

-BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH-

In the Matter of the Application of PacifiCorp
for Approval of Its Proposed Electric Rate
Schedules and Electric Service Regulations

Docket No. 01-035-01

Utah Division of Public Utilities

Exhibit No. DPU 8.0 COS

Direct Testimony (COS) of Rebecca L. Wilson

for the

Division of Public Utilities

Department of Commerce

State of Utah

June 15, 2001

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1 **Q. Please state your name, occupation and business address.**

2 A. Rebecca L. Wilson, Technical Consultant for the Division of Public Utilities (Division) of
3 the State of Utah Department of Commerce at 160 East 300 South, Salt Lake City, Utah.

4 **Q. Are you the same Rebecca Wilson that filed direct testimony on revenue requirement**
5 **in this case on June 4, 2001?**

6 A. Yes.

7 **Q. What is the purpose of your testimony today?**

8 A. To present the Division’s position on the spread of rates and rate design. More
9 specifically I will discuss:

- 10 1. Rate making objectives
- 11 2. Description of cost-of-service studies
- 12 3. Cost-of-service principles
- 13 4. Rate spread recommendations
- 14 5. Rate design principles
- 15 6. Rate design recommendations
- 16 7. Customer charge

17 **RATE-MAKING OBJECTIVES**

18 **Q. What are the Division’s rate-making objectives?**

19 A. Section 54-4a-6 of the Utah Code provides the following rate-making objectives for the

1 Division:

2 In the performance of the duties, powers, and responsibilities committed to it by law, the
3 Division of Public Utilities shall act in the public interest in order to provide the Public
4 Service Commission with objective and comprehensive information, evidence, and
5 recommendations consistent with the following objectives:

- 6 (1) promote the safe, healthy, economic, efficient, and reliable operation of all public
7 utilities and their services, instrumentalities, equipment, and facilities;
- 8 (2) provide for just, reasonable, and adequate rates, charges, classifications, rules,
9 regulations, practices, and services of public utilities;
- 10 (3) make the regulatory process as simple and understandable as possible so that it is
11 acceptable to the public; feasible, expeditious, and efficient to apply; and designed
12 to minimize controversies over interpretation and application;
- 13 (4) for purposes of guiding the activities of the Division of Public Utilities, the phrase
14 “just, reasonable, and adequate” encompasses, but is not limited to the following
15 criteria:
 - 16 (a) maintain the financial integrity of public utilities by assuring a sufficient
17 and fair rate of return;
 - 18 (b) promote efficient management and operation of public utilities;
 - 19 (c) protect the long-range interest of consumers in obtaining continued quality
20 and adequate levels of service at the lowest cost consistent with the other

- 1 provisions of Subsection (4).
- 2 (d) provide for fair apportionment of the total cost of service among customer
- 3 categories and individual customers and prevent undue discrimination in
- 4 rate relationships;
- 5 (e) promote stability in rate levels for customers and revenue requirements for
- 6 utilities from year to year; and
- 7 (f) protect against wasteful use of public utility services.

8 Since these objectives are not prioritized and are sometimes conflicting, the Division must
9 use judgement in balancing the objectives.

10 **DESCRIPTION OF COST-OF-SERVICE STUDIES**

11 **Q. The above objectives call for the fair apportionment of costs. How is fair**
12 **apportionment determined?**

13 A. Fair apportionment of costs is determined by completing a cost-of-service study. Division
14 Witness Laura Nelson provides testimony on the Division’s cost-of-service study.

15 **Q. What is the purpose of a class cost-of-service study?**

16 A. The purpose of a class cost-of-service study is to determine each rate class or schedule’s
17 share of the Utah revenue requirement or in other words the rate class or schedule revenue
18 requirement.

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COST-OF-SERVICE PRINCIPLES

Q. How does the Division make the decisions necessary to complete and use a cost of service study to get fair apportionment of costs?

A. The Division over the years has used the following cost of service principles to achieve the fair apportionment of costs:

- 1. Cost causation
- 2. Equal rates of return
- 3. Gradualism

Q. Please explain the Division’s cost causation principle.

A. **Cost causation** is the principle that costs should be borne by those who cause them to be incurred. This is done not only for the perception of fairness but also to send a correct price signal to the consumer. This principle is implemented by using cost causative allocation methods (factors). An example of a cost causative allocation method is the allocation of fuel cost among users on the basis of each user’s relative share of total kwh because fuel cost is a variable cost primarily caused by the total kwh produced.

Q. Please explain your equal rates of return principle.

A. **Equal rates of return** is the traditional measure of a fair sharing of total costs among users. The total cost of utility service which is usually referred to as the revenue requirement is composed of total operating expenses plus a return on rate base. The total

1 cost to serve each rate class is the sum of the operating expenses allocated to the rate class
2 plus the target *system* average rate of return on the rate base allocated to that rate class.
3 For each rate class to pay its fair share of the total cost-of-service, it must pay the same
4 *system* rate of return. Only when the rates of return are equal is there a fair apportionment
5 of the total cost-of-service. By comparing the actual earned rate of return on rate base for
6 each class to the system average rate of return, you can determine if that rate class has
7 contributed more or less than the average to the Company's total rate of return on rate
8 base. If the earned rate of return for a rate class is less than the average, then that rate
9 class is not paying its fair share of the Utah total cost of service. Only when the earned
10 rate of return on rate base is equal for all rate classes can you be sure that Utah's total cost
11 of service has been fairly apportioned among the rate classes.

12 **Q. Please explain your gradualism principle.**

13 A. **Gradualism** has traditionally been used by the Division in making changes to an
14 individual class revenue requirement in order to minimize rate impact and to promote rate
15 stability. Cost of service is a moving target because of shifts in cost allocations due to
16 changing service characteristics such as kwh usage and peak demands as well as study
17 refinements and corrections. Gradual movement toward setting rates equal to the cost of
18 service prevents flip-flopping due to changes over time and helps meet our rate stability
19 objective.

1 **RATE SPREAD RECOMMENDATIONS**

2 **Q. Are cost-of-service adjustments needed in this case?**

3 A. Yes. Cost-of-service adjustments are nonuniform percentage changes in revenue
4 requirements across rate schedules that are based on a cost-of-service study. Analysis of
5 the Division’s cost-of-service study results [Exhibit No. DPU 11.1] shows that all rate
6 classes except for General Service Rate 6, General Service High Voltage Rate 9 and
7 Traffic Signals Rate 12, fall outside a plus or minus 10% band around the Commission’s
8 allowed system rate of return of 8.873%. This means that cost-of-service adjustments are
9 needed and that a non-uniform change is reasonable.

10 **Q. What is the basis for the 10% band around the system rate of return?**

11 A. In the Commission’s March 7, 1983 spread Order in UP&L case No. 81-035-13 they stated
12 on page 35:

13 The study of cost of service is not an exact science and thus, we find
14 we have no obligation to bring each schedule to the precise results
15 of a particular cost of service study. Dr. Leininger, who testified on
16 behalf of Nucor, indicated that bringing a schedule within plus or
17 minus 10% of Company average rate of return is reasonable. We
18 adopt as a reasonable regulatory objective that each customer
19 schedule over time be brought to within a range of plus or minus 10
20 percent of relevant cost of service study results.

21 **Q. What is the Division’s spread recommendation?**

22 A. Our recommended spread of the Division’s proposed \$5.8 million revenue requirement
23 increase is shown in Exhibit No. DPU 8.7. We recommend equal percentage increases of
24 about 1.9 % for Residential Rate 1, Irrigation Rate 10, and Mobile Home Park Rate 25.

1 We recommend no overall revenue change for Residential Time of Day Rate 2, General
2 Service Rates 6, 6A and 6B, General Service High Voltage Rate 9, 9A and 9B, Street and
3 Area Light Rates 7, 11, 12, Traffic Signals Rate 12, Outdoor Lighting Rate 12, Small
4 General Service Rate 23, Electric Furnace Rate 21 (frozen), Small General Service 23B,
5 and Firm Industrial Contracts. We support movement of many customers from the frozen
6 Commercial Space Heating Rate 19 to the applicable schedules identified by PacifiCorp
7 witness Mr. Griffith. This results in a revenue decrease for Commercial Space Heating
8 Rate 19 of 11.5%.

9 **Q. What is the basis for the Division’s spread recommendation?**

- 10 A. Our spread recommendation is based on the following:
- 11 1. The results of our class cost-of-service study for 12 months ending September 2000.
 - 12 2. Comparison of past and current cost of service studies.
 - 13 3. No change to schedules that are close to cost of service or call for a rate decrease when
14 a general rate increase is needed.
 - 15 4. Frozen rate schedules should not get decreases unless they are achieved through
16 consolidation with other rate schedules. Frozen rate schedules should not get increases
17 unless they are supported by cost studies.

18 **Q. Why do you recommend a rate increase for only three rate schedules?**

19 A. According to the Division’s class cost-of-service study, summarized in Exhibit No. DPU
20 11.1, only four classes need an *increase* in revenue to bring them closer to a rate of return

1 index of 1.00. These classes are Residential Rate 1, Irrigation Rate 10, Mobile Home Park
2 Rate 25 and Firm Industrial Contracts.

3 I recommend making no change to the Firm Industrial Contracts group for three reasons.
4 First, it is my understanding that the Firm Industrial Contracts class is primarily one
5 contract which is due to expire July 31, 2001. Thus, the required revenue increase could
6 not be collected by the time rate changes in this case are made effective. Second,
7 allocating an equal percentage share of the required revenue increase to this class did not
8 materially reduce the revenue increase required for the other three classes. Therefore
9 fairness to the other three classes did not dictate we include the Firm Industrial Contract
10 class in the increase. Finally, it could require litigation to alter the contract which could
11 demand time and resources better spent on changes that are material. This leaves the
12 remaining three rate classes to absorb the required revenue increase.

13 **Q. Why did you spread the revenue increase equally among the three rate classes rather**
14 **than applying the individual increases noted in the Division’s class cost of service**
15 **study?**

16 A. We spread the increase equally in order to promote rate stability yet recognize fairness.
17 The Division’s class cost-of-service study indicates that each of these three rate classes are
18 below 90% of the rate of return index. It shows that Rate 1 is much closer to the 10% band
19 at .89 than the Irrigation Rate 10 is at .56, which fact might argue for unequal spread of the

1 revenue increase among these three classes. However, because of some concerns with the
2 Company's class cost-of-service study, we chose to allocate the required revenue increase
3 equally among the three classes. For example, the weather adjustments used in the
4 Company's class cost-of-service study are double the adjustments used by the Company in
5 its interjurisdictional weather adjustments in some months. We have outstanding data
6 requests regarding this issue. Further, as Division witness Dr. Nelson points out, we have
7 concerns with the data underlying the calculation of the customer charge that we are
8 looking into. On the other hand, except for the lighting rates, the results of the Company's
9 class cost-of-service study are consistent with prior years class cost-of-service studies and
10 therefore we have some confidence in it. Finally, the Division's recommended increase
11 for each class is less than the individual increase identified for each class in the Division's
12 class cost-of-service study. In this way we promote both fairness and rate stability by
13 gradually moving toward cost-of-service yet recognizing the limits and potential errors in
14 the class cost-of-service study.

15 **Q. According to the Division's class cost-of-service study, the lighting schedules require**
16 **a substantial rate reduction. Why did the Division choose to maintain the existing**
17 **rates?**

18 A. Review of past class cost-of-service studies over the last five years has shown the lighting
19 rates to be consistently below cost of service. This is the first class cost-of-service study
20 that indicates a decrease is needed for the lighting rate schedules. The Company provided

1 no explanation in its testimony for the flip-flop in results. We have an outstanding data
2 request asking for an explanation. It could be a data error. It is for this reason and for the
3 reason that it is Division policy not to decrease rates in a case calling for a rate increase,
4 that we do not recommend a decrease for lighting rates.

5 **Q. But then why do you recommend a decrease for the Commercial Space Heating Rate**
6 **19 which is currently frozen?**

7 A. The Division recommends a decrease for this rate because we support movement of
8 customers from frozen rate schedules to applicable rate schedules when it does not result
9 in an unreasonable rate increase. This is because it is discriminatory to have customers
10 with similar usage characteristics paying different rates. Once a rate schedule is frozen,
11 new customers are not eligible to take service at that rate but must instead pay a higher rate
12 for similar service and this violates our goal of nondiscriminatory pricing. In the current
13 case, it may be possible to move most customers from this frozen schedule without an
14 adverse impact, thus moving toward our goal of eliminating the frozen schedule.

15 **RATE DESIGN PRINCIPLES**

16 **Q. What is rate design?**

17 A. Rate design is the design of specific rate components that will, when multiplied by the
18 related test year billing units, recover the revenue requirement for each rate schedule.
19 Recovery of the rate schedule revenue requirement is one of several rate design objectives.

1 **Q. Earlier you discussed objectives and principles for cost-of-service. What are the**
2 **Division's objectives for rate design?**

3 A. Our objectives follow from the State Code which indicates that rates should be stable,
4 simple, understandable and acceptable to the public, promote economic efficiency and
5 result in a fair apportionment of costs (equity) among individual customers with no undue
6 discrimination, and protect against wasteful use of public utility services. Since these
7 objectives are not prioritized and are sometimes conflicting, the Division must use
8 judgement in balancing the objectives.

9 **Q. How does the Division incorporate these objectives in rate design?**

10 A. I have used the following principles which have been supported by the Division since
11 1983:

- 12 1. *Simple* - simple rates are more likely to be understood and accepted by customers.
13 Tariff descriptions should be clear, unambiguous and understandable by the public.
- 14 2. *Correct price signal* - if rates are correctly based on costs, customers can make the
15 right decision about energy use including energy conservation decisions. A
16 complicated rate that is not understood cannot be a good price signal. Some
17 customer classes are better able to understand complicated rates than others.
- 18 3. *Multi-part rates* - three part rates with customer, energy and demand components
19 will more fairly apportion the costs among individual customers than one or two
20 part rates. However, a demand component for residential is normally not

1 recommended since the added cost of demand meters usually outweighs the benefit
2 of better cost apportionment.

3 4. *Declining block rates* - the PSC has adopted the PURPA declining block rate-
4 making standard that requires declining block rates to be cost justified. The
5 Division supported the adoption of this standard and discourages the use of
6 declining block rates. One of our goals has been to eliminate existing declining
7 block rates that are not cost justified.

8 5. *Gradualism* - to promote rate stability and to minimize impacts on individual
9 customers, rate changes should be made gradually.

10 6. *Marginal & embedded costs* - regulated rates must recover the embedded revenue
11 requirement of the rate schedule. However, marginal and average unit embedded
12 costs should be reviewed and taken into account when setting prices in order to
13 send appropriate price signals.

14 7. *Customer charges* - costs that generally increase with the number of customers, but
15 are not caused by each customer should be excluded from the customer charge and
16 instead be included within the commodity portion of rates. This position was
17 stated by the PSC in their Order in Mountain Fuel Case No. 82-057-15.

18 **RATE DESIGN RECOMMENDATIONS**

19 **Q. What are the Division’s rate design recommendations?**

- 1 A. Our proposed rate designs are shown in Exhibit No. DPU 8.8, pages 1 through 31; changes
2 and totals are highlighted by bold type. Briefly, these proposals are:
- 3 1. Residential Rate 1 - Maintain the monthly customer charge at 98 cents. Maintain
4 the current energy rate all year for the first 400 kWh of monthly consumption at
5 6.1307 cents per kilowatt-hour. Maintain the current energy rate at 6.1307 cents
6 per kilowatt-hour for all kWh of monthly consumption in the non-summer months.
7 Increase the energy rate from 6.1307 cents per kilowatt-hour to 6.4565 cents per
8 kilowatt-hour for summer time monthly consumption over the first 400 kWhs in
9 order to collect the entire 1.9% class revenue increase. Division witness Dr.
10 Compton presents testimony on this proposal.
- 11 2. Residential Rate 2 Time of Day option - Reduce monthly customer service charge
12 from \$14.63 to \$0.98 to equal the customer service charge in Residential Rate 1.
13 In order to recover the required revenue, increase the on-peak and off-peak rates
14 proportionately from 10.9140 cents per kilowatt-hour to 13.1895 cents per
15 kilowatt-hour for on peak power and from 3.2630 cents per kilowatt-hour to
16 3.9433 cents per kilowatt-hour for off-peak power.
- 17 3. General Service Rate 6A Energy Time of Day option - Reduce monthly customer
18 service charge from \$29.49 to \$14.74 equal the customer service charge in
19 Residential Rate 6. Reduce the seasonal charge from \$353.86 to \$176.88 to equal
20 the seasonal charge in Residential Rate 6. In order to recover the required revenue,

1 increase the on-peak and off-peak rates proportionately from 6.2025 cents per
2 kilowatt-hour to 6.4476 cents per kilowatt-hour for on peak power and from
3 1.8672 cents per kilowatt-hour to 1.9409 cents per kilowatt-hour for off-peak
4 power.

5 4. General Service Rate 6B Demand Time of Day option- Reduce monthly customer
6 service charge from \$29.49 to \$14.74 to equal the customer service charge in
7 Residential Rate 6. Reduce the seasonal charge from \$353.86 to \$176.88 to equal
8 the seasonal charge in Residential Rate 6. In order to recover the required revenue,
9 increase the energy rate from 2.6294 cents per kilowatt-hour to 2.65 cents per
10 kilowatt-hour.

11 5. General Service High Voltage Rate 9A Energy Time of Day option - Reduce
12 monthly customer service charge from \$176.93 to \$98.29 to equal the customer
13 service charge in Residential Rate 9. In order to recover the required revenue,
14 increase the on-peak and off-peak rates proportionately from 4.4789 cents per
15 kilowatt-hour to 4.5010 cents per kilowatt-hour for on peak power and from
16 1.9244 cents per kilowatt-hour to 1.9335 cents per kilowatt-hour for off-peak
17 power.

18 6. General Service High Voltage Rate 9B Demand Time of Day option- Reduce
19 monthly customer service charge from \$176.93 to \$98.29 to equal the customer
20 service charge in Residential Rate 9. In order to recover the required revenue,

1 increase the energy rate from 2.0165 cents per kilowatt-hour to 2.0324 cents per
2 kilowatt-hour.

3 7. Irrigation Rate 10 and Rate 10 Time of Day option - maintain the monthly
4 customer charges. Increase the demand and energy components by equal
5 percentages to collect the 1.9% increase.

6 8. Small General Service Rate 23 - Maintain the customer service charge at \$3.93.
7 Flatten the declining block rate to send a more appropriate price signal and
8 consistent with minimizing customer rate impacts. Reduce the first 1,500 kWh
9 rate from 7.3150 cents per kilowatt-hour to 7.1211 cents per kilowatt-hour.

10 Increase the rate for all additional kWhs from 4.1012 cents per kilowatt-hour to 4.3
11 cents per kilowatt-hour.

12 9. Small General Service Rate 23B Demand Time of Day - Reduce customer service
13 charge from \$44.76 to \$3.93 to equal the customer service charge in Residential
14 Rate 23. Reduce the seasonal charge from \$565.92 to \$47.16 to equal the seasonal
15 charge in Small General Service Rate 23. Since no customers are currently on this
16 schedule, we do not need to alter the energy rates to collect the necessary revenue
17 requirement but propose energy rates equal the flattened rates we propose for
18 Small General Service Rate 23.

19 10. Mobile Home Park Rate 25 - Maintain the monthly customer charge at \$8.76.
20 Increase the demand and energy components by equal percentages to collect the

1 1.9% increase in revenues.

2 **Q. Do you have any other recommendations for rates 19 & 21?**

3 A. Yes. We recommend permanently moving individual customers from frozen Rates 19 and
4 21 to other applicable rates if and when it can be done without an unreasonable increase to
5 those customers. This is similar to the approach used in the past to consolidate Residential
6 Rate 5 with Rate 1. Demand meters have been installed in response to this same
7 recommendation the rate case before last. Demand meters were needed in order to assist
8 in accomplishing identification of customers to be moved. These two rate schedules have
9 been frozen for over fourteen years with little progress made toward consolidating them
10 with other applicable schedules.

11 **Q. In this case, PacifiCorp witness Mr. Griffith proposes movement of all customers**
12 **from these two rate schedules and elimination of the frozen schedules. Do you**
13 **support this proposal?**

14 A. Because of the rate impacts to some customers, we do not support elimination of the
15 frozen schedules at this time. We do support moving all customers who benefit from the
16 move now to the applicable rate schedules identified by Mr. Griffith and to continue the
17 movement of such customers on an ongoing basis as was done with Rate 5 customers. Mr.
18 Griffith identified an overall rate decrease for many customers moving from Rate 19 to
19 applicable rate schedules and we support this movement. We note that at least one
20 customer would incur an increase of over 60% if moved from Rate 19. There may be

1 others. We recommend allowing customers to remain until movement to another rate
2 would be beneficial or cause a reasonable increase, for example, an increase in line with
3 general inflation.

4 **Q. The rate impact for some customers moving from Rate 19 or 21 is staggeringly high;**
5 **can something be done today to facilitate the smooth movement of all customers from**
6 **these frozen rate schedules at a later date?**

7 A. Yes, we can change the rate design. We propose increasing the demand charge in Rate 19
8 from \$0.67 per kW to \$3.00 per kW and decreasing the energy charge from 7.1837 cents
9 per kilowatt-hour to 5.54 cents per kilowatt-hour. Both of these proposed rates are less
10 than the average unit costs produced for this schedule in the Division's class cost-of-
11 service study and are therefore reasonable rates to facilitate movement of low load factor
12 customers from Rate 19 to other applicable rates. Absent some change in this rate, it may
13 never be beneficial or produce reasonable impacts to move certain customers from this
14 schedule. Similarly, we propose an increase in the demand charge for Rate 21 from \$0.60
15 per kW to \$1.50 per kW and in the energy charge from a declining block rate at various
16 rates to a flat rate of 5.7510 cents per kilowatt-hour. This combination of rate element
17 changes produces a minimum of impact to existing Rate 21 customers though one
18 customer would still incur an impact of nearly 18%. These rate changes are shown and
19 highlighted in bold in Exhibit No. DPU 8.8 pages 21 through 23.

20 **Q. PacifiCorp proposes to impose a 50 MW limit for eligibility to take service on**

1 **General Service Rate 9. Does the Division support this proposal?**

2 A. No. We are not persuaded by PacifiCorp’s arguments that larger customers could cause
3 adverse impacts to existing customers. In addition, we propose a new rate for customers
4 taking delivery at 138 kV. I developed a rate for this new schedule by comparing the unit
5 costs for the Firm Industrial Contracts with those of Rate 9. Exhibit No. DPU 8.9 shows
6 this rate and its derivation. I propose a monthly customer charge equal to Rate 9 of
7 \$98.29, a demand charge of \$5.19 per kW and an energy charge of 1.9391 cents per
8 kilowatt-hour.

9 **CUSTOMER CHARGE**

10 **Q. What is the basis for the customer charge changes?**

11 A. Our proposed customer charge changes are based on our goal of sending appropriate price
12 signals for the time of day rate options. The Company has provided no compelling
13 evidence that the customer cost to serve customers on the general rate schedules versus the
14 time of day rate options is materially different. Further, only seven customers have elected
15 the Residential Rate 2 Time of Day option and no customers have elected the Small
16 General Service Rate 23B; reducing the customer charge could increase the participation
17 rate in these schedules.

18 We recommend that in the future, PacifiCorp report the costs to serve customers on all

1 time of day rate options separately in its class cost-of-service study. Currently, these costs
2 appear to be averaged with the other customers in that class, and hence our
3 recommendation that pricing be consistent between the main and optional rates. However,
4 if a cost difference exists, individual reporting will allow us to view whether these
5 schedules are recovering their costs.

6 **Q. Did the Division do any rate impact analysis?**

7 A. Yes. Exhibit DPU 8.10 shows the impacts to Rate 23 customers of our proposal to flatten
8 that rate. Division witness Dr. Compton also provides impact analysis of our rate design
9 proposal for Residential Rate 1 in Exhibit No. DPU 12.2.

10 **Q. Does this conclude your direct testimony?**

11 A. Yes.