 soon began metering their commodity and charging only for the amount actually

1 consumed. In this way, consumers receiving more benefits from the utility than others
2 paid more in total for the utility service because they used more of the commodity.
3 Furthermore, virtually every capital intensive industry is faced with a high
4 percentage of fixed costs in the short-run. This includes the manufacturing and
5 transportation industries. Prices for competitive products and services in these industries
6 are invariably established on a volumetric basis, including those that were once regulated;
7 e.g., airline travel and rail service.

8 **Q: Why do customer charges exist at all for public utilities?**

9 A: The conventional wisdom in public utility pricing is that some revenues should be
10 collected from fixed monthly charges. Although revenue stability clearly results from
11 such pricing mechanisms, this stability in and of itself simply reduces the risk to
12 shareholders at the expense of efficient price signals. From a practical standpoint, rates
13 charged by public utilities are usually separated into a few classes. Within these classes,
14 there are some customers who consume relatively small amounts of electricity and others
15 that require much greater quantities of the public utility's service. Due to the incremental
16 costs of connecting and maintaining a customer's account, the general practice is to
17 charge a fixed monthly fee, such that small usage customers within a class provide
18 revenue contributions to the utility to compensate for the cost of connecting and
19 maintaining the customer's account, as well as contribute revenue based on the amount of
20 electricity or natural gas actually used.

21 **Q: How are PSE's line extension and new customer fees structured?**

22 A: New customers are generally charged a connection fee based on their expected level of
23 consumption. That is, customers that are expected to use less electricity or natural gas

must pay a higher connection fee than customers with expected higher levels of usage. This pricing mechanism eliminates any claim that customer charges should include the capital costs associated with connecting a new customer. As such, the purpose of this discussion is to bring to the Commission's attention the fact that any claimed desire for higher customer charges due to differences in intraclass consumption is largely already reflected in the upfront fees that small volume residential customers pay in recognition of their expected lower consumption. Therefore, higher monthly customer charges coupled with upfront connection fees represent a clear, double counting of costs to connect such customers.

## III. NATURAL GAS OPERATIONS

### A. NATURAL GAS CLASS COST OF SERVICE

**Q: Have you examined PSE's natural gas CCOSS sponsored by Ms. Janet Phelps in this case?**

A: Yes. I conducted a thorough examination of Ms. Phelps' proposed CCOSS filed in this case.

**Q: Did Ms. Phelps use the same methodology in this case as used by PSE in prior rate cases?**

A: No.

**Q: Please explain the reasons for this departure from prior studies.**

A: As with most natural gas local distribution company (LDC) CCOSS, there has been considerable disagreement and controversy centered around the assignment of distribution Mains, plant and related costs to individual rate classes. These disagreements and controversies have stemmed from the fact that with rare exception, the specific Mains

1 investment required to serve a particular customer or group of customers cannot be
2 isolated or specifically identified. As such, the vast majority of distribution Mains
3 represent joint costs in which PSE's investment in Mains serves the collective need of all
4 customers. Furthermore, there are definite economies of scale present in LDC systems
5 (including PSE's) such that all customers reap the benefits of system-wide costs; i.e., the
6 cost to serve any customer collectively in the system is less than to serve the customer on
7 a stand-alone basis.

8 As a result of various experts' opinions, whose views are often diametrically
9 opposed regarding the proper assignment of Mains costs, a study group of various
10 interests was formed earlier this year in an attempt to resolve various CCOSS issues,
11 most notably the allocations of Mains investment. While the group did not reach
12 agreement on a Mains allocation method or even a philosophical consensus as to cost
13 causation, each party's views were debated and clearly understood. In short, I believe it
14 is fair to say that there are at least some merits to the various positions and philosophies
15 of the various parties, yet no single answer can definitively be viewed as correct. In this
16 regard, it is clear to me that Ms. Phelps objectively considered the merits of the various
17 positions and attempted to develop a new allocation method that in her words is: "1)
18 consistent with cost of service principles; 2) acknowledges past Commission decisions;
19 3) is consistent with PSE's distribution system; 4) is fair; 5) is reasonable; and 6)
20 addresses concerns raised in PSE's 2007 GRC by parties on both ends of the spectrum."
21 Ms. Phelps addresses the various views concerning the allocation of Mains as well as her
22 proposed methodology in great detail on pages 21 through 31 of her direct testimony.

1 **Q: What is your overall assessment of the new Mains allocation method proposed by**
2 **Ms. Phelps?**
3 A: While Ms. Phelps' proposed method relies on several subjective decisions, this is true for
4 many aspects of embedded cost studies in which joint cost responsibility must be
5 assigned individual classes of customers. While I do not agree with many aspects of
6 PSE's current methodology, and I am reluctant to endorse this new methodology, I can
7 inform the Commission that Ms. Phelps' study is not inherently biased against any
8 customer class. However, any endorsement or criticisms of the application of this new
9 methodology for purposes of this case are largely academic. This is because Ms. Phelps
10 also conducted CCOSS analyses utilizing alternative methods, including the method
11 proposed by PSE in its last rate case, a method similar to what I proposed in PSE's last
12 case, and a method based on the views generally supported by Industrial customers. A
13 summary of these alternative CCOSS are provided on page 33 of Ms. Phelps' testimony,
14 and show similar results, regardless of the method selected.
15 **Q: Did Ms. Phelps assign income taxes in a manner similar to that used by Mr. Hoff in**
16 **his electric CCOSS?**
17 A: Yes. Ms. Phelps also allocated income tax expense at current rates based on rate base
18 instead of properly calculating this item based on the relationship between revenues and
19 expenses. The impact of this correction is not material in terms of CCOSS in this case.
20 However, I recommend that future natural gas studies more properly assign income tax
21 liability as was discussed earlier in my testimony.
22 ///

**Q: What are your conclusions and recommendations concerning natural gas CCOSS for purposes of this case?**

A: As shown on page 33 of Ms. Phelps' direct testimony, all study methodologies provide similar results (at least in an ordinal sense). As such, Ms. Phelps' preferred (proposed) CCOSS serves as a reasonable basis for evaluating class revenue responsibility in this case.

**Q: What parity ratios are produced under Ms. Phelps' recommended CCOSS?**

A: Ms. Phelps' recommended CCOSS generates the following class parity ratios:

**Table 9**
**PSE-Natural Gas Parity Ratios**
**(PSE & CCOSS)**

| Class | Parity Ratio |
|---|---|
| Residential (Schedules 16/23/53) | 99% |
| Comm. and Ind. (Schedules 31,61) | 97% |
| Large Volume (Schedules 41,41T) | 131% |
| Interruptible (Schedules 85, 85T) | 119% |
| Limited Interruptible (Schedule 86) | 161% |
| Non-Exclusive Interruptible (Schedules 87,87T) | 95% |
| Special Contracts | 80% |
| Rentals (Schedules 71/72/74) | 79% |
| Total Company | 100% |

## B. NATURAL GAS CLASS REVENUE DISTRIBUTION

**Q: How did Ms. Phelps develop her proposed distribution of PSE's requested natural gas revenue increase to individual customer classes?**

A: In her May 8, 2009 filing, Ms. Phelps claims that her proposed class revenue spread emphasizes two factors: (1) customer class parity ratios; and (2), customer impacts. Specifically, Ms. Phelps recommends no increase to rate Schedule 86 (Limited

Interruptible) due to its very high parity ratio which is in excess of 160%. Next, she proposes to increase rate Schedules 41 and 85 (Large Volume and Interruptible) at half (50%) of the system-wide percentage increase due to the relatively high parity ratios that exceed 100%. Next, Ms. Phelps proposes to increase the appliance rental class by the system average percentage increase (including gas costs). All remaining class margin revenues (Residential, Commercial & Industrial, and Non-Exclusive Interruptible) are then increased at an equal percentage to generate PSE's proposed revenue requirement.

**Q: Please provide a summary of PSE's proposed class revenue increases.**

A: The following table provides Ms. Phelps' proposed class revenue increases at the Company's requested revenue requirement as well as the corresponding percentage increases in margin (non-gas) rates. These increases are presented by Ms. Phelps in her Supplemental Direct Testimony of August 3, 2009, Exhibit NO. JKP-24.

**Table 10**
**PSE Proposed Natural Gas Increases**

| Class | Increase $(000) | Percentage Increase in Margin Rates |
|---|---|---|
| Residential (Schedules 16/23/53) | $22,120 | 8.2% |
| Comm. and Ind. (Schedules 31,61) | $6,412 | 8.2% |
| Large Volume (Schedules 41,41T) | $738 | 4.1% |
| Interruptible (Schedules 85, 85T) | $356 | 4.1% |
| Limited Interruptible (Schedule 86) | $0 | 0.0% |
| Non-Exclusive Interruptible (Schedules 87,87T) | $520 | 8.2% |
| Special Contracts | $56 | 3.5% |
| Appliance Rentals (Schedule 71/72/74) | $206 | 2.5% |
| Other Revenue | $0 | 0.0% |
| Total Company | $30,408 | 7.5% |

///

///

1 **Q: Is Ms. Phelps' proposed class revenue spread reasonable?**

2 A: By and large, Ms. Phelps' proposed class revenue spread appropriately considers cost of
3 service and gradualism. As a result, and with one exception, I find Ms. Phelps' proposed
4 class revenue spread to be reasonable.

5 **Q: Please explain your exception to Ms. Phelps' proposed class revenue increases.**

6 A: Ms. Phelps claims that she increased the appliance rental class by the system average
7 percentage increase. While this is true if company (PSE) supplied gas costs are included,
8 Ms. Phelps proposed 2.5% increase to the applicable rentals is significantly lower than
9 PSE's requested 7.5% increase in margin (non-gas) revenues. Ms. Phelps' proposed
10 minimal increase to this competitive appliance rental service does not comport with her
11 own CCOSS findings nor is it in the spirit of gradualism relative to other proposed
12 increases. Although the fact that appliance rentals currently generates the lowest parity
13 ratio on the PSE system, this metric does not adequately portray the true revenue
14 deficiency for this competitive service. As shown in Ms. Phelps' Exhibit No. JKP-5, the
15 rentals class currently operates at a loss of 4.51%. Indeed, this is the only class whose
16 current revenues produce negative operating income. Perhaps most troubling is the
17 magnitude of this class revenue deficiency relative to the revenue currently provided.
18 Under current rates, the appliance rentals class provides $8.256 million in revenue. Ms.
19 Phelps has determined that the revenue deficiency associated with this class is $2.896
20 million. As such, a 35.1% increase would be required to bring this competitive service
21 class up to system parity, yet Ms. Phelps proposes only a 2.5% increase for this class.
22 ///

1 **Q: What is your recommendation as to an appropriate and reasonable increase to the**
2 **Appliance rentals class?**
3 A: Given the severe revenue deficiency and negative income currently provided by the
4 rentals class, I recommend that this class' rates be increased at 125% of the system
5 average increase in margin (non-gas) revenues. At the company's requested increase of
6 7.5% in non-gas revenue, this would equate to an 8.75% increase to the rentals class.
7 **Q: If the Commission should authorize an overall natural gas increase less than the**
8 **$30.408 million originally requested by PSE, how should the ultimate authorized**
9 **increase be spread to individual classes?**
10 A: I recommend that Ms. Phelps' proposed increases, adjusted for my recommended rentals
11 increase, be scaled back proportionally across all classes.
12 **C. NATURAL GAS RESIDENTIAL RATE DESIGN**
13 **Q: Please describe PSE's current and proposed residential natural gas rate structure.**
14 A: Currently, PSE's residential natural gas base rates include a fixed monthly customer
15 charge of $10.00, a flat delivery (distribution charge) of $0.33606/therm. In addition, a
16 "new customer" delivery charge is applicable and rendered to certain new customers that
17 range from $0.11/therm to $0.17/therm. Ms. Phelps proposes to increase the fixed
18 monthly customer charge to $10.82 and increase the flat distribution charge to $0.36351 .
19 **Q: Please explain PSE's natural gas line extension and new customer connection policy.**
20 A: PSE's Natural Gas Schedule 7 (Facilities Extension Standards), coupled with its Natural
21 Gas Rule No. 7 (Extension of Distribution Facilities-Other than the Kittitas County), sets
22 forth the terms and pricing structure for new customer connections.

1 PSE's connection pricing methodology is based on a philosophy that small
2 volume customers will utilize the Company's system less than similar, yet larger, usage
3 customers. The Company's connection pricing method recognizes that the volume of
4 natural gas used by small customers may not be sufficient to recover the investment
5 required to add these customers to the system. In other words, PSE must install a service
6 line, meter (and base) and regulator for every new customer. If a prospective customer is
7 only planning to use natural gas for example in a decorative fireplace, this customer will
8 not generate enough base rate (non-gas or margin) future revenue over time to justify the
9 Company's investment. Conversely, a prospective customer that will use natural gas for
10 space heating, hot water heating, and cooking will use substantially more gas and provide
11 significantly more base rate revenue to PSE, thereby justifying PSE's investment to add
12 this customer.
13 PSE's Rule 7 provides a formulistic cost/benefit method to evaluate whether each
14 new customer will or will not provide enough future revenue to recover the investment
15 required to connect the perspective customer. If a new customer is not expected to
16 consume enough gas (and hence, generate revenue) to justify the incremental costs to add
17 this customer, this customer will be required to make an upfront cash contribution to
18 PSE. Furthermore, depending on the specific differences between the expected
19 connection costs and future revenues (i.e. benefits), the customer may pay an upfront
20 cash contribution and agree to pay a "new customer" surcharge on gas used for a period
21 of up to five years.
22 ///

**Q: What criteria are used to evaluate whether a potential customer will or will not use enough natural gas to justify the costs of connecting this customer?**

A: The cost/benefit method outlined in Natural Gas Schedule 7 provides various usage allowances based on the number and type of natural gas appliances installed in a customer's house. For customers who use natural gas for space heating, an allowance is given based on the square footage of the customer's home. Specific usage allowances are also given for water heaters, cooking ranges, clothes dryers, hot tubs, and fireplaces. These allowances represent the "benefits" portion of this method. Natural Gas Schedule 7 also provides a schedule of specific incremental costs considered in PSE's cost/benefit method. These costs include a flat amount per foot to extend any Mains, a fixed amount to run a Service line, a fixed amount for a new meter, and a provision for annual Operating and Maintenance expenses.

**Q: You mentioned a surcharge imposed on certain new customers. What is the current structure and level of this surcharge?**

A: Depending on the expected level of revenue shortfall from PSE's cost/benefit analysis, as well as the upfront cash contribution made by the customer, the monthly "new customer" residential surcharge imposed is either $0.115/therm or $0.17/therm for all gas consumed each month. This surcharge is in addition to the base rate distribution usage charge of $0.33606/therm and in addition to the monthly fixed customer charge of $10.00.

**Q: What are the ratemaking implications of PSE's connection polices?**

A: First, it is obvious that PSE recognizes that customers do not connect to its gas distribution system simply for the sake of being connected. Rather, customers join the Company's system in order to consume gas. More importantly, PSE's cost/benefit and

1 cost reimbursement methodology recognizes that expected revenue is a function of a
2 customer's usage rather than of a customer simply being connected to the system. This
3 realistic understanding—that revenue contributions are, and should be, a function of
4 usage—dovetails with my earlier discussion that prices should reflect variability in usage
5 rather than fixed per customer amounts. Such a pricing structure is not only the most
6 efficient but also the most fair in that customers pay in relation to the level of gas
7 consumed.

8 **Q: If a customer is charged an upfront connection fee and/or a new customer**
9 **surcharge, will this customer be overcharged if fixed monthly customer charges are**
10 **increased?**

11 A: Yes. Connection fees and new customer surcharges represent a payment to PSE to
12 compensate the Company for the costs of installing services lines and costs associated
13 with metering and regulating equipment. If customer charges are increased or designed
14 to also recover the costs of Services, Meters and other expenses, the customer will be
15 double-charged: once for the connection and/or "new customer" surcharge and again for
16 the ongoing monthly customer charge that must be paid.

17 **Q: Is the proper solution to this double payment problem the abandonment of**
18 **connection fees?**

19 A: No. Although PSE's line extension and customer polices (Schedule 7 and Rule 7) are
20 admittedly complicated and even perhaps self-serving to the Company, they do provide
21 pricing and costing signals that are in the best interest of PSE and all of its customers. As
22 I explained earlier, there is no doubt that there are circumstances in which it is neither

1 beneficial to PSE nor its existing customers to extend service to a customer that will have
2 little or no gas consumption.
3 The more appropriate solution is to maintain a pricing policy for PSE's recurring
4 revenues that is volumetrically based and with a minimum level of customer charges.
5 **Q: Mr. Watkins, your discussion thus far has been limited to new customers on the**
6 **PSE system. Do these circumstances and concepts apply to existing customers as**
7 **well?**
8 A: Yes. First, it is well recognized that pricing should be forward looking. Therefore,
9 recognition of how new customers affect costs and revenue collection is an important
10 point to consider in establishing pricing policies for all customers.
11 Second, PSE is a relatively young and rapidly growing gas distribution company.
12 This growth has occurred for several years and will undoubtedly continue in the
13 foreseeable future.
14 Third, existing customers, like new customers, are not connected to the PSE
15 system simply for the sake of being connected, but rather because they desire to use gas
16 throughout the year. PSE's service lines and meters were not installed simply to enable
17 this connection, but rather to serve as the means of enabling customers the ability to
18 purchase or transport gas. As such, service lines are merely an extension of PSE's
19 Distribution Mains with the primary difference being one of accounting nomenclature
20 because service lines are typically located on customer owned property.
21 ///
22 ///
23 ///

1 **Q: What ramifications do these factors have on determining a reasonable fixed**
2 **monthly customer charge for PSE's residential rates?**
3 A: Given PSE's new customer connection policies and pricing methodology, its level of
4 growth, recognition that service lines represent an extension of distribution Mains, and
5 most importantly, that efficient and fair pricing dictates volumetric based rates, PSE's
6 natural gas fixed monthly customer charges should remain at their current levels
7 regardless of any increase in overall revenue requirement authorized by this Commission.
8 **Q: Have you conducted an analysis to determine if PSE's current residential customer**
9 **charges are reasonable?**
10 A: Yes. Similar to the direct customer cost analysis I conducted for PSE's electric
11 operations, I have also conducted an analysis of the Company's residential gas customer
12 costs that should be considered in evaluating the reasonableness of fixed monthly
13 customer charges.
14 **Q: Please explain your natural gas Residential customer cost analysis.**
15 A: Exhibit No. GAW-5 presents the results of my residential natural gas customer cost
16 analysis.
17 **Q: Please explain your residential natural gas customer cost analysis.**
18 A: The direct customer costs provided on page 1 of Exhibit No. GAW-5 include those rate
19 base and expense items required for each customer connection as well as those required
20 to maintain a customer's account. In recognition of PSE's connection fees and new
21 customer surcharges and the concepts enumerated earlier, I have excluded Services
22 investment from my analysis. The results of my analyses indicate a monthly customer

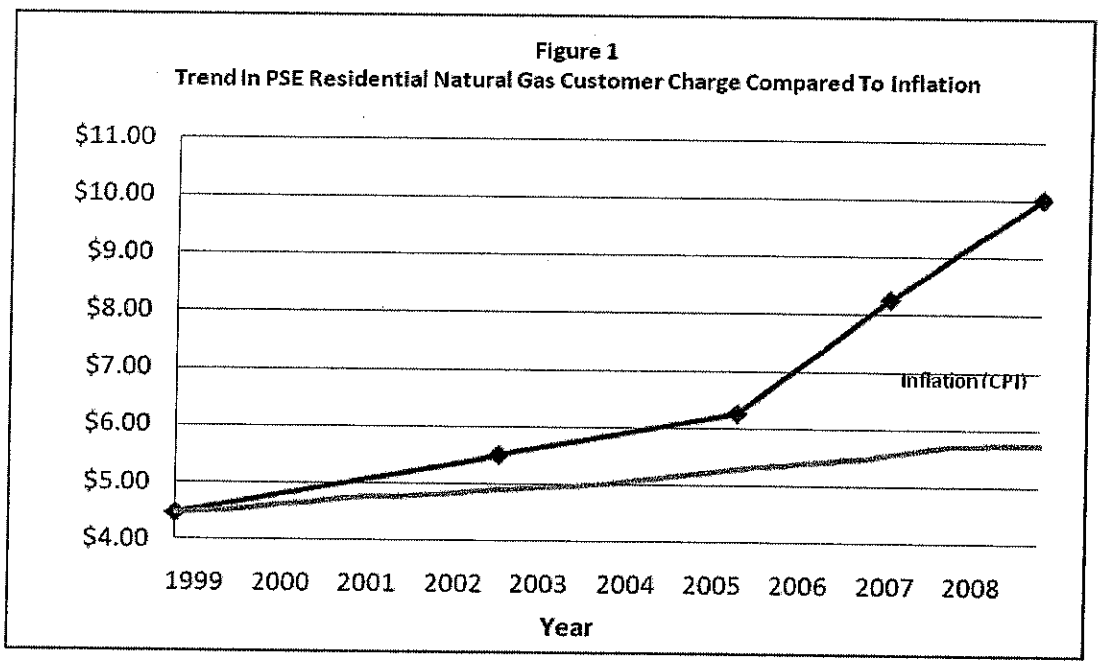
cost of $8.21 at PSE's requested 10.8% return on equity and $8.03 under a 9.50% cost of equity.

**Q: Have you conducted an analysis of the historical increases and trends to PSE Residential natural gas customer charges?**

A: Yes. Table 11 below provides a history of PSE's Residential natural gas customer charges over the last decade, compared to the attendant cumulative change in inflation (as measured by the consumer price index). This history and trend is provided graphically in Figure 1.

**Table 11**
**Historical Trends in PSE Residential Natural Gas Customer Charge**

| Effective Date | Customer Charge | Percent Change From 1/1/99 Rate | Cumulative Inflation (CPI) From 1/1/99 |
|---|---|---|---|
| 1/1/99 | $4.46 | -- | |
| 9/1/02 | $5.50 | 23.3% | 9.9% |
| 3/4/05 | $6.25 | 40.1% | 18.2% |
| 1/13/07 | $8.25 | 85.0% | 24.4% |
| 1/1/08 | $10.00 | 124.2% | 28.5% |



1 As indicated above, while general inflation has totaled about 28.5% over the last 10
2 years, PSE's Residential natural gas customer charge has increased by 124.2%.
3 Although the customer charges that the Commission has found to be appropriate
4 and reasonable have increased at more than four times the rate of inflation during the
5 most recent ten-year period, the trend in the disparity between inflation and customer
6 charge increases has been increasing, as clearly seen in Figure 1. Perhaps most troubling
7 is the fact that the LDC industry in general has seen significant cost savings over the last
8 ten years in metering costs and records and collection costs which constitute the vast
9 majority of "customer costs".[5]

10 **Q: What is your recommendation regarding PSE's Residential natural gas customer**
11 **charge.**

12 A: Even though a reduction to PSE's residential natural gas customer charge is warranted, in
13 the interest of rate continuity, I recommend no change in the current customer charge of
14 $10.00.

15 **IV. PSE SUPPLEMENTAL FILING**

16 **Q: Does PSE offer revised class revenue distribution proposals that incorporate the**
17 **Company's supplemental request for an overall revenue requirement increase**
18 **above those contained in its May 5, 2009 filing?**

19 A: Yes. Revised class revenue distribution proposals appear in David Hoff's prefiled
20 Supplemental Direct Testimony of September 28, 2009, relating to PSE's electric
21 operations, identified as Exhibit No. DWH-8, and in Janet Phelps's prefiled Supplemental

[5] These cost savings have been primarily a result of automatic meter reading equipment, a drastic reduction in computer costs, and economies of scale realized by centralized customer call and billing centers.

1 Direct Testimony on August 3, 2009 concerning the Company's natural gas operations,
2 identified as Exhibit No. JKP-24.

3 **Q: Please explain Mr. Hoff's and Ms. Phelps's modified class revenue distribution**
4 **proposals that incorporate PSE's proposed additional overall changes in**
5 **requirement provided in the Supplemental testimony of John Story.**[6]

6 A: Mr. Hoff and Ms. Phelps both utilized the same methodologies employed in their initial
7 filings to distribute the Company's latest proposed revenue requirement for its electric
8 and natural gas operations Mr. Hoff's and Ms. Phelps's class revenue distribution
9 methodologies were discussed earlier in my testimony.

10 **Q: Do Mr. Hoff's and Ms. Phelps's supplemental testimonies effect your class revenue**
11 **distribution proposals in any way?**

12 A: No. As discussed earlier, my proposals (for purposes of the dollar amounts provided and
13 discussed in revenue distribution) are based on the amounts PSE requested for its electric
14 operations in its initial filing (May 8, 2009) and for its natural gas operations in its
15 August 3, 2009 supplemental filing. In this regard, my proposals provide an "apples to
16 apples" comparison of the Company's and my proposals. Recognizing that the
17 Commission may ultimately authorize an overall revenue requirement different than that
18 proposed by PSE, I have provided a method by which my revenue distribution proposals
19 should be applied to a different overall change in revenues.

20 **Q: Does this complete your direct testimony?**

21 A: Yes.

[6] Discussed at pages 2 and 5 of Exhibit No. JHS-9T of Supplemental Direct Testimony of Mr. Story filed September 28, 2009.

BACKGROUND & EXPERIENCE PROFILE

# GLENN A. WATKINS

VICE PRESIDENT/SENIOR ECONOMIST
TECHNICAL ASSOCIATES, INC.

## EDUCATION

| | |
|---|---|
| 1982 - 1988 | M.B.A., Virginia Commonwealth University, Richmond, Virginia |
| 1980 - 1982 | B.S., Economics; Virginia Commonwealth University |
| 1976 - 1980 | A.A., Economics; Richard Bland College of The College of William and Mary, Petersburg, Virginia |

## POSITIONS

| | |
|---|---|
| Jul. 1995-Present | Vice President/Senior Economist, Technical Associates, Inc. |
| Mar. 1993-1995 | Vice President/Senior Economist, C. W. Amos of Virginia |
| Apr. 1990-Mar. 1993 | Principal/Senior Economist, Technical Associates, Inc. |
| Aug. 1987-Apr. 1990 | Staff Economist, Technical Associates, Inc., Richmond, Virginia |
| Feb. 1987-Aug. 1987 | Economist, Old Dominion Electric Cooperative, Richmond, Virginia |
| May 1984-Jan. 1987 | Staff Economist, Technical Associates, Inc. |
| May 1982-May 1984 | Economic Analyst, Technical Associates, Inc. |
| Sep. 1980-May 1982 | Research Assistant, Technical Associates, Inc. |

## EXPERIENCE

### I. Public Utility Regulation

A. Costing Studies -- Conducted, and presented as expert testimony, numerous embedded and marginal cost of service studies. Cost studies have been conducted for electric, gas, telecommunications, water, and wastewater utilities. Analyses and issues have included the evaluation and development of alternative cost allocation methods with particular emphasis on ratemaking implications of distribution plant classification and capacity cost allocation methodologies. Distribution plant classifications have been conducted using the minimum system and zero-intercept methods. Capacity cost allocations have been evaluated using virtually every recognized method of allocating demand related costs (e.g., single and multiple coincident peaks, non-coincident peaks, probability of loss of load, average and excess, and peak and average).

Embedded and marginal cost studies have been analyzed with respect to the seasonal and diurnal distribution of system energy and demand costs, as well as cost effective approaches to incorporating energy and demand losses for rate design purposes. Economic dispatch models have been evaluated to determine long range capacity requirements as well as system marginal energy costs for ratemaking purposes.

B. Rate Design Studies -- Analyzed, designed and provided expert testimony relating to rate structures for all retail rate classes, employing embedded and marginal cost studies. These rate structures have included flat rates, declining block rates, inverted block rates, hours use of demand blocking, lighting rates, and interruptible rates. Economic development and special industrial rates have been developed in recognition of the competitive environment for specific customers. Assessed alternative time differentiated rates with diurnal and seasonal pricing structures. Applied Ramsey (Inverse Elasticity) Pricing to marginal costs in order to adjust for embedded revenue requirement constraints.

C. Forecasting and System Profile Studies -- Development of long range energy (Kwh or Mcf) and demand forecasts for rural electric cooperatives and investor owned utilities. Analysis of electric plant operating characteristics for the determination of the most efficient dispatch of generating units on a system-wide basis. Factors analyzed include system load requirements, unit generating capacities, planned and unplanned outages, marginal energy costs, long term purchased capacity and energy costs, and short term power interchange agreements.

D. Cost of Capital Studies -- Analyzed and provided expert testimony on the costs of capital and proper capital structures for ratemaking purposes, for electric, gas, telephone, water, and wastewater utilities. Costs of capital have been applied to both actual and hypothetical capital structures. Cost of equity studies have employed comparable earnings, DCF, and CAPM analyses. Econometric analyses of adjustments required to electric utilities cost of equity due to the reduced risks of completing and placing new nuclear generating units into service.

E. Accounting Studies -- Performed and provided expert testimony for numerous accounting studies relating to revenue requirements and cost of service. Assignments have included original cost studies, cost of reproduction new studies, depreciation studies, lead-lag studies, Weather normalization studies, merger and acquisition issues and other rate base and operating income adjustments.

## II. Transportation Regulation

A. Oil and Products Pipelines -- Conducted cost of service studies utilizing embedded costs, I.C.C. Valuation, and trended original cost. Development of computer models for cost of service studies utilizing the "Williams" (FERC 154-B) methodology. Performed alternative tariff designs, and dismantlement and restoration studies.

B. Railroads -- Analyses of costing studies using both embedded and marginal cost methodologies. Analyses of market dominance and cross-subsidization, including the implementation of differential pricing and inverse elasticity for various railroad commodities. Analyses of capital and operation costs required to operate "stand alone" railroads. Conducted cost of capital and revenue adequacy studies of railroads.

## III. Insurance Studies

Conducted and presented expert testimony relating to market structure, performance, and profitability by line and sub-line of business within specific geographic areas, e.g. by state. These studies have included the determination of rates of return on Statutory Surplus and GAAP Equity by line - by state using the NAIC methodology, and comparison of individual insurance company performance vis a vis industry Country-Wide performance.

Conducted and presented expert testimony relating to rate regulation of workers compensation, automobile, and professional malpractice insurance. These studies have included the determination of a proper profit and contingency factor utilizing an internal rate of return methodology, the development of a fair investment income rate, capital structure, cost of capital.

Other insurance studies have included testimony before the Virginia Legislature regarding proper regulatory structure of Credit Life and P&C insurance; the effects on competition and prices resulting from proposed insurance company mergers, maximum and minimum expense multiplier limits, determination of specific class code rate increase limits (swing limits); and investigation of the reasonableness of NCCI=s administrative assigned risk plan and pool expenses.

## IV. Anti-Trust and Commercial Business Damage Litigation

Analyses of alleged claims of attempts to monopolize, predatory pricing, unfair trade practices and economic losses. Assignments have involved definitions of relevant market areas geographic and product) and performance of that market, the pricing and cost allocation practices of manufacturers, and the economic performance of manufacturers' distributors.

Performed and provided expert testimony relating to market impacts involving automobile and truck dealerships, incremental profitability, the present value of damages, diminution in value of business, market and dealer performance, future sales potential, optimal inventory levels, fair allocation of products, financial performance; and business valuations.

## MEMBERSHIPS AND CERTIFICATIONS

Member, Association of Energy Engineers (1998)
Certified Rate of Return Analyst, Society of Utility and Regulatory Financial Analysts (1992)
Member, American Water Works Association
National Association of Business Economists
Richmond Association of Business Economists
National Economics Honor Society

# Puget Sound Energy
## Electric Cost of Service Summary
## (Income Taxes Calculated)

| Description | Total Company | Residential Sch 7 | Sec Volt Sch 24 (kW<50) | Sec Volt Sch 25 (kW>50 & <350) | Sec Volt Sch 26 (kW>350) | Pri Volt Sch 31/35/43 | Campus 40 | High Volt 46/49 | Choice/ Retail Wheeling Sch 448/449 | Lighting 50-59 | Firm Resale/ Special Contracts |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Rate Base | $3,771,145 | $2,187,562 | $448,620 | $455,963 | $269,815 | $206,780 | $78,165 | $54,959 | $33,967 | $31,295 | $4,020 |
| Firm Sales Revenue at Current Rates | $2,003,744 | $1,086,009 | $251,381 | $274,491 | $167,558 | $120,099 | $44,871 | $35,350 | $6,161 | $16,499 | $1,324 |
| Non-Firm Sales Revenue at Current Rates | $14,814 | $7,897 | $1,793 | $2,046 | $1,370 | $899 | $414 | $333 | $0 | $55 | $5 |
| Other Operating Revenue | $38,882 | $25,225 | $3,864 | $2,766 | $1,578 | $1,666 | $494 | $1,761 | $1,353 | $141 | $32 |
| Total Revenue at Current Rates | $2,057,440 | $1,119,132 | $257,038 | $279,302 | $170,507 | $122,665 | $45,780 | $37,445 | $7,514 | $16,695 | $1,361 |
| O&M Expenses | $1,398,698 | $770,029 | $168,592 | $182,139 | $119,696 | $81,223 | $35,982 | $28,501 | $1,667 | $10,086 | $782 |
| Depreciation Expense | $235,323 | $139,777 | $28,118 | $26,979 | $15,794 | $12,181 | $4,627 | $3,219 | $2,190 | $2,191 | $246 |
| Taxes Other than Income | $123,256 | $70,235 | $14,790 | $15,209 | $9,506 | $6,827 | $2,825 | $2,124 | $647 | $992 | $99 |
| Earnings Before Interest and Taxes | $300,164 | $139,091 | $45,538 | $54,975 | $25,510 | $22,433 | $2,346 | $3,601 | $3,010 | $3,426 | $234 |
| Interest Expense @ 3.38% | $127,465 | $73,940 | $15,163 | $15,412 | $9,120 | $6,989 | $2,642 | $1,858 | $1,148 | $1,058 | $136 |
| Taxable Income | $172,699 | $65,151 | $30,375 | $39,564 | $16,390 | $15,444 | -$296 | $1,743 | $1,862 | $2,369 | $99 |
| Income Taxes @ 40.2876% | $69,576 | $26,248 | $12,237 | $15,939 | $6,603 | $6,222 | -$119 | $702 | $750 | $954 | $40 |
| Operating Income | $230,587 | $112,843 | $33,301 | $39,036 | $18,907 | $16,211 | $2,465 | $2,898 | $2,260 | $2,472 | $195 |
| Income Requirement 8.56% | $322,810 | $187,255 | $38,402 | $39,030 | $23,096 | $17,700 | $6,691 | $4,705 | $2,908 | $2,679 | $344 |
| Income Deficiency | $92,223 | $74,412 | $5,101 | -$5 | $4,189 | $1,489 | $4,226 | $1,806 | $648 | $207 | $149 |
| Revenue Conversion Factor | 0.621262 | 0.621262 | 0.621262 | 0.621262 | 0.621262 | 0.621262 | 0.621262 | 0.621262 | 0.621262 | 0.621262 | 0.621262 |
| Revenue Deficiency | $148,444 | $119,776 | $8,211 | -$9 | $6,744 | $2,397 | $6,802 | $2,907 | $1,043 | $333 | $240 |
| Revenue Requirement | $2,205,884 | $1,238,908 | $265,249 | $279,293 | $177,250 | $125,062 | $52,582 | $40,352 | $8,557 | $17,028 | $1,602 |
| Current Revenue to Cost Ratio | 93.10% | 90.07% | 96.84% | 100.00% | 96.13% | 98.04% | 86.84% | 92.40% | 85.52% | 98.02% | 84.63% |
| Parity Ratio | 100% | 97% | 104% | 107% | 103% | 105% | 93% | 99% | 92% | 105% | 91% |
| PSE Proposed Increase | $148,444 | $90,906 | $15,782 | $11,488 | $14,026 | $7,540 | $3,896 | $2,959 | $516 | $1,036 | $296 |
| PSE Proposed Revenue | $2,205,884 | $1,210,038 | $272,820 | $290,790 | $184,532 | $130,205 | $49,676 | $40,404 | $8,030 | $17,731 | $1,657 |
| Proposed Rev. to Cost Ratio | 100.00% | 97.61% | 102.92% | 104.19% | 104.18% | 104.20% | 94.38% | 100.14% | 92.68% | 104.18% | 103.55% |

**Puget Sound Energy**
**Electric Residential Customer Costs**
**(Cost of Equity @ PSE Proposed)**

| | Residential | |
|---|---|---|
| **Gross Plant** | | |
| Meters | $69,876,077 | |
| Total Gross Plant | $69,876,077 | |
| **Depreciation Reserve** | | |
| Meters | -$21,622,858 | |
| Total Depreciation Reserve | -$21,622,858 | |
| **Total Net Plant** | $48,253,219 | |
| **Total Rate Base** | $48,253,219 | |
| **Operation & Maintenance Expenses** | | |
| Dist Oper - Meters | $1,104,914 | |
| Dist Oper - Cust Installations - Meters | $2,065,959 | |
| Meter Reading | $14,131,978 | |
| Records & Collections | $14,552,140 | |
| Total O & M Expenses | $31,854,991 | |
| **Depreciation Expense** | | |
| Meters @ 2.32% Depreciation Rate | $1,621,125 | 1/ |
| Total Depreciation Expense | $1,621,125 | |

**Revenue Requirement**

| | | Cost of Capital | | | |
|---|---|---|---|---|---|
| | | | PCT | Cost | WGHT Cost |
| Interest | $1,602,007 | Debt | 52.00% | 6.38% | 3.32% |
| Equity return | $2,501,447 | | | | |
| Income Tax @ 35% | $1,346,933 | Common | 48.00% | 10.80% | 5.18% |
| Revenue For Return | 5,450,387 | Total | 100.00% | | 8.50% |
| O & M Expenses | $31,854,991 | | | | |
| Depreciation Expense | $1,621,125 | | | | |
| Total Customer Revenue Requirement Before Gross up | $38,926,503 | | | | |
| Gross Up for Uncollect., WUTC Fee, and Excise Tax | 0.955800 | 2/ | | | |
| Total Customer Revenue Requirement | $40,726,619 | | | | |
| Number of Bills | 11,273,280 | | | | |
| Monthly Cost | $3.61 | | | | |

1/ Per Docket Number UE-072300 and testimony of John Story, page 53 in this case.
2/ Per Exhibit No.__(JHS-5), Page 6.03

**Puget Sound Energy**
**Electric Residential Customer Costs**
**(Cost of Equity @ Public Counsel Proposed)**

| | Residential | |
|---|---|---|
| **Gross Plant** | | |
| Meters | $69,876,077 | |
| Total Gross Plant | $69,876,077 | |
| **Depreciation Reserve** | | |
| Meters | -$21,622,858 | |
| Total Depreciation Reserve | -$21,622,858 | |
| **Total Net Plant** | $48,253,219 | |
| **Total Rate Base** | $48,253,219 | |
| **Operation & Maintenance Expenses** | | |
| Dist Oper - Meters | $1,104,914 | |
| Dist Oper - Cust Installations - Meters | $2,065,959 | |
| Meter Reading | $14,131,978 | |
| Records & Collections | $14,552,140 | |
| Total O & M Expenses | $31,854,991 | |
| **Depreciation Expense** | | |
| Meters @ 2.32% Depreciation | $1,621,125 | 1/ |
| Total Depreciation Expense | $1,621,125 | |

**Revenue Requirement**

| | | |
|---|---|---|
| Interest | $1,706,234 | |
| Equity return | $2,200,347 | |
| Income Tax @ 35% | $1,184,802 | |
| Revenue For Return | 5,091,383 | |
| O & M Expenses | $31,854,991 | |
| Depreciation Expense | $1,621,125 | |
| Total Customer Revenue Requirement Before Gross up | $38,567,499 | |
| Gross Up for Uncollect., WUTC Fee, and Excise Tax | 0.955800 | 2/ |
| Total Customer Revenue Requirement | $40,351,014 | |
| Number of Bills | 11,273,280 | |
| Monthly Cost | $3.58 | |

Cost of Capital

| | PCT | Cost | WGHT Cost |
|---|---|---|---|
| Debt | 52.00% | 6.80% | 3.54% |
| Common | 48.00% | 9.50% | 4.56% |
| Total | 100.00% | | 8.10% |

1/ Per Docket Number UE-072300 and testimony of John Story, page 53 in this case.
2/ Per Exhibit No.__(JHS-5), Page 5.03

**Puget Sound Energy**
**Natural Gas Residential Customer Costs**
**(Cost of Equity @ PSE Proposed)**

| | Residential | |
|---|---|---|
| **Gross Plant** | | |
| Meters | $44,051,233 | |
| Meter Installations | $124,909,209 | |
| House Regulators | $10,045,803 | |
| House Regulator Installations | $50,855,695 | |
| Total Gross Plant | $229,861,940 | |
| **Depreciation Reserve** | | |
| Meters | -$13,783,168 | |
| Meter Installations | -$20,843,925 | |
| House Regulators | -$3,920,243 | |
| House Regulator Installations | -$7,840,809 | |
| Total Depreciation Reserve | -$46,388,145 | |
| **Total Net Plant** | $183,473,795 | |
| **Total Rate Base** | $183,473,795 | |
| **Operation & Maintenance Expenses** | | |
| Oper Meter & House Reg | $5,951,528 | |
| Oper Customer Install Exp | $4,700,504 | |
| Maint Services | $4,484,263 | |
| Maint Meters & House Reg | $1,289,319 | |
| Meter Reading Expense | $10,813,853 | |
| Cust. Records & Collection Exp. | $10,623,857 | |
| Total O & M Expenses | $37,863,324 | |
| **Depreciation Expense** | | |
| Meters @ 2.73% | $1,202,599 | 1/ |
| Meter Installations @ 2.23% | $2,785,475 | 1/ |
| House Regulators @ 2.41% | $242,104 | 1/ |
| House Regulator Installations @ 2.79% | $1,418,874 | 1/ |
| Total Depreciation Expense | $5,649,052 | |

**Revenue Requirement**

| | | Cost of Capital | | | |
|---|---|---|---|---|---|
| | | | PCT | Cost | WGHT Cost |
| Interest | $6,091,330 | Debt | 52.00% | 6.38% | 3.32% |
| Equity return | $9,503,943 | | | | |
| Income Tax @ 35% | $5,117,508 | Common | 48.00% | 10.80% | 5.18% |
| Revenue For Return | $20,712,780 | Total | 100.00% | | 8.50% |
| O & M Expenses | $37,863,324 | | | | |
| Depreciation Expense | $5,649,052 | | | | |
| Total Customer Revenue Requirement Before Gross Up | $64,225,156 | | | | |
| Gross Up for Uncollectibles, WUTC Fees, and Excise Taxe | 0.95678 | 2/ | | | |
| Total Customer Revenue Requirement | $67,127,760 | | | | |
| Number of Bills | 8,178,984 | | | | |
| Monthly Cost | $8.21 | | | | |

1/ Per Docket Number UE-072300 and testimony of John Story, Page 53 in this case.
2/ Per Exhibit No.__(MJS-4), Page 4.02

**Puget Sound Energy**
**Natural Gas Residential Customer Costs**
**(Cost of Equity @ Public Counsel Proposed)**

| | Residential | |
|---|---|---|
| **Gross Plant** | | |
| Meters | $44,051,233 | |
| Meter Installations | $124,909,209 | |
| House Regulators | $10,045,803 | |
| House Regulator Installations | $50,855,695 | |
| Total Gross Plant | $229,861,940 | |
| **Depreciation Reserve** | | |
| Meters | -$13,783,168 | |
| Meter Installations | -$20,843,925 | |
| House Regulators | -$3,920,243 | |
| House Regulator Installations | -$7,840,809 | |
| Total Depreciation Reserve | -$46,388,145 | |
| **Total Net Plant** | $183,473,795 | |
| **Total Rate Base** | $183,473,795 | |
| **Operation & Maintenance Expenses** | | |
| Oper Meter & House Reg | $5,951,528 | |
| Oper Customer Install Exp | $4,700,504 | |
| Maint Services | $4,484,263 | |
| Maint Meters & House Reg | $1,289,319 | |
| Meter Reading Expense | $10,813,853 | |
| Cust. Records & Collection Exp. | $10,623,857 | |
| Total O & M Expenses | $37,863,324 | |
| **Depreciation Expense** | | |
| Meters @ 2.73% | $1,202,599 | 1/ |
| Meter Installations @ 2.23% | $2,785,475 | 1/ |
| House Regulators @ 2.41% | $242,104 | 1/ |
| House Regulator Installations @ 2.79% | $1,418,874 | 1/ |
| Total Depreciation Expense | $5,649,052 | |

**Revenue Requirement**

| | | Cost of Capital | | | |
|---|---|---|---|---|---|
| | | | PCT | Cost | WGHT Cost |
| Interest | $6,487,633 | Debt | 52.00% | 6.80% | 3.54% |
| Equity return | $8,366,405 | | | | |
| Income Tax | $4,504,987 | Common | 48.00% | 9.50% | 4.56% |
| Revenue For Return | $19,359,026 | Total | 100.00% | | 8.10% |
| O & M Expenses | $37,863,324 | | | | |
| Depreciation Expense | $5,649,052 | | | | |
| Total Customer Revenue Requirement Before Gross Up | $62,871,402 | | | | |
| Gross Up for Uncollectibles, WUTC Fees, and Excise Taxes | 0.95876 | 2/ | | | |
| Total Customer Revenue Requirement | $65,712,824 | | | | |
| Number of Bills | 8,178,984 | | | | |
| Monthly Cost | $8.03 | | | | |

1/ Per Docket Number UE-072300 and testimony of John Story, Page 53 in this case.
2/ Per Exhibit No.__(MJS-4), Page 4.02