

BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

In The Matter Of The Application	:	Docket No. 03-035-14
Of PacifiCorp For an Order	:	Surrebuttal Testimony Of
Approving Avoided Cost Rates	:	Philip Hayet for the
	:	Committee of
	:	Consumer Services

REDACTED

12 May 2004

1 Introduction

2 **Q. Please state your name, business address and current position.**

3 A. My name is Philip Hayet. My business address is 215 Huntcliff Terrace,
4 Atlanta, Georgia, 30350. I am a utility rate and planning consultant and
5 the owner of the firm Hayet Power Systems Consulting.

6 **Q. Have you previously presented testimony in this docket?**

7 A. Yes. I filed direct testimony on 12 April 2004 on behalf of the Committee
8 of Consumer Services (“Committee”).

9 **Q. What is the purpose of your testimony?**

10 A. The purpose of my testimony is to modify the Committee’s
11 recommendations to the Commission in light of the significant amount of
12 discussions that have taken place between the parties over the past few
13 weeks concerning avoided cost methodologies. I will also provide
14 comments concerning the testimony of witnesses, Rich Collins for UAE,
15 Roger Weaver for PacifiCorp, Roger Swenson for US Magnesium and
16 Desert Power, and William Powell for the Division of Public Utilities
17 (“Division”).

18 **Q. As background, please explain the Committee’s previous
19 recommendations for the calculation of an avoided capacity and
20 energy methodology.**

21 A. For calculating avoided energy costs, the Committee recommended the
22 use of a differential revenue requirement methodology using a production
23 cost model for the entire planning horizon, not just the near term as
24 proposed by the Company. For calculating avoided capacity costs, the
25 Committee recommended using capacity costs associated with the type of
26 capacity resource deferred each year by the QF. The Company’s latest
27 IRP provides the basis for the type of capacity resource that the QFs
28 would be expected to defer through time. The Committee had other
29 recommendations concerning the calculation methodology that I
30 presented in my direct testimony, however, the avoided capacity and

1 energy methodology, as just discussed, have been at the center of much
2 of the debate.

3 **Q. Why is the Committee recommending modifications to this avoided
4 cost methodology?**

5 A. For two reasons. First, having participated in many discussions with
6 parties concerning all of the perceived methodological flaws, it is clear that
7 no one method has emerged as the preferred selection. Some parties
8 advocate the use of the differential revenue requirement approach, while
9 others support a pure proxy method, or the use of a hybrid approach.
10 Even if the Commission were able to determine that one of the competing
11 alternatives was superior, the Commission might find it difficult to
12 completely address all of the issues that have been debated. Second, the
13 Division, in both its direct and rebuttal testimony, has offered reasonable
14 recommendations that provide both a short-term, as well as a long-term
15 solution that the Committee is willing to support.

16 **Q. What does the Committee now recommend?**

17 A. The Division has consistently stated that its preferred methodology to
18 compute avoided energy costs is based on a differential revenue
19 requirement approach. Dr. Powell, on behalf of the Division, also
20 explained that there were practical problems with the method that were
21 raised in the QF working group meetings held in 2003. However, Dr.
22 Powell acknowledged that he didn't believe these problems are
23 insurmountable and he recommended that the QF group continue working
24 toward a viable differential revenue requirement approach for the
25 determination of Schedule 38 rates.

26 The Committee agrees with this recommendation in that it believes
27 the QF working group should be able to resolve any outstanding issues.
28 However, the Committee strongly recommends the Commission establish
29 a date that such issues are resolved.

30 **Q. Please discuss the additional recommendations in the Division's
31 rebuttal testimony.**

1 A. First, I should mention that in its direct testimony, the Division offered an
2 alternative method it called the “hybrid approach”, in the event that the
3 Commission objected to its preferred differential revenue requirement
4 methodology. In its rebuttal, the Division reiterated its support for the
5 differential revenue requirement method, but recognized that because
6 there are open dockets for Desert Power and US Magnesium, an interim
7 method should be implemented. The need for an interim solution arises
8 because the Company needs time to prepare a long-term database that
9 can be used to make differential revenue requirement runs. While the
10 Division recommended once again its hybrid approach as an alternative, it
11 also presented some additional modifications that resulted from
12 discussions with other parties.

13 **Q. What is the Division’s hybrid approach?**

14 A. The hybrid approach is similar to the Company’s proposal in that it uses a
15 differential revenue requirement for the sufficiency period and then
16 switches to a proxy plant approach during the insufficiency period. The
17 differential revenue requirement analysis requires two-production cost
18 modeling runs to be performed, one with and the other without a zero cost
19 QF modeled in the database. The difference in the production costs
20 derived from the two runs divided by the energy generated by the QF in
21 the one run, is the avoided energy cost payment in \$/mWh. The Company
22 proposed that the QF be modeled as a 10 MW resource in the run with the
23 QF. Alternatively, Dr. Powell recommended that the QF be modeled with
24 the same characteristics as the QF that applies to PacifiCorp for the QF
25 rate. So, for instance, if a 100 MW QF applies to PacifiCorp, then the
26 resource modeled in the run with the QF would be sized at 100 MW.
27 During the insufficiency period, Doctor Powell’s method then would be
28 converted to a proxy plant approach, which he originally based on the
29 capacity and energy costs of a combined cycle unit.

30 **Q. Does the Committee support the Division’s interim avoided cost**
31 **method?**

1 A. With the additional modifications that Dr. Powell proposed in his rebuttal
2 testimony, the Committee supports the Division's hybrid proposal for use
3 as an interim solution until the QF working group can agree upon a
4 method for the long-term. For instance, the Division now supports the use
5 of a blended proxy unit to calculate avoided costs during the insufficiency
6 period, which is consistent with the Committee's approach to calculate
7 avoided capacity costs.

8 **Q. Please state all of Dr. Powell's modifications that the Committee**
9 **favours.**

10 A. There are four modifications that the Division made. The first one is
11 repeated for the sake of a complete list.

- 12 • Calculation of capacity costs using a mixture of coal and CCCT
13 costs in the years when a proxy plant is called for;
- 14 • The use of a higher gas price forecast;
- 15 • The use of 5 months of capacity payments during the sufficiency
16 period, instead of 3 as originally recommended by the Company¹.
17 Although this is a very small issue, the Committee still supports
18 making 6 months of capacity payments during the sufficiency
19 period for reasons that are explained in the Committee's 9 April
20 2004 memo to the Commission concerning Schedule 37 QF rates;
21 and,
- 22 • The use of a set gas price forecast to establish a schedule for the
23 QF payments.

24 These four adjustments are further explained in Dr. Powell's testimony.
25 The Committee believes that the Committee's approach that relies on the
26 differential revenue requirement methodology is still the best way to
27 compute avoided costs. However, for purposes of an interim method, the
28 Committee concludes that the Division's modified hybrid proposal is
29 reasonable and achieves some of the same goals as the Committee's

¹ PacifiCorp indicated in its 19 April 2004 Schedule 37 comments that it supports a five-month period for capacity payments.

1 does. For example, the calculation of capacity costs using a mixture of
2 coal and CCCT capacity costs is similar to the Committee's
3 recommendation that the avoided capacity calculation should be made up
4 of the costs associated with the units that the QF would defer over time.

5 **Q. Please summarize the Committee's recommendations.**

6 A. The Committee has not wavered in its support of its approach based on
7 the differential revenue requirement methodology. However, in light of the
8 fact that there are still significant differences among the parties, the
9 Committee believes that the QF working group would be the best place to
10 decide these matters for the long-term. In the short-term, the Committee
11 supports the use of the interim avoided cost methodology as explained in
12 Dr. Powell's testimony. The Committee has one adjustment to the
13 Division's interim approach, and that is to calculate the capacity cost
14 during the sufficiency period using 6 months instead of 5.

15 **Q. Do you have comments regarding the rebuttal testimony of any of**
16 **the other witnesses?**

17 A. First, I would like to respond to Dr. Collins' criticisms of the use of the
18 differential revenue requirement methodology. Dr. Collins has conducted
19 a very thoughtful review of the alternative avoided cost calculation
20 methodologies proposed by the Company, Division, Committee, and
21 Desert Power/US Magnesium. It appears that one of his biggest concerns
22 relates to the use of the differential revenue requirement methodology.

23 **Q. Please describe what Dr. Collins considers to be flaws in the**
24 **methodology.**

25 A. While Dr. Collins acknowledges that an approach using a production cost
26 modeling tool has a "strong theoretical appeal," he believes the results can
27 only be accurate to the extent that the planning assumptions used in the
28 model are accurate. The second flaw he refers to is the fact that parties
29 would not be able to independently verify and reproduce results.

30 **Q. Do you agree with Dr. Collins' alleged flaws in the differential**
31 **revenue requirement methodology?**

1 A. It would be hard to argue with Dr. Collins about the fact that the accuracy
2 of any future planning activity depends largely on the accuracy of the input
3 assumptions. However, there is no better way that I am aware of to make
4 future projections than to develop the most reasonable assumptions
5 possible and conduct a simulation using a model. This is done in the
6 utility industry, as it is done in almost any other industry that needs to
7 predict future operating costs. I am also unaware of any other electric
8 utility that has been forced to forego the use of its planning tools to
9 develop future production costs out of a concern that the assumptions are
10 uncertain. Perhaps an alternative solution to Dr. Collins' concern
11 regarding uncertainty is that the QF working group could consider ways to
12 capture uncertainty in the avoided cost development, while still relying on
13 production cost modeling. The Committee has recommended one
14 solution, which would be to include a step that converts the avoided
15 energy costs to an implied heat rate, and then at the time the energy is
16 sold to the utility, the actual QF payment would be determined by
17 multiplying the implied heat rate by an actual indexed gas price. In fact,
18 on page 20 of Dr. Collins' testimony, he supported this idea in his
19 statement that "UAE is in favor of a method of determining avoided energy
20 cost that relies on actual gas prices."

21 **Q. Please comment on Dr. Collins' concern that the utility is the only**
22 **party capable of independently verifying and reproducing results of**
23 **its production cost models.**

24 A. There is no doubt that a utility is better positioned to make use of its
25 modeling tools than parties on the outside. However, I am aware of many
26 people within the different PacifiCorp jurisdictions that have analyzed
27 results using the same modeling tools that the Company used. It has also
28 been my experience, having spent over 15 years working for one of the
29 largest production cost model developers in the country, that once a utility
30 makes a long-term commitment to a production cost tool, parties external
31 to the utility, in time, also find ways to gain experience with the tool.

1 Subsequently, arguments between parties in regulatory proceedings
2 become less focused on the way the model works, and more focused on
3 data assumptions.

4 **Q. What is your position regarding Dr. Collins' concern about access to**
5 **the model?**

6 A. I agree with Dr. Collins' recommendation that if a production cost model is
7 used to develop the avoided costs, then the model should be readily
8 accessible to the external parties. In most of the cases that I have been
9 involved with PacifiCorp, I have had access to the production cost models
10 that the Company used. This has included PD-MAC, the Spreadsheet
11 production cost model, GRID and various other spreadsheet models that
12 the Company developed. I would hope that if PROSYM is used, the
13 Company could work out an arrangement, which would permit parties to
14 have access to the model at little or no cost.

15 **Q. Does the Committee agree that Dr. Collins' approach to rely on a**
16 **proxy unit provides better results than a production cost model?**

17 A. No. In order for the proxy approach to have a chance to produce
18 reasonable avoided costs, the operating characteristics of the proxy plant
19 would have to closely match the QF characteristics. A production cost
20 model has an advantage in this regard because one can model the
21 specific characteristics of the QF in the model and then derive avoided
22 cost results from the simulation. Furthermore, as Exhibit CCS SR-2.1
23 shows, depending on what unit and what capacity factor is selected for
24 use as the proxy unit, avoided costs can change significantly. Both Dr.
25 Collins and PacifiCorp have advocated for the use of a combined cycle
26 unit as the proxy for the long-term avoided cost payment. In the case of
27 avoided energy costs, which make up the largest payment to the QF, it is
28 difficult to know what should be used as the avoided energy proxy unit.
29 This determination is exactly what a production cost model is designed to
30 do. In PacifiCorp's case, in one hour the avoided energy cost might be
31 based on a Gadsby SCCT, in another hour – the Currant Creek CCCT

1 unit, and in another hour - one of the Company's coal units. So, while Dr.
2 Collins believes that a production cost model has its flaws because input
3 data is uncertain, the Committee believes the proxy approach is flawed
4 because the resource it uses to calculate avoided energy costs is pre-
5 determined, yet in reality the avoided cost resource varies on an hourly
6 basis depending on the loads and resources of the system.

7 **Q. Does the Committee believe that using a CCCT as the proxy plant**
8 **may cause overstated energy costs?**

9 Yes. The Committee believes its approach would better capture the
10 changes that would impact the system over time. For instance, as can be
11 seen from Exhibit CCS SR-2.1, a coal unit appears to be a very economic
12 resource addition for the PacifiCorp system. If the IRP anticipates that a
13 new coal unit will be planned for the system, then the Company's avoided
14 energy costs would be lower than what would be determined using the
15 proxy approach tied to the cost of a combined cycle unit. Therefore, using
16 only a CCCT would overstate the avoided energy costs.

17 **Q. Do any parties advocate the use of something other than a CCCT as**
18 **the avoided cost unit?**

19 A. Yes. Roger Swenson advocates the use of the West Valley Contract as
20 the deferred resource. As can be seen from Exhibit CCS SR-2.1, the cost
21 of the West Valley lease is very expensive compared to the cost of a
22 CCCT or coal unit. To establish the West Valley lease as the avoided cost
23 proxy unit would overstate the avoided cost at any capacity factor.

24 **Q. What is your response to Roger Weaver's contention that the**
25 **Committee's gas price forecast should be rejected?**

26 A. I might be inclined to respond differently if the Company could illustrate
27 how its forecast is superior to the Committee's. However, Mr. Weaver
28 simply states that the Company relies on PIRA for assistance in
29 developing its fuel price forecasts. Certainly PIRA is a respected
30 forecasting company, but just like every other forecaster, PIRA will also
31 provide forecasts that prove to be wrong, especially when trying to predict

1 volatile natural gas prices. Mr. Weaver's recommendation that, as a
2 matter of policy, the Commission should always rely on the Company's
3 gas price forecast should be rejected. There is no basis that a utility's gas
4 price forecast is so superior to any other party's that its forecast should
5 always be used. If that were the case, then the Company would have
6 predicted a few years ago that gas prices would go over \$5.00/MBTU at
7 Opal, as they are today.²

8 **Q. Mr. Weaver considered your 40-cent per decatherm differential**
9 **between Opal and NYMEX Henry Hub to be too low. Please respond**
10 **to that.**

11 A. First, I would point out that on 5 May 2004 the Committee sent a letter to
12 the Commission, that indicated the Committee agrees that a 40-cent per
13 decatherm differential is too low. Therefore, the Committee altered its
14 recommendation to use 70 cents, based on an additional analysis it
15 conducted using historical data. However, even in using this revised
16 differential, the Commission should be aware, that in the case of the Opal
17 market, there are structural changes that are occurring that most experts
18 believe will bring Opal closer to other indexes such as Henry Hub. Mr.
19 Weaver reviewed historical results and determined that on average the
20 historical differential is \$1.02 between Opal and NYMEX, for the period
21 covering January 2001 through March 2004. I would submit that the use
22 of an average that goes back to 2001 is not representative as a predictor
23 of the future because of these structural changes.

24 Although Mr. Weaver indicates in his testimony that PacifiCorp
25 takes into consideration such things as pipeline capacity expansion in
26 developing its forecast, as of June 1, 2003 with the completion of the Kern
27 River Pipeline Expansion Project, the average differential between Henry
28 Hub and Opal has been only \$.57/decatherm, almost half of the \$1.02
29 average that Mr. Weaver determined by going back to 2001. For this
30 reason, the Committee reiterates that a differential of \$.70/decatherm is a

² Enerfax Daily quoted an Opal price of \$5.49/MBTU on Wednesday May 12, 2004.

1 reasonable compromise to use as a basis differential for developing a gas
2 price forecast, especially as the western markets become more
3 interconnected with the load centers.

4 **Q. Does this conclude your testimony?**

5 A. Yes.

Confidential Exhibit
CCS SR-2.1

*These data are representative of costs for these technologies. For instance, there are other adjustments that Dr. Powell proposes and that the Company has accepted that are not included in these costs. It is the Committee's intention that such costs will be reviewed by the working group.