

EXHIBIT NO. ___(CES-1T)
DOCKET NO. UE-06 ___/UG-06 ___
2006 PSE GENERAL RATE CASE
WITNESS: CALVIN E. SHIRLEY

BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

**WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION,**

Complainant,

v.

PUGET SOUND ENERGY, INC.,

Respondent.

Docket No. UE-06 ___
Docket No. UG-06 ___

**PREFILED DIRECT TESTIMONY (NONCONFIDENTIAL) OF
CALVIN E. SHIRLEY
ON BEHALF OF PUGET SOUND ENERGY, INC.**

FEBRUARY 15, 2006

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21

PUGET SOUND ENERGY, INC.

**PREFILED DIRECT TESTIMONY (NONCONFIDENTIAL) OF
CALVIN E. SHIRLEY**

CONTENTS

I. INTRODUCTION 1

II. PSE’S PROPOSED ELECTRIC ENERGY EFFICIENCY INCENTIVE
MECHANISM 3

 A. An Incentive Mechanism Would Promote Sustained and Increased
 Energy Efficiency Investments and Better Align Company and
 Shareholder Interests..... 3

 B. PSE’s Proposed Incentive Mechanism 7

III. NEW ELECTRIC DEMAND RESPONSE PROGRAM OPTIONS 20

 A. Demand Response Programs May Help Reduce Future Power
 Costs and Electric System Investment Costs 20

 B. Proposed Enhancements to PSE’s Existing Demand Response
 Buy-Back Program..... 22

 C. Proposed New Demand Response Programs 23

 1. The Demand Response Time-Of-Day Programs. 24

 2. The Direct Load Control Programs 28

 D. Proposed Timeline, Evaluation Methodology and Costs..... 30

IV. CONCLUSION..... 31

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17

PUGET SOUND ENERGY, INC.

**PREFILED DIRECT TESTIMONY (NONCONFIDENTIAL) OF
CALVIN E. SHIRLEY**

I. INTRODUCTION

Q. Please state your name, business address, and position with Puget Sound Energy, Inc.

A. My name is Calvin E. Shirley. My business address is 10885 N.E. Fourth Street Bellevue, WA 98004. I am the Vice President Energy Efficiency Services with Puget Sound Energy, Inc. (“PSE” or “the Company”).

Q. Have you prepared an exhibit describing your education, relevant employment experience, and other professional qualifications?

A. Yes, I have. It is Exhibit No. ___(CES-2).

Q. What are your duties as Vice President Energy Efficiency Services for PSE?

A. My responsibilities include oversight of: (i) the Company’s portfolio of energy efficiency programs including planning and implementation; (ii) Green Power and Small-Scale Customer Renewable programs; (iii) services to the builder community; and (iv) a variety of customer focused services such as Contractor

1 Referral Services, Personal Energy Advisory Hotline, Hot Water Tank Leasing
2 and Back-Up Generator services.

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

4 A. My testimony first addresses the incentive mechanism that PSE is proposing in
5 this case to better align the interests of the Company's customers and its
6 shareholders with respect to the Company's efforts to promote electric energy
7 efficiency. I describe the disincentives that currently exist to investments in
8 energy efficiency. I then present a new mechanism that would reward the
9 Company for meeting or exceeding electric energy savings targets, as well as
10 assess a penalty for failure to achieve minimum target levels of energy savings,
11 beginning in 2007. PSE has designed its proposed incentive mechanism such that
12 it would modify and enhance, rather than replace, the penalty-only mechanism
13 established in the Company's 2001 general rate case Settlement Terms for
14 Conservation, which is part of the Twelfth Supplemental Order of Docket
15 Nos. UE-011570 and UG-011571 (the "2001 Conservation Settlement").¹

16 My testimony then describes the electric demand response measures that PSE is
17 proposing in this case. Demand response programs are targeted to reduce power
18 costs and transmission and distribution system costs by reducing customers' use
19 of electricity at key times of the day or on especially cold days when the demand

¹ A copy of the 2001 Conservation Settlement Agreement is provided as Exhibit
No. ___(CES-3).

1 for energy is at its highest. I describe modifications that PSE is proposing to its
2 existing buy-back program, Schedule 93, in order to increase the level of
3 customer participation in that program. I also present a menu of new demand
4 response pilot programs for which the Company seeks approval and funding in
5 this case.

6 **II. PSE'S PROPOSED ELECTRIC ENERGY EFFICIENCY**
7 **INCENTIVE MECHANISM**

8 **A. An Incentive Mechanism Would Promote Sustained and Increased**
9 **Energy Efficiency Investments and Better Align Company and**
10 **Shareholder Interests**

11 **Q. Why is PSE requesting that the Commission approve an energy efficiency**
12 **incentive mechanism?**

13 A. PSE has successfully operated a robust portfolio of energy efficiency programs in
14 response to previous Commission mandates and least cost planning guidance.
15 The 2001 Conservation Settlement requires that PSE's energy efficiency
16 programs be designed to achieve all savings that are cost-effective to the
17 Company, and economically feasible for consumers. In order to avoid a penalty
18 assessment, the Company must achieve minimum threshold energy savings goals,
19 as determined with a stakeholder advisory committee called the Conservation
20 Resources Advisory Group ("CRAG"), which is described later in my testimony.
21 PSE has never fallen below this threshold energy savings goal and has never

1 incurred a penalty under the existing mechanism since it became effective in
2 September 2002.

3 The Company's 2003 and 2005 Least Cost Plans demonstrated that there is
4 greater value in acquiring electric energy efficiency at an accelerated pace rather
5 than a flat, steady rate. As a result, PSE significantly ramped up its energy
6 efficiency programs beyond the minimum penalty threshold. In 2004 and 2005,
7 the Company achieved an average of 19.7 aMW savings per year from its electric
8 programs, well in excess of the penalty threshold of 11.6 aMW per year.

9 Under the terms of the 2001 Conservation Settlement, the Company is currently
10 assessed a penalty if it does not achieve its savings targets, but there is no reward
11 for meeting or exceeding those goals. Thus, the Company has no incentive to
12 more aggressively pursue energy efficiency. Furthermore, reductions in the
13 volume of energy sales due to energy efficiency programs results in lost revenue
14 to the Company, which discourages expanded energy efficiency efforts. Despite
15 these disincentives, the Company has been responsive to stakeholders who have
16 urged the Company to undertake aggressive energy efficiency efforts. The
17 Company has shown good faith in striving to achieve the stretch energy efficiency
18 goals described above.

19 PSE now seeks to offset these disincentives by proposing a mechanism that
20 encourages continued outstanding performance of its electric energy efficiency
21 programs over the long term. It is the Company's belief that a regulatory

1 mechanism that emphasizes meaningful incentives to achieve desirable outcomes
2 is more effective than a mechanism that focuses on penalties for not doing
3 enough. A performance-based incentive mechanism for energy efficiency would
4 provide positive reinforcement for the Company to continue to aggressively
5 pursue low cost, clean alternatives to traditional fossil fuel generation. It would
6 also encourage innovation to develop and deliver new energy efficiency measures
7 as they emerge. The Company is not seeking separate recovery of lost margins or
8 revenues from electric energy efficiency in this proceeding.

9 **Q. How would an incentive mechanism benefit PSE's customers?**

10 A. The benefits of energy efficiency to customers are widely accepted and include
11 reduced energy bills, lower rates from reduced power costs, and reduced air
12 emissions from fossil-fired generation. Expanded energy efficiency efforts,
13 encouraged by this proposed incentive mechanism, have the potential to further
14 reduce energy costs and adverse environmental impacts for customers.
15 Additionally, energy efficiency can help reduce the generation resource additions
16 that would otherwise be needed to meet growing load.

17 **Q. Has the Commission previously recognized and addressed the regulatory**
18 **disincentives to energy efficiency mentioned above?**

19 A. In 1990, the Commission issued a Notice of Inquiry: Examining Whether there
20 are Regulatory Barriers to Least Cost Planning for Electric Utilities (Docket

1 No. UE-900385). The purpose of the NOI was to examine whether the existing
2 regulatory structure contained disincentives to the pursuit of least-cost generation
3 and energy efficiency resources, and possible alternative regulatory structures.

4 The Commission identified three possible disincentives to energy efficiency:
5 (1) lack of earnings on investment; (2) regulatory lag on recovery of costs
6 between rate cases (currently addressed by PSE's conservation rider); and (3) lost
7 revenue through lower sales.

8 As part of a package of experimental regulatory modifications designed to address
9 the issues raised in the NOI, the Commission approved a cost recovery and
10 revenue decoupling mechanism in 1991 called the Periodic Rate Adjustment
11 Mechanism ("PRAM"), in Docket Nos. UE-901183-T and UE-901184-P), and an
12 energy efficiency performance mechanism in 1992 in Docket No. UE-910689.

13 The incentive mechanism was approved only for programs implemented in 1991
14 and awarded the Company a total incentive of approximately \$6.9 million.

15 **Q. How would the Company's proposal impact the 2001 Conservation**
16 **Settlement?**

17 A. The Company's proposed incentive mechanism, as described in my testimony and
18 related exhibits, would replace Section M, paragraphs 39 and 43, of the 2001
19 Conservation Settlement with respect to PSE's electric energy efficiency
20 program. Paragraph 44 of Section M would also be amended to include reporting

1 of incentives as well as penalties. The Company proposes to leave the other
2 provisions of the 2001 Conservation Settlement intact.

3 **Q. Would the proposed incentive mechanism apply to natural gas energy**
4 **efficiency?**

5 A. No, PSE does not propose a new performance incentive mechanism for gas
6 efficiency programs. The existing penalty mechanism established by the 2001
7 Conservation Settlement would remain in effect for gas efficiency programs. The
8 Company is proposing a decoupling mechanism in this case as the most
9 appropriate method to address the disincentives to natural gas energy efficiency,
10 as described in the testimony of Mr. Ronald Amen, Exhibit No. ___(RJA-1T).

11 **B. PSE's Proposed Incentive Mechanism**

12 **Q. Please describe the proposed incentive mechanism.**

13 A. The Company proposes a mechanism that will award an incentive equal to a
14 percentage of total annual electric program costs under the conservation tariff
15 rider. The amount of energy savings achieved would be the criterion for
16 determining the incentive percentage to be awarded, provided that total energy
17 savings exceed specific thresholds. Conversely, a penalty will be assessed equal
18 to a fixed dollar amount per kWh applied to the difference between a baseline
19 level of savings and the total savings achieved, if total savings are below specific

1 threshold levels. The threshold levels of savings for assessing a reward or penalty
2 would be established against a baseline target.

3 Exhibit No. ___(CES-4) shows the proposed incentive mechanism in more detail.
4 The proposed mechanism has three levels of incentive (bands A-C in Exhibit
5 CES-4) and three levels of penalty (bands E-G), as well as a “dead band” (band
6 D) where no incentive or penalty is applied. As can be seen, the level of incentive
7 or penalty varies within different bands, or ranges, of energy savings achieved.

8 Under the proposed mechanism, the Company would receive incentive payments
9 on a sliding scale for achieving savings above the baseline target. The proposed
10 incentives range from 10% to 20% of annual electric program costs under the
11 tariff rider. Annual program costs would include all costs associated with
12 planning, implementation, evaluation, and administration of electric energy
13 efficiency programs collected under the tariff rider. The Company would be
14 assessed a penalty on a sliding scale for achieving savings below 80% of the
15 baseline target. The penalty assessment would be 4-6 cents per kWh of difference
16 (or deficit) between the baseline target and actual savings achieved. The dead
17 band is established between 80% and 100% of the baseline target. Additional
18 details regarding the potential incentives and penalties, calculation
19 methodologies, and reporting are described below.

1 **Q. How would the Baseline Target level of energy savings be determined?**

2 A. The 2001 Conservation Settlement states that “The annual savings target for
3 future years shall be informed by the conservation supply curves ... and future
4 modifications to the avoided cost analysis for ratemaking purposes, with review
5 from the Advisory Committee.” Consistent with the provisions of the 2001
6 Conservation Settlement and current practice, PSE therefore proposes to set the
7 annual baseline target savings for this incentive mechanism with review and input
8 from the CRAG, taking into consideration the results of conservation supply
9 curve analysis in the Company’s most recent Least Cost Plan. Program cost
10 effectiveness and other program implementation considerations would also be
11 considered when setting the baseline target.

12 For 2007, the Company proposes that the baseline target be set at 16.5 average
13 megawatts. This value is 50% of the two-year target of 33 aMW for 2006 and
14 2007, established by the Company and the CRAG to avoid a penalty under the
15 current mechanism. Starting in 2008, the annual baseline target would be set
16 through the process described above.

17 **Q. Are there any conditions or restrictions placed on the level of incentive or**
18 **penalty?**

19 A. The 2001 Conservation Settlement states, “In general each individual energy
20 efficiency program shall be designed to be cost-effective.” Therefore, individual
21 programs must be cost-effective or, for pilot programs, show the potential to be

1 cost-effective, in order for the energy savings to be counted toward an incentive.
2 Programs are deemed cost-effective if the ratio of total benefits to total costs is
3 greater than 1.0, as determined by both the Total Resource Cost and Utility Cost
4 tests. Incentive and penalty amounts would not be included in any calculations of
5 program cost-effectiveness.

6 The tariff rider program expenses to be used in the incentive calculation would
7 not include expenses for net metering (which is for small-scale renewable energy
8 generation rather than energy efficiency); nor the amount of any projected
9 incentive mechanism payment collected through the rider; nor the amount of any
10 true-up adjustments to the rider including incentives or penalties incurred in
11 previous years.

12 The Company will continue to work with the Conservation Resources Advisory
13 Group ("CRAG") to set energy savings targets and budgets, as well as to review
14 technical assumptions and analyses, as stipulated in the 2001 Conservation
15 Settlement. The Company will also inform the members of the CRAG if it
16 projects spending more than 120% or less than 80% of its average annual energy
17 efficiency budget as required by the 2001 Conservation Settlement.

18 **Q. What is the CRAG?**

19 A. PSE's CRAG was formally established in 2002, pursuant to the 2001
20 Conservation Settlement. The CRAG's specific purpose is to work with PSE in
21 the development of energy efficiency targets and budgets, as well as technical

1 review of key data and assumptions. The CRAG participates in the development
2 of the Company's energy efficiency programs through a series of formal
3 meetings. PSE generally seeks consensus agreement of CRAG members with
4 respect to such issues. Program reports on energy efficiency must be provided to
5 the CRAG as well as the Commission at least semi-annually. The Company must
6 also inform CRAG members if projections indicate that the Company will expend
7 more than 120% or less than 80% of its annual conservation budgets.

8 **Q. Who are the CRAG members?**

9 A. The CRAG consists of ratepayer representatives as well as regulators and energy
10 efficiency policy organizations, including the following groups:

- 11 • Washington Utilities and Transportation Commission Staff
- 12 • Public Counsel, Attorney General's Office
- 13 • NW Energy Coalition and Natural Resources Defense Council
- 14 • Energy Project (representing Low Income Agencies)
- 15 • Washington State Department of Community, Trade and Economic
16 Development
- 17 • Northwest Power and Conservation Council
- 18 • Industrial Customers of Northwest Utilities (ICNU)
- 19 • Northwest Industrial Gas Users (NWIGU)
- 20 • Customer representatives from commercial, industrial and
21 institutional sectors (Microsoft, Kemper Development, and King
22 County have periodically attended)

1 Other interested parties may attend meetings (for example, the Northwest Energy
2 Efficiency Council attends regularly), but are not considered CRAG members.

3 **Q. Would the proposed incentive mechanism be applied on an annual basis?**

4 A. Yes, incentives or penalties would be calculated on an annual basis, based on the
5 results achieved in each calendar year. Energy savings targets and budgets would
6 be set on an annual basis, rather than on a cumulative two-year basis, as is
7 currently done. The baseline target and incentive or penalty calculation would be
8 filed annually with the Commission. The Company proposes to continue to file
9 its energy efficiency program tariffs every two years, consistent with its resource
10 planning cycle.

11 The Company proposes to file its calculation of the results of the incentive
12 mechanism as part of its annual electric conservation tariff rider filing, and also in
13 the second of its regular semi-annual reports to the Commission on energy
14 efficiency program results (filed by February 15), which provides year-end
15 results. In addition to the energy savings and costs currently reported, the report
16 would also include cost-effectiveness results and the amount of incentive or
17 penalty for which the Company is eligible.

1 **Q. Why is the Company proposing this particular mechanism rather than some**
2 **other incentive mechanism?**

3 A. In this Commission's 1990 Notice of Inquiry "Examining Whether There Are
4 Regulatory Barriers to Least Cost Planning for Electric Utilities" (Docket
5 No. UE-900385), the Commission identified four general principles that should
6 form the basis for evaluating any proposal for a new type of regulation: (1) it
7 must be measurable; (2) it must be reasonably simple to administer; (3) it must be
8 intuitive enough to allow a straightforward explanation to customers; and (4) it
9 must be an improvement, on balance, over the current method of regulation. The
10 Company believes its proposal is consistent with each of these principles.

11 **Q. Please describe how PSE's incentive mechanism meets the principle that it**
12 **should be measurable.**

13 A. PSE's proposed incentive mechanism is based on three critical elements:
14 (1) program energy savings, (2) program costs, and (3) cost effectiveness. These
15 elements are already measured by the Company. The Company already sets
16 targets with CRAG input and provides these projections of energy savings, costs,
17 and cost effectiveness by program as supporting documentation to its energy
18 efficiency tariff filings with the Commission. Actual energy savings and costs are
19 currently reported to the Commission on a semi-annual basis. Actual program
20 cost effectiveness is not currently reported to the Commission, but could easily be
21 included in the existing semi-annual Commission report.

1 **Q. Please describe why PSE's incentive mechanism would be simple to**
2 **administer.**

3 A. The entire mechanism can be easily and unambiguously calculated and reviewed
4 using existing processes. The key elements of the mechanism, identified above,
5 would be established through the Company's existing resource planning process
6 and the provisions for target setting, cost-effectiveness analysis, and technical
7 review by an Advisory Committee of stakeholders (i.e., the CRAG) contained in
8 the 2001 Conservation Settlement. No new, additional regulatory processes
9 would need to be created.

10 **Q. Please describe why PSE's incentive mechanism is intuitive and easily**
11 **explained to customers.**

12 A. The proposed mechanism works in a very clear and straightforward manner. The
13 Company would receive a financial incentive or penalty that is directly tied to
14 program performance, as measured by the amount of energy savings achieved
15 cost-effectively. The amount of incentive actually paid would then be based on
16 two simple metrics: the energy savings and costs associated with those programs.
17 Costs would be controlled by the requirement that all programs must be cost-
18 effective.

1 **Q. In what way would PSE's incentive mechanism be an improvement over the**
2 **current method of regulating energy efficiency programs?**

3 A. PSE's proposal addresses the disincentives discussed previously in my testimony,
4 which result in misalignment of customer and shareholder interests. The primary
5 advantages offered by the proposed incentive mechanism are summarized below.

6 It:

- 7 • Sends the proper signal to aggressively pursue energy efficiency in
8 order to reduce power costs, adverse environmental impacts for
9 customers, and the need for new generation resources.
- 10 • Requires the incentive to be directly related to program
11 performance (i.e., energy savings).
- 12 • Strikes a balance between energy savings, program costs, and cost
13 effectiveness.
- 14 • Aligns the timing of a reward or penalty with the time frame of
15 Company savings and expenditures.
- 16 • Retains key provisions from the 2001 Conservation Agreement,
17 including the tariff rider cost recovery mechanism, cost
18 effectiveness methodology, target setting and measurement
19 approach, and stakeholder advisory group oversight.

20 **Q. Please explain specifically how an incentive or penalty would be calculated**
21 **under the proposed mechanism.**

22 A. Calculation of an incentive or penalty is performed using three basic steps:

- 23 1. Evaluate the cost-effectiveness of electric efficiency programs.
24 For example, Exhibit No. ___(CES-5) shows that the benefit-cost
25 ratios for the Total Resource Cost (TRC B/C) and Utility Cost (UC
26 B/C) tests are greater than 1.0 for all 2006-2007 programs
27 individually and collectively if stretch targets are achieved.

1 2. Determine the applicable energy savings threshold “band” (actual
2 energy savings as a percentage of the baseline target, from Exhibit
3 No. ___(CES-4). As described previously, there are three
4 incentive bands, three penalty bands and a dead band. If achieved
5 savings were 20 aMW and the baseline target was 16.5 aMW, then
6 achieved savings equals 121% of the baseline target, rounded to
7 the nearest percent. Thus, the amount of achieved savings falls
8 into band B of the incentive mechanism, as shown in Exhibit
9 No. ___(CES-4).

10 3. Calculate the dollar amount of incentive or penalty using the
11 incentive or penalty factors applicable to that energy savings band.
12 The incentive factor for band B, per Exhibit No. ___(CES-4), is
13 15% of annual electric program costs under the conservation tariff
14 rider.

15 Exhibit No. ___(CES-6) describes the calculation methodology in more detail.

16 **Q. How will the Company measure the level of actual energy savings achieved?**

17 A. The Company, in collaboration with the CRAG, has developed a detailed set of
18 program measurement protocols for measuring energy savings. Consistent with
19 the 2001 Conservation Settlement, these protocols utilize data from the Regional
20 Technical Forum whenever possible. All savings with respect to the incentive
21 mechanism will be measured using the same protocols used to support PSE’s
22 most recent Energy Efficiency program tariff filing. No after-the-fact adjustments
23 to program energy savings will be applied, consistent with current practices.
24 These protocols are fully described in Appendix D, Program Measurement &
25 Evaluation Plan dated November 29, 2005, associated with the Company’s 2006 -
26 2007 conservation tariff filing (Docket No. UE-051780, Advice No. 2005-47). A
27 copy is provided as Exhibit No. ___(CES-7).

1 **Q. Describe the Total Resource Cost and Utility Cost tests of cost-effectiveness.**

2 A. The Total Resource Cost test was established as the primary measure of program
3 cost effectiveness by the Commission in its First Supplemental Order to Docket
4 No. UE-920630, which states: “Unless and until a different measure is approved,
5 the cost effectiveness of conservation programs should be calculated on a total
6 resource cost basis.” Additionally, PSE evaluates programs using the Utility Cost
7 test.

8 The Total Resource Cost Test (“TRC Test”) measures the net value of energy
9 efficiency programs to society as a whole. The TRC Test determines whether the
10 total benefits, including energy and any quantifiable non-energy benefits, exceed
11 total costs including those incurred by PSE, customers, and any other contributing
12 party.

13 The Utility Cost Test (“UC Test”) measures the net value of energy efficiency
14 programs to the sponsoring utility. The UC Test demonstrates whether the utility
15 electricity savings benefits exceed the costs incurred by the utility.

16 The calculation methodology and application to stretch goals for PSE’s 2006 and
17 2007 energy efficiency programs is fully described in Appendix C, Program Cost
18 Effectiveness, as revised December 21, 2005, associated with the Company’s
19 2006 - 2007 conservation tariff filing (Docket No. UE-051780, Advice No. 2005-
20 47). A copy is provided as Exhibit No. ___(CES-5).

1 **Q. What electric efficiency programs does the Company plan to offer?**

2 A. Descriptions of all the Company's energy efficiency programs for 2006 and 2007
3 are found in Appendix A, Program Descriptions, as revised December 21, 2005,
4 which were included with the Company's 2006 - 2007 conservation tariff filing
5 (Docket No. UE-051780, Advice No. 2005-47). A copy is provided as Exhibit
6 No. ___(CES-8).

7 **Q. How will the proposed incentive mechanism be applied in 2007?**

8 A. Application of the proposed mechanism to 2007 is complicated somewhat by the
9 fact that it is the second year of the 2006-2007 program planning and tariff cycle.
10 Energy savings targets were established on a two-year basis, rather than annually.
11 PSE is sensitive to any potential concerns by stakeholders that program efforts
12 will be shifted from 2006 to 2007 to take advantage of a possible incentive
13 payment.

14 PSE proposes to resolve this issue in the following manner. All the provisions of
15 the proposed incentive mechanism will apply to the Company's 2007 electric
16 energy efficiency program performance. However, the Company must achieve at
17 least 16.5 aMW of energy savings in 2006 to be eligible for any incentive in 2007.
18 The 2006 savings requirement ensures that the two-year target of 33 aMW
19 previously established by PSE and the CRAG would be achieved before any
20 incentive is paid.

1 **Q. How would the funds for an incentive be collected?**

2 A. PSE proposes to introduce new electric tariff Schedule 121, which would
3 implement the collection of incentives or penalties through the existing electric
4 conservation tariff rider, Schedule 120. The calculation would be a projection of
5 the incentive or penalty amount based on a projection of the amount of annual
6 conservation the Company expects to achieve relative to least cost plan guidance
7 and the projected annual budget eligible for recovery under Schedule 120. After
8 the first year (2007), subsequent annual calculations will include a true-up to the
9 actual level of the past year's projected incentive or penalty, based on actual
10 energy savings and expenditures. The incentive and penalty bands and factors
11 previously described in my testimony and in Exhibit No. ___(CES-4) would be
12 used to determine the dollar amount of incentive or penalty for the year. The
13 amount of incentive or penalty collected through the rider would be adjusted for
14 applicable federal, state, and local taxes. Schedule 121 would be filed with the
15 Commission on an annual basis, in conjunction with Schedule 120.

1 III. NEW ELECTRIC DEMAND RESPONSE
2 PROGRAM OPTIONS

3 A. Demand Response Programs May Help Reduce Future Power Costs
4 and Electric System Investment Costs

5 Q. Is the Company proposing any demand side management initiatives beyond
6 the incentive mechanism described above?

7 A. Yes. The Company has submitted with this rate case filing proposed revisions to
8 existing electric tariff Schedule 93 and several new voluntary pilot programs that
9 are designed to offer customers a “menu” of demand-response options
10 specifically targeted toward reducing winter peak electric demand. The electric
11 revenue requirement that PSE is requesting in this case includes costs associated
12 with customer education and recruitment, program operation, and evaluation of
13 results for these options.

14 Q. Why is the Company proposing to pilot these types of programs?

15 A. Demand-response programs can be used to (i) reduce the need for new peak
16 generation resources, (ii) address transmission and distribution system constraints
17 if targeted at specific geographic areas, and (iii) reduce utility customer exposure
18 to high market prices during critical peak hours. Reducing demand during a
19 relatively small number of peak hours can help reduce rates by reducing utility
20 power costs during those hours, when costs may be much higher than the rest of
21 the year.

1 Other regions, notably California and the Northeast, have extensive experience
2 operating demand response programs, although the focus has been on reducing
3 summertime peaks triggered by hot weather rather than cold weather winter
4 peaks. PSE's previous experience with demand response programs was during the
5 2000-2001 West Coast energy market price spike, which peaked in the summer,
6 not at the time of the winter peak loads typical of the Pacific Northwest. Since
7 that time, PSE has conducted assessments of maximum potential peak reductions
8 from different demand response strategies as part of its least cost planning
9 process. The Company has also been actively participating in the BPA Non-
10 Wires Solutions Roundtable, a collaborative group of utilities and other
11 stakeholders looking at alternatives to the construction of new transmission lines,
12 including demand response programs.

13 In its 2005 Least Cost Plan (Chapter XVII), the Company indicated to the
14 Commission that it intended to explore the feasibility of implementing one or
15 more demand-response pilots within the next two years. The proposed voluntary
16 pilot programs described below are part of the Company's commitment to that
17 goal, and are part of the Company's effort to provide for its peak resource needs.
18 These pilots are intended to test a variety of demand response strategies in order
19 to gain implementation experience and information on (i) customer participation
20 in voluntary programs, (ii) costs to recruit and communicate with customers and
21 (iii) the magnitude of expected load reductions. Such information is necessary in

1 order to determine the practical feasibility and cost-effectiveness of expanding
2 these programs in the future.

3 **B. Proposed Enhancements to PSE's Existing Demand Response Buy-**
4 **Back Program**

5 **Q. Please describe PSE's existing buy-back program.**

6 A. Since the year 2001, PSE has offered a buy-back program to customers in the
7 form of Schedule 93. The current program gives customers a market-based price
8 signal to curtail electric loads during key time periods for a share of the avoided
9 costs. This tariff allows the Company to pay participating customers a percentage
10 of the current market price of electricity in return for the customer shedding a
11 contracted amount of load.

12 **Q. Why is the Company proposing changes to its buy-back program in this**
13 **case?**

14 A. PSE's proposed modifications to this existing program represent an effort to
15 increase customer participation. Changes to Schedule 93 include increasing the
16 credit to customers for curtailed energy and lowering of the minimum threshold
17 of curtailable load for customers to be eligible for this optional service. The
18 maximum level of customer credit for curtailment is proposed to be increased
19 from the current level of 50% up to 70% of the price of energy determined by the

1 Company. The minimum curtailable load for a customer to be eligible to
2 participate in this program is proposed to be decreased from 500 kW to 350 kW.

3 The modified buy-back program would also include funding to pilot:

4 (i) additional marketing to get more customers to volunteer to be on the current
5 Schedule 93, and (ii) a focused recruiting effort to get more customers from
6 selected target customer groups to sign-up and participate in the buy-back
7 program.

8 **C. Proposed New Demand Response Programs**

9 **Q. Please describe the new types of programs that PSE is proposing for its**
10 **demand response “menu”.**

11 A. PSE is proposing to develop two demand response pricing programs and two
12 direct load control programs.

13 **Q. What is PSE’s proposed timing for launching these pilot programs?**

14 A. PSE anticipates launching these pilots in 2007 and testing events during the
15 winter of 2007-2008. PSE proposes to develop detailed program designs and
16 implementation plans by the summer of 2007, with input from Commission staff
17 and stakeholders and based on the funding level authorized by the Commission in
18 this proceeding.

1 **1. The Demand Response Time-Of-Day Programs.**

2 **Q. Please generally describe the proposed demand response time-of-day**
3 **programs.**

4 A. PSE is proposing to offer two different types of programs to encourage customers
5 to purchase electricity efficiently at key points in time. These time-of-day
6 programs will seek to test the effectiveness and efficiency of soliciting customers
7 to join a voluntary program and measure their participation and response to price
8 signals that are provided to these customers during key time periods, such as peak
9 demand times during the day, and on days when demand is expected to peak or
10 where there are potential transmission or distribution constraints. The programs
11 will also test various customer notification methods, such as phone messaging, e-
12 mail notification, and other innovative technologies.

13 **Q. What is the purpose of proposing demand response time-of-day programs?**

14 A. The purpose of these pilots is to test the effect of price signals and community
15 stewardship toward load reduction during peak time periods. The two pilots PSE
16 is proposing are designed to gauge the type, volume and cost of the marketing
17 activity required to gain interest and participation in these types of pilot programs.
18 The second objective is to determine the change in peak energy usage that can be
19 expected by giving customers a price signal or a community-based incentive.

1 **Q. Please describe the first new demand response time-of-day program.**

2 A. The first time-of-day program will be a voluntary critical peak pricing pilot
3 program included as new tariff Schedule 102. The program will target
4 approximately 1,000 residential customers within a specified geographic area.
5 Customer education and information will play a significant role in this program.
6 Customers that volunteer to be on the program will receive usage information and
7 be charged in four daily time periods defined in Schedule 102: Morning Peak,
8 Mid-Day, Evening Peak and Economy. This usage and billing information would
9 be coupled with other educational information about the program and possible
10 ways to reduce peak loads.

11 Most days of the year, customers would be billed at a base time-of-use rate.

12 During specially designated “Event Days” the pricing during the two peak time
13 periods on those Event Days will be higher than that of the other days of the year.

14 In order to effect a response in customer usage pattern, we are proposing a known
15 and fixed price during those “Super Peak” time periods on those event days. That
16 price will be approximately 5 times higher than the base Morning Peak and
17 Evening Peak time-of-use prices. Other than the Super-Peak prices on event
18 days, prices will be generally less than the flat Schedule 7 rate. The specific
19 design of this rate is discussed in the testimony of Mr. James Heidell, Exhibit
20 No. ___(JAH-1T)

1 **Q. What might trigger designation of an “Event Day”?**

2 A. The Company may call Event Days in anticipation of cold weather, high
3 wholesale prices, or possible transmission and distribution constraints. The
4 Company may also call Event Days for the purpose collecting information to
5 evaluate the pilot. The pilot season will be from November through March, with
6 no more than ten Event Days called during the five-month winter season.
7 Customers who volunteer for the program will be asked to commit to
8 participating for an entire winter season.

9 **Q. Would these customers be prepared to respond to “Event Days”?**

10 A. Leading up to the winter pilot season, customers will receive usage data on their
11 bill that corresponds to the four daily time periods, as well as possible ways to
12 reduce energy use during event days and other information about the program.
13 This will help educate customers on their energy usage patterns and will help
14 prepare them for the Event Days.

15 **Q. Please describe the second new demand-response time-of-day program.**

16 A. The second time-of-day pilot program will be a community-based incentive
17 program. The program will target a selected community of a certain size and
18 monitor their collective reduction of peak load as an entire community rather than
19 at the individual meter. A community-wide incentive will be awarded to the
20 community for participation. The specific incentive will vary depending on the

1 community chosen for the pilot. The incentive may be a contribution to a clean
2 energy project, park improvements, community artwork, scholarships, or another
3 meaningful incentive. After customers in the community have been educated
4 regarding peak energy usage, up to ten Event Days will be called during the
5 winter season. On Event Days, members of the community will be asked to
6 voluntarily reduce their load during peak demand time periods of the day for no
7 more than 8 hours per day. Customers in the community would remain on their
8 current rate, so there would be no direct price signal.

9 **Q. How will the Company select which community to offer this pilot program?**

10 A. Customer education and communication will be crucial to the success of this pilot
11 program. The Company will be testing a variety of communication technologies
12 and methods for informing and notifying members of the community of the Event
13 Days, as well as providing feedback to customers regarding how much the
14 community was able to reduce load during the peak hours on those event days.
15 Thus, PSE will use its relationships with schools, community organizations, and
16 local media, as well as technical considerations with local metering and
17 distribution system infrastructure, to select the community for the pilot.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17

2. The Direct Load Control Programs

Q. What are direct load control programs?

A. Direct load control programs would permit the Company to directly control residential electric space and water heating and a variety of commercial customer loads. This would be accomplished through installing special thermostats or other load control devices that would effectively permit the Company to turn furnaces, water heaters and other equipment off during key time periods, such as peak demand hours during the day, and on key event days when load needs to be curtailed.

Q. What is the purpose of proposing direct load control programs as part of the Company's demand response menu?

A. The purposes of the direct load control pilot programs are: (i) to test the cost of customer recruitment for this type of voluntary program, (ii) to determine the cost and operational effectiveness of installing premium thermostats or other load control devices in the participants' homes and businesses, (iii) to evaluate the amount of load curtailment achieved by each household or business on Company-controlled event days, and (iv) to evaluate customer reaction to load curtailment.

1 **Q. Please describe the direct load control programs in the portfolio?**

2 A. The Company is proposing to pilot two direct load control programs. These two
3 direct load control programs were developed based on responses that were
4 submitted to the Company's 2005 Energy Efficiency Request for Proposals for
5 Peak Load Reduction in Kitsap and Jefferson Counties, but there is no
6 commitment to accept any specific proposal.

7 The first direct load pilot program will target commercial customers in selected
8 industries by controlling curtailment of specific end uses, such as heating,
9 lighting, water heaters, water pumps and other business processes. Participating
10 customers would be offered an incentive in return for allowing the Company to
11 install and operate load control equipment. As with the pricing programs, PSE
12 will curtail loads for no more than 10 Event Days per winter curtailment season.

13 The second load control pilot program will target space heating and water heating
14 in residential single-family homes. Approximately 100 residential customers will
15 be sought to volunteer for installation of remotely operated load control devices
16 and an advanced thermostat. An incentive of \$25 per season will be offered to
17 customers who choose to participate in this pilot program. Load curtailment will
18 take place at known time periods of the day for up to 10 days per winter
19 curtailment season. Direct load reduction will be conducted via cycling of
20 electric water heating, resistive heat, forced air furnaces and heat pump systems.

1 **D. Proposed Timeline, Evaluation Methodology and Costs**

2 **Q. What is PSE's proposed timing for launching the pilot programs?**

3 A. PSE anticipates launching these pilots in 2007 and testing events during the
4 winter of 2007-2008. PSE proposes to develop detailed program designs and
5 implementation plans by the summer of 2007, with input from Commission Staff
6 and stakeholders and based on the funding level authorized by the Commission in
7 this proceeding.

8 **Q. How does PSE plan to evaluate the results of these programs?**

9 A. PSE anticipates that all the proposed demand response pricing and load control
10 pilots will be evaluated using similar approaches. Peak load reductions will most
11 likely be assessed by a statistical analysis that compares the Event Day energy use
12 of program participants to control groups of non-participating customers.
13 Customer surveys or other market research may also be conducted to determine
14 the effectiveness of marketing and education efforts, as well as a variety of
15 customer perceptions and opinions about the pilots. Specific research plans will
16 be developed as part of the program design process, with Commission staff and
17 stakeholder input. PSE has included over \$ 350,000 for evaluation within the
18 total proposed budget.

1 **Q. What are the estimated costs of the programs in PSE's demand response**
2 **menu?**

3 A. The total estimated cost for this menu of programs is approximately \$3 million.
4 These costs are reasonably balanced between the various types of programs. The
5 upgrade of the existing buy-back programs will comprise about 4% of the costs
6 (\$120,000), the demand-response pricing pilot programs will comprise about 40%
7 of the costs (\$1.2 million), and the direct load control pilot programs will
8 comprise about 56% of the costs (\$1.7 million).

9 **Q. How does the Company propose that the costs of this portfolio of programs**
10 **be recovered?**

11 A. We are proposing that the costs of these programs be recovered in general rates.
12 The Company believes that this is appropriate because the anticipated benefits of
13 these types of programs would be enjoyed by all customers as a whole – through
14 reductions in power costs and infrastructure investment levels from what such
15 costs would be absent the peak load reductions achieved by these programs.

16 **IV. CONCLUSION**

17 **Q. Would you please summarize your testimony?**

18 A. PSE's electric energy incentive mechanism would promote the Company's
19 pursuit of cost-effective energy efficiency programs by addressing disincentives

1
2
3
4
5
6
7
8
9
10
11

to energy efficiency investments that are embedded in the current regulatory system.

PSE’s proposals for a menu of demand response pilot programs would permit the Company to gather and evaluate information about the extent to which customers might be willing to reduce their electric usage at key times. Such information is critical to understanding whether expansion of such programs might help reduce both power costs and the need to expand the capacity of PSE’s electric transmission and distribution systems to meet peak loads.

Q. Does that conclude your testimony?

A. Yes, it does.

[BA060420010]