**BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION**

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION,	
Complainant,	**Docket No. UE-040641**
v.	**Docket No. UG-040640**
PUGET SOUND ENERGY, INC.,	
Respondent.	

**PREFILED RESPONSE TESTIMONY OF
KEVIN C. HIGGINS
ON BEHALF OF THE KROGER CO.**

September 23, 2004

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RESPONSE TESTIMONY OF KEVIN C. HIGGINS

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3   **Introduction**

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

5   A.   Kevin C. Higgins, 39 Market Street, Suite 200, Salt Lake City, Utah,

6   84101.

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

8   A.   I am a Principal in the firm of Energy Strategies, LLC. Energy Strategies

9   is a private consulting firm specializing in economic and policy analysis

10   applicable to energy production, transportation, and consumption.

11 **Q.   On whose behalf are you testifying in this phase of the proceeding?**

12 A.   My testimony is being sponsored by The Kroger Co. ("Kroger") on behalf

13   of its Fred Meyer Stores and Quality Food Centers divisions. Kroger is one of the

14   largest retail grocers in the United States, and operates 145 facilities in the state of

15   Washington, 68 of which are located in the territory served by Puget Sound

16   Energy ("PSE").   These facilities purchase more than 185 million kWh annually

17   from PSE, and are served on Rate Schedules 24, 25, 26, and 31.

18 **Q.   Please describe your professional experience and qualifications.**

19 A.   My academic background is in economics, and I have completed all

20   coursework and field examinations toward the Ph.D. in Economics at the

21   University of Utah. In addition, I have served on the adjunct faculties of both the

22   University of Utah and Westminster College, where I taught undergraduate and

23   graduate courses in economics. I joined Energy Strategies in 1995, where I assist

1   private and public sector clients in the areas of energy-related economic and

2   policy analysis, including evaluation of electric and gas utility rate matters.

3   Prior to joining Energy Strategies, I held policy positions in state and local

4   government. From 1983 to 1990, I was economist, then assistant director, for the

5   Utah Energy Office, where I helped develop and implement state energy policy.

6   From 1991 to 1994, I was chief of staff to the chairman of the Salt Lake County

7   Commission, where I was responsible for development and implementation of a

8   broad spectrum of public policy at the local government level.

9   **Q.   Have you previously testified before this Commission?**

10   A.   Yes. I testified in the interim phase of the PSE 2001 general rate case.[1] I

11   also participated in the collaborative process that led to the settlement agreement

12   submitted by the parties to that general rate proceeding, which was subsequently

13   approved by the Commission.

14 **Q.   Have you testified before utility regulatory commissions in other states?**

15   A.   Yes. I have testified in over 50 proceedings on the subjects of utility rates

16   and regulatory policy before state utility regulators in Arizona, Colorado,

17   Georgia, Idaho, Indiana, Michigan, Nevada, New York, Ohio, Oregon, South

18   Carolina, Utah, and Wyoming.

19   A more detailed description of my qualifications is contained in Exhibit

20   No. __(KCH-1), attached to my response testimony.

21

22 **Overview and conclusions**

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

1   A.   I have been asked to evaluate the electric rate spread that PSE is proposing

2   in this proceeding, as well as the underlying cost-of-service analysis performed by

3   the Company in support of its proposal. In addition, I have been asked to evaluate

4   the Company's proposed rate design for Rate Schedules 25 and 26. Finally, I have

5   been asked to recommend any modifications to the Company's proposal that

6   might be appropriate.

7   My testimony does not address the gas-related aspects of the Company's

8   filing.

9   **Q.   What conclusions have you reached regarding PSE's proposed electric rate**

10   **spread?**

11   A.   PSE has proposed that its requested rate increase be spread in a manner

12   that moves each customer class half-way toward cost-of-service parity, subject to

13   the constraints that no rate schedule receive greater than 150 percent of the system

14   average increase, and that no rate schedule receive below 50 percent of the system

15   average. In addition, PSE incorporates the remaining step toward reducing the

16   price spread between Rate Schedules 26 and 31 that is scheduled to be

17   implemented pursuant to the Commission's decision in the 2001 general rate case.

18   In my opinion, PSE's overall approach toward rate spread falls within the

19   range of reasonableness, given the need to balance cost causation and gradualism.

20   I concur with the adoption of the Company's approach if the Commission

21   approves a rate increase for the Company.

22   **Q.   What conclusions have you reached regarding PSE's cost-of-service analysis?**

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[1] WUTC Docket Nos. UE-011570 and UE-011571 (consolidated).

1   A.   I have reviewed PSE's cost-of-service analysis, and I support its adoption

2   as a package, including the Company's updated approach to allocating

3   distribution costs. At the same time, I have serious reservations about the

4   calculation of the peak credit that is used to classify demand-related production

5   and transmission costs. I recommend that if, for some reason, the Company's

6   cost-of-service methodology, including the updated approach to allocating

7   distribution costs, is not approved by the Commission, then the peak credit

8   calculation should also be subject to modification as discussed later in my

9   testimony.

10   **Q.   What conclusions have you reached regarding PSE's proposed rate design**

11   **for Rate Schedules 25 and 26?**

12   A.   I have concluded that PSE's rate design for these two rate schedules can

13   be improved. Both of these rate schedules pay rates that are above parity. As

14   proposed by PSE, the entire subsidy paid by these rate schedules is levied in the

15   energy charge, as opposed to the demand charge, unfairly disadvantaging the

16   higher-load-factor customers in these rate schedules. Moreover, for Rate 25,

17   demand-related charges do not cover all demand-related costs, further skewing

18   the results to the disadvantage of the higher-load-factor customers.

19   I recommend that for Rate Schedule 25, the tailblock energy charge be set

20   at the energy-related cost of service, and that the above-parity portion of the rate

21   should be moved from the tailblock energy charge to the demand charge. In the

22   case of Rate Schedule 26, I recommend that the energy charge be set at the

1   energy-related cost of service, and that the above-parity portion of the rate should

2   be moved from the energy charge to the demand charge.

3   In addition, I support PSE's proposal to allow Rate Schedule 26 customers

4   to choose to be served at primary voltage. However, I do not agree that the proper

5   pricing for this option should be a discount in Rate Schedule 26 that is smaller

6   than the discount available on Rate Schedule 31. It is unduly discriminatory to

7   have two classes of primary service customers who are virtually identical in

8   character, but take service at different rates. Removing the current artificial

9   barrier to primary service is a good idea and should be adopted. But new primary

10   service customers and current Rate Schedule 26 customers who switch to primary

11   service should be served under Rate Schedule 31.

12

13   **Rate spread**

14   **Q.   What method has PSE proposed for spreading its proposed electric rate**

15   **increase?**

16   A.   PSE's proposed electric rate spread is addressed in the direct testimony of

17   James A. Heidell.[2] Mr. Heidell recommends that PSE's proposed rate increase be

18   spread in a manner that moves each customer class half-way toward cost-of-

19   service parity, subject to the constraints that no rate schedule receive greater than

20   150 percent of the system average increase, and that no rate schedule receive

21   below 50 percent of the system average. Mr. Heidell also suggests some relatively

22   minor exceptions to these parameters to avoid net margin loss. The Company's

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[2] Pre-filed direct testimony of James A. Heidell, pp. 10-15.

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1   proposal also incorporates the remaining step toward reducing the price

2   differential between Rate Schedules 26 and 31 that is scheduled to be

3   implemented pursuant to the Commission's decision in the 2001 general rate case.

4 **Q.   What is your assessment of Mr. Heidell's electric rate spread proposal?**

5 A.   In my opinion, Mr. Heidell's proposal falls within the range of

6   reasonableness.

7   In determining rate spread, it is important to align rates with cost

8   causation, to the greatest extent practicable. Properly aligning rates with the costs

9   caused by each customer class is essential for ensuring fairness, as it minimizes

10   cross subsidies among customers. It also sends proper price signals, which

11   improves efficiency in resource utilization.

12   At the same time, we should also be mindful that dramatic price changes

13   can be disruptive to customers, and that cost-of-service results can vary, or even

14   reverse direction, over time. For this reason, many regulatory authorities adopt the

15   approach of "gradualism", pursuant to which rate changes are implemented in a

16   manner that moves customer classes *toward* cost-of-service parity, subject to

17   constraints that limit the rate impact on any particular customer class.

18   In my opinion, PSE's approach to rate spread properly balances cost

19   causation and gradualism. I concur with the adoption of the Company's approach

20   if the Commission approves a rate increase for the Company.

21 **Q.   What is the nature of the adjustments to Rate Schedules 26 and 31 that are**

22   **being implemented pursuant to the Commission's decision in the 2001**

23   **general rate case?**

1   A.   Rate Schedule 26 serves customers with billing demands greater than 350

2   kW. Rate Schedule 31 serves customers who are similarly-situated, although the

3   rate schedule has no formal size requirement. The essential difference between the

4   two rate schedules is that Rate Schedule 26 is for customers is taking service at

5   secondary voltage and Rate Schedule 31 is for customers taking service at

6   primary voltage. In the 2001 general rate case, it was recognized that the price

7   differential between these two rates exceeded the cost differences that were

8   attributable to the voltage differentiation. As part of the settlement approved by

9   the Commission in the 2001 general rate case, Rate Schedules 26 and 31 are being

10   brought closer together in a series of annual steps, with Rate Schedule 31

11   increasing 1 percent, and Rate Schedule 26 decreasing by the same amount of

12   revenue (approximately 0.8 percent in rates) in each step.

13   PSE's proposed rate spread incorporates the final step required by the

14   2001 general rate case Order (scheduled to take effect in 2005). It is an

15   adjustment that is strictly between Rate Schedules 26 and 31, and does not affect

16   other customer classes. Even after the final adjustment, Rate Schedule 31 will

17   continue to offer a pricing advantage relative to Rate Schedule 26. Incorporating

18   the final adjustment between Rate Schedules 26 and 31 that is required by the

19   2001 general rate case Order is appropriate. This feature of the rate spread should

20   be adopted by the Commission to ensure that the reduction in the non-cost-based

21   price difference between Rate Schedules 26 and 31 is implemented as ordered.

22

23

1   **Cost-of-service**

2   **Q.   What is the purpose of cost-of-service analysis?**

3   A.   Cost-of-service analysis is conducted to assist in the determination of

4   appropriate rates for each customer class. It involves the assignment of revenues,

5   expenses, and rate base to each customer class, and includes the following steps:

6   • Separating the utility's costs in accordance with the various *functions* of its

7   system (e.g., production, transmission, distribution);

8   • *Classifying* the utility's costs with respect to the manner in they are incurred by

9   customers (e.g., customer-related costs, demand-related costs, and energy-related

10   costs); and

11   • *Allocating* responsibility for causing the utility's costs to the various customer

12   classes.

13   **Q.   What basic approach to cost-of-service analysis does PSE utilize?**

14   A.   To classify production and transmission costs into demand and energy,

15   PSE uses the peak credit method adopted in PSE's 1992 rate design case. Energy

16   costs are allocated to classes based on weather-normalized energy usage (adjusted

17   for line losses) and demand costs are allocated based on weather-normalized class

18   contribution to system peak during the 200 peak hours of the year.

19   In allocating distribution costs, PSE utilizes its databases to directly assign

20   costs to the customer classes that use discrete portions of the distribution

21   infrastructure. Examples of such direct assignment include the cost of meters, line

22   transformers, and underground service lines. The Company also uses its databases

23   to allocate common distribution costs at the circuit and substation level of detail,

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1		providing an improved degree of accuracy relative to the more aggregated
2		approach adopted in the 1992 rate design case. For example, PSE allocates
3		distribution line costs based on each class's non-coincident peak demand on 1,100
4		distribution feeders, with each feeder weighted by line-miles. This approach
5		properly recognizes that distribution feeder cost is driven by both load and line-
6		miles.
7	**Q.**	**What is your overall assessment of PSE's cost-of-service analysis?**
8	A.	Overall, I believe the Company's cost-of-service analysis is well designed
9		and should be adopted as proposed. In particular, the updates to the 1992
10		methodology with respect to distribution cost allocation represent a marked
11		improvement in accurately identifying the costs being incurred by the individual
12		customer classes.
13	**Q.**	**Are there areas in which you believe the Company's cost-of-service analysis**
14		**can be improved?**
15	A.	Yes. I believe the accuracy of the "peak credit" classification of demand
16		can be improved, as I will explain below. However, I am not suggesting that this
17		improvement necessarily be implemented in this proceeding, in light of the other
18		improvements PSE has already made to its cost-of-service analysis. But to the
19		extent that the Company's methodology is not accepted as proposed, then I
20		believe that modification to the peak credit calculation is in order.
21	**Q.**	**Please explain the modification to the peak credit calculation that you would**
22		**recommend if the Company's cost-of-service methodology is not accepted as**
23		**proposed.**

1   A.   The "peak credit" method employed by PSE classifies the portion of

2   production costs attributable to capacity by taking the ratio of the current cost of a

3   peaking resource (a simple-cycle combustion turbine, "CT") to the current cost of

4   a baseload resource (a combined-cycle combustion turbine, "CCCT"). Through

5   this ratio of proxy values, the peak credit method attempts to measure the

6   proportion of production costs that are demand-related.

7   The Company's calculation of this ratio results in production costs being

8   classified as 13 percent demand-related and 87 percent energy-related.[3] This

9   same ratio is then applied to the classification of transmission costs.

10   In the Company's calculation of the peak credit, only half of the capital

11   and fixed O&M costs of the CT are included in the numerator of the ratio. In my

12   opinion, this exclusion is arbitrary and without merit. The exclusion of these costs

13   results in a substantial understatement of the costs of a CT relative to a CCCT,

14   undermining the logical basis of the derivation of capacity costs via this

15   methodology. As a result, the classification of demand-related costs is

16   significantly understated.

17   **Q.**   **Is a reason given for the exclusion of these costs in the calculation?**

18   A.   Based on my review of the Order in the 1992 rate design case approving

19   the peak credit method,[4] these costs are excluded on the grounds that CT units

20   provide other benefits in addition to peaking. My understanding is that these

21   "other benefits" are construed to include the provision of reserves for hydro

22   resources. I submit that the provision of such "other benefits" is irrelevant to the

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[3] Direct testimony of Colleen E. Paulson, Exhibit CEP-10, p. 3.

1   calculation at hand, which is the derivation of the relative cost of capacity based

2   on the cost of a proxy CT relative to a proxy CCCT. The existence of other uses

3   for CT units does not obviate the costs required to provide capacity, which is the

4   stated purpose of the peak credit calculation. Moreover, the provision of reserves

5   by CT units is not conceptually distinct from capacity, as reserves are merely a

6   form of capacity.

7   Therefore, I conclude that the accuracy of the peak credit calculation can

8   be improved by including the full cost of capital and fixed O&M in the cost of the

9   CT, and by rejecting the arbitrary exclusion of half of these costs.

10   **Q.   Have you calculated the change in the demand classification that results from**

11   **such a modification?**

12   A.   Yes. Including all capital and fixed O&M costs associated with the proxy

13   CT in the numerator of the peak credit ratio increases the calculation of demand-

14   related costs to 21 percent. This result is shown in Exhibit No. __(KCH-2). This

15   exhibit also corrects and documents some minor spreadsheet errors in the PSE

16   peak credit calculation.

17   **Q.   Have you calculated the impact on PSE's cost-of-service results of increasing**

18   **the demand classification to 21 percent?**

19   A.   Yes, I have. The results are shown in Exhibit No. __(KCH-3). They are

20   summarized in Table KCH-1, below. Properly including all capital and fixed

21   O&M costs in the numerator of the peak credit ratio, and applying the results to

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[4] WUTC Docket Nos. UE-920433, UE-920499, and UE-921262, Ninth Supplemental Order on Rate
Design Issues, pp. 8-10, August 16, 1993.

1　　the PSE cost of-service model increases the ratio of adjusted revenue to revenue-

2　　requirements for all customer classes except Residential.

Table KCH-1
Adjusted Revenue to Revenue Requirement Ratios

Customer Class	PSE COS	PSE COS w/ 100% of CT costs in Peak Credit
Residential	96%	94%
Secondary 24	102%	103%
Secondary 25	115%	116%
Secondary 26	108%	110%
Primary 31	99%	102%
Retail Wheeling	125%	128%
High Voltage	90%	94%
Firm Resale	95%	96%

19　**Q.　Are you recommending that 21 percent of PSE's production and**

20　**transmission costs be classified as demand-related at this time?**

21　A.　　No. Although I believe that such a classification is the correct result of

22　calculating the peak credit method properly, I am not suggesting that this

23　improvement necessarily be implemented in this proceeding, in light of the other

24　improvements PSE has already made to its cost-of-service analysis. As I indicated

25　above, I recommend adoption of the Company's entire cost-of-service analysis as

26　a package. But to the extent that the Company's methodology is not accepted as

27　proposed, then I believe that the modification to the peak credit calculation I have

28　described should be adopted.

Rate design of Rate Schedules 25 and 26

2 **Q.   What is your assessment of PSE's proposed rate design for Rate Schedules 25**

3   **and 26?**

4 A.   I believe that PSE's rate design for these two rate schedules can be

5   improved. As shown in Table KCH-1, above, both of these rate schedules pay

6   rates that are above parity (i.e., above 100 percent). As proposed by PSE, the

7   entire subsidy paid by these rate schedules would be levied in the energy charge.

8   Put another way, the demand-related charges for these rate schedules would be

9   priced at, or below, demand cost-of-service, and the energy charge would be

10   priced well above energy cost-of-service to recover the above-parity portion of

11   the rate, plus any deficiency associated with below-cost demand charges. PSE's

12   proposal is detailed in Exhibit No. __(KCH-4), and summarized in Table KCH-2,

13   below.

14   **Table KCH-2**
15   **Costs and Revenues Proposed by PSE, Classified by Energy and Demand**
16
17	Customer Class	Energy	Demand
18			
19	Rate Schedule 25		
20	PSE COS[5]	$140,454,195	$51,765,025
21	PSE Revenue	$159,424,246	$44,992,923
22	Revenue > COS	$ 18,970,051	($ 6,772,102)
23			
24			
25	Rate Schedule 26		
26	PSE COS[6]	$92,112,363	$25,522,414
27	PSE Revenue	$95,186,406	$25,350,815
28	Revenue > COS	$ 3,074,043	($ 171,599)

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[5] Adjusted for revenue credits in proportion to PSE peak credit calculation.
[6] Adjusted for revenue credits in proportion to PSE peak credit calculation.

1   In the case of Rate Schedule 26, PSE's proposed demand charges are

2   relatively close to the proposed demand cost-of-service; however, PSE's proposed

3   energy charges are significantly above energy cost-of-service, in order to recover

4   the above-parity, or subsidy, contribution that Rate Schedule 26 customers make

5   to the system as a whole.

6   In the case of Rate Schedule 25, demand-related costs are not fully

7   recovered in PSE's proposed demand-related charges, requiring the shortfall to be

8   made up by higher energy charges. Then, in addition, the energy charge is further

9   increased to recover the above-parity, or subsidy, contribution that Rate Schedule

10   25 customers make to the system as a whole.

11   **Q.   What problem is created by levying the entire subsidy payment in the energy**

12   **charge?**

13   A.   Levying the entire subsidy payment in the energy charge creates an

14   inequity for the higher-load factor customers within these rate schedules, as these

15   customers have relatively high energy usage in relationship to their billing

16   demands, and, as such, would be forced to pay a disproportionate share of the

17   subsidy, relative to lower-load-factor customers in the same rate schedule. While

18   it may be appropriate, on the basis of gradualism, for these rate schedules *as a*

19   *whole* to pay rates that are above parity for some period of time, care must be

20   taken to design any subsidy charge in an equitable manner so that it is fairly

21   collected *within* the respective rate schedule.

22   **Q.   What do you recommend as an alternative?**

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1   A.   At a minimum, some portion of the above-parity charges should be

2   removed from the energy charge and placed on the demand charge. In the case of

3   Rate Schedule 26, it would be appropriate for any subsidy payment to be placed

4   *exclusively* in the demand charge. In the case of Rate Schedule 25, it would be

5   appropriate for any subsidy payment to be placed *primarily* in the demand charge.

6   **Q.   Why do you believe it is appropriate for any above-parity charges to be**

7   **placed exclusively, or primarily, in the demand charge?**

8   A.   As I discussed above, PSE's peak credit calculation results in a significant

9   under-weighting of demand-related costs. Therefore, at the outset, for any rate

10   schedule, PSE's statement of demand-related costs is biased downward relative to

11   energy related-costs. If, in these circumstances, a particular rate component must

12   be selected to deviate from cost-of-service results in order to fund a subsidy, it is

13   more appropriate that it be the demand charge rather than the energy charge.

14   **Q.   What rate design modification would be necessary to make the adjustment**

15   **you are recommending?**

16   A.   For purposes of illustrating the rate design modification, I am using PSE's

17   proposed rates, recognizing that these are subject to change based on the outcome

18   of this proceeding. These calculations are shown in Exhibit No.__(KCH-5). The

19   rate design approach I describe below can be applied to any final revenue

20   requirement determination.

21   In the case of Rate Schedule 25, I recommend that the tailblock energy

22   charge be set at energy cost-of-service, appropriately adjusted for this schedule's

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1		share of revenue credits. This would lower the tailblock rate from $.055958/kWh[7]
2		as proposed by PSE, to $.0493/kWh. The resulting deficiency would then be
3		made up by raising the winter demand charge from $6.85/kW to $9.47/kW, and
4		by raising the summer demand charge proportionally from $4.57/kW to
5		$6.32/kW.
6	**Q.**	**Why did you limit this modification to the energy tailblock in the case of Rate**
7		**Schedule 25?**
8	A.	In the case of Rate Schedule 25, there is no demand charge levied on the
9		first 50 kW of demand. The energy tailblock generally corresponds to the
10		consumption level at which the demand charge becomes applicable. Therefore, I
11		limited my recommended energy adjustment to the energy tailblock.
12	**Q.**	**What adjustment did you make for Rate Schedule 26?**
13	A.	In the case of Rate Schedule 26, I set the energy charge at energy cost-of-
14		service, appropriately adjusted for this schedule's share of revenue credits. This
15		would lower the energy rate from $.050448/kWh as proposed by PSE, to
16		$.048819/kWh. The resulting deficiency would then be made up by raising the
17		winter demand charge from $6.98/kW to $7.83/kW, and by raising the summer
18		demand charge proportionally from $4.64/kW to $5.20/kW.
19	**Q.**	**Are there any other rate design issues concerning Rate Schedule 26 that you**
20		**wish to address?**
21	A.	Yes. As I indicated above, the fundamental difference between Rate
22		Schedules 26 and 31 is that Rate Schedule 26 is for customers is taking service at

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[7] Excluding the low-income program charge.

1   secondary voltage and Rate Schedule 31 is for customers taking service at

2   primary voltage. Whereas, in my experience, most utilities allow general service

3   customers to determine for themselves whether they wish to take service at

4   primary or secondary voltage – and to make the necessary investments

5   accordingly – the PSE tariff is restrictive and prohibits customers from taking

6   primary service except under certain limited conditions, which are generally

7   outside the customer's control.

8   In this proceeding, PSE proposes to allow Schedule 26 customers to

9   choose to be served at primary voltage. I support this change, as it enhances the

10   options available to customers and can reduce the capital required by the utility to

11   provide new distribution infrastructure. However, as explained in Mr. Heidell's

12   testimony, the applicable primary rate would be included as a discount in Rate

13   Schedule 26 – not Rate Schedule 31. The new Rate Schedule 26 primary discount

14   would be smaller than the discount available on Rate Schedule 31, and the latter

15   would eventually be closed to new customers. The reason for this proposed

16   treatment is that, in PSE's view, Rate Schedules 26 and 31 continue to have a

17   price differential that is greater than the differences in the cost to serve these two

18   rate classes, despite the steps taken pursuant to the 2001 general rate case to

19   reduce the gap.

20   I recommend against creating two classes of primary service customers

21   who are virtually identical in character, but take service at different rates, as such

22   a situation would be unduly discriminatory. Removing the artificial barrier to

23   primary service is a good idea and should be adopted. But new primary service

17

1   customers and current Rate Schedule 26 customers who switch to primary service

2   should be served under Rate Schedule 31, which exists specifically for primary

3   service. To the extent that the price differential between Rate Schedules 26 and 31

4   continues to be greater than what is justified by cost differences, the pricing gap

5   between these two rate schedules should continue to be reduced over time.

6   **Q.   Does this conclude your response testimony?**

7   A.   Yes, it does.