

**BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH**

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	)	<b>Docket No. 04-035-42</b>
<b>In the Matter of the Application</b>	)	
<b>Of PacifiCorp for Approval of</b>	)	<b>PRE-FILED DIRECT TESTIMONY OF</b>
<b>Its Proposed Electric Service</b>	)	<b>ANTHONY J. YANKEL</b>
<b>Schedules and Electric</b>	)	<b>FOR THE COMMITTEE OF</b>
<b>Service Regulations</b>	)	<b>CONSUMER SERVICES</b>

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**3 December 2004**

1 **INTRODUCTION**

2 **Q. PLEASE STATE YOUR NAME, OCCUPATION AND BUSINESS**

3 **ADDRESS.**

4 A. I am Anthony J. Yankel. I am President of Yankel and Associates, Inc. My  
5 address is 29814 Lake Road, Bay Village, Ohio, 44140.

6 **Q. WOULD YOU BRIEFLY DESCRIBE YOUR EDUCATIONAL**

7 **BACKGROUND AND PROFESSIONAL EXPERIENCE?**

8 A. I received a Bachelor of Science Degree in Electrical Engineering from  
9 Carnegie Institute of Technology in 1969 and a Master of Science Degree in  
10 Chemical Engineering from the University of Idaho in 1972. From 1969  
11 through 1972, I was employed by the Air Correction Division of Universal Oil  
12 Products as a product design engineer. My chief responsibilities were in the  
13 areas of design, start-up, and repair of new and existing product lines for  
14 coal-fired power plants. From 1973 through 1977, I was employed by the  
15 Bureau of Air Quality for the Idaho Department of Health & Welfare, Division  
16 of Environment. As Chief Engineer of the Bureau, my responsibilities  
17 covered a wide range of investigative functions. From 1978 through June  
18 1979, I was employed as the Director of the Idaho Electrical Consumers  
19 Office. In that capacity, I was responsible for all organizational and  
20 technical aspects of advocating a variety of positions before various  
21 governmental bodies that represented the interests of the electrical  
22 consumers in the State of Idaho. Since that time, I have been in business  
23 for myself. I am a registered Professional Engineer in the states of Ohio

1 and Idaho. I have presented testimony before the Federal Energy  
2 Regulatory Commission (FERC), as well as the State Public Utility  
3 Commissions of Idaho, Montana, Ohio, Pennsylvania, Utah, and West  
4 Virginia.

5 **Q. ON WHOSE BEHALF ARE YOU TESTIFYING?**

6 A. I am testifying on behalf of the Utah Committee of Consumer Services  
7 (Committee or CCS).

8 **Q. PLEASE SUMMARIZE YOUR TESTIMONY AND RECOMMENDATION?**

9 A. My revenue requirement testimony addresses the need to correct the  
10 results of the Company's net power cost model (GRID) to reflect more  
11 appropriate prices for Short-Term Firm (STF) purchases and sales. The  
12 Company's proposed prices for STF transactions in this case are  
13 unreasonable -and fail to reflect the actual STF price relationships that have  
14 been experienced in recent years. Using the historical relationship between  
15 STF sales and purchase prices, I recommend an adjustment to the  
16 Company's level of net power costs of \$22,827,137 on a total Company  
17 basis or \$9,566,419 on a Utah Jurisdictional basis.

18 **OVERVIEW OF STF PURCHASES AND SALES**

19 **Q. ARE STF SALES AND PURCHASES A LARGE PART OF PACIFICORP'S**  
20 **OPERATION?**

21 A. Generally speaking STF purchases/sales can amount to 15%-20% of the  
22 overall system input/output. By way of example, CCS Exhibit 8.1  
23 demonstrates the relative amount of STF purchases during each hour of

1 January 2003. Page 1 of CCS Exhibit 8.1 lists the percentage of the system  
2 input that came from STF purchases during each hour of January 2003. As  
3 can be seen from this page for January 2003, the relative amount of input  
4 associated with STF purchases runs between 7% and 18%. There is a  
5 slightly smaller percentage of input associated with STF purchases during  
6 the nighttime off-peak hours of 10:00 p.m. through 6:00 a.m., but it appears  
7 that Sundays (although generally considered off-peak) do not have similar  
8 patterns compared to those of other days of the week.

9 Page 2 of CCS Exhibit 8.1 lists the total STF purchased for each hour  
10 in January 2003 and Page 3 of CCS Exhibit 8.1 lists total system input for  
11 those same hours. The values on page 2 are divided by the respective  
12 values on page 3 to get the resulting percentages on page 1. The STF  
13 purchases for January 2003 range from a low of 713 MW's to a high of  
14 1,797 MW's.

15 **Q. IS THERE ANOTHER WAY TO PUT THE MAGNITUDE OF THE STF**  
16 **PURCHASES IN PERSPECTIVE THAN SIMPLY LOOKING AT THE**  
17 **PERCENTAGE OF THESE PURCHASES TO TOTAL SYSTEM INPUT?**

18 A. Yes. Another way to get a perspective of the magnitude of the STF  
19 purchases is to only compare them to system generation. Although  
20 PacifiCorp is a major producer of electricity in the region, it significantly adds  
21 to its Company-owned generation resources through purchases. Page 1 of  
22 CCS Exhibit 8.2 lists the percentage of STF purchases relative to system  
23 generation during each hour of January 2003. As can be seen from this

1 page, the relative amount of input associated with STF purchases compared  
2 to system generation runs between 11% and 32%. Once again, there is a  
3 slightly smaller percentage of STF purchases compared with system  
4 generation during the nighttime off-peak hours, but it appears that Sundays  
5 have a somewhat different pattern.

6 Page 2 of CCS Exhibit 8.2 lists the total STF purchases for each hour  
7 in January 2003 and Page 3 of CCS Exhibit 8.2 lists the system generation  
8 for those same hours. The values on page 2 are divided by the respective  
9 values on page 3 in order to get the resulting percentages on page 1.

10 **Q. APART FROM THE OVERALL MAGNITUDE OF THE STF ACTIVITY,**  
11 **ARE THERE OTHER OBSERVATIONS YOU CAN MAKE REGARDING**  
12 **THE HISTORICAL STF DATA?**

13 A. Yes, there are several. In addition to the fact that STF activity is so large,  
14 the most obvious thing to observe is that it is so consistently large. As  
15 pointed out above, the lowest level of STF purchases that occurred in any  
16 hour of January 2003 was 713 MW's. There is virtually no hour in the year  
17 when STF activity becomes insignificant.

18 Another observation is that STF activity is usually done in blocks.  
19 For example, CCS Exhibit 8.1 (page 2) indicates that on January 10, 2003,  
20 with the exception of four hours, the STF Purchases were either 838 MW's  
21 or 1,160 MW's.

1 **Q. YOUR EXAMPLE HAS ONLY CONSIDERED STF PURCHASES.**  
2 **PLEASE DISCUSS WHAT OBSERVATIONS CAN BE MADE**  
3 **REGARDING THE STF SALES DATA.**

4 A. CCS Exhibit 8.3 lists the hourly STF Sales made by PacifiCorp in January  
5 2003. The two most obvious things about this data are that sales activity is  
6 spread out over each hour of the month and involves very large volumes.  
7 The lowest level of STF sales was 1,304 MW's and the highest level of STF  
8 sales was 3,342 MW's.

9 **Q. ARE THERE OTHER OBSERVATIONS THAT CAN BE MADE REGARDING**  
10 **THE STF SALES AND PURCHASES?**

11 A. Yes. The STF sales and purchases are not only large in amount and  
12 occur during each hour, but are also offsetting. For example, during the  
13 first hour of January 2003 there was 773 MW's of STF purchased (CCS  
14 Exhibit 8.1 page 2) and there was 1,837 MW's of STF sold (CCS Exhibit  
15 8.3). As it turns out, for January 2003 there was not only a net output of  
16 STF activity, but there was a net output of STF activity during each hour—  
17 all STF purchases were completely canceled by STF sales. The net  
18 impact of the hourly STF activity for January 2003 is shown on CCS  
19 Exhibit 8.4.

20 There are many months (mostly winter months) with a similar  
21 pattern of a large amount of STF purchases that are completely offset

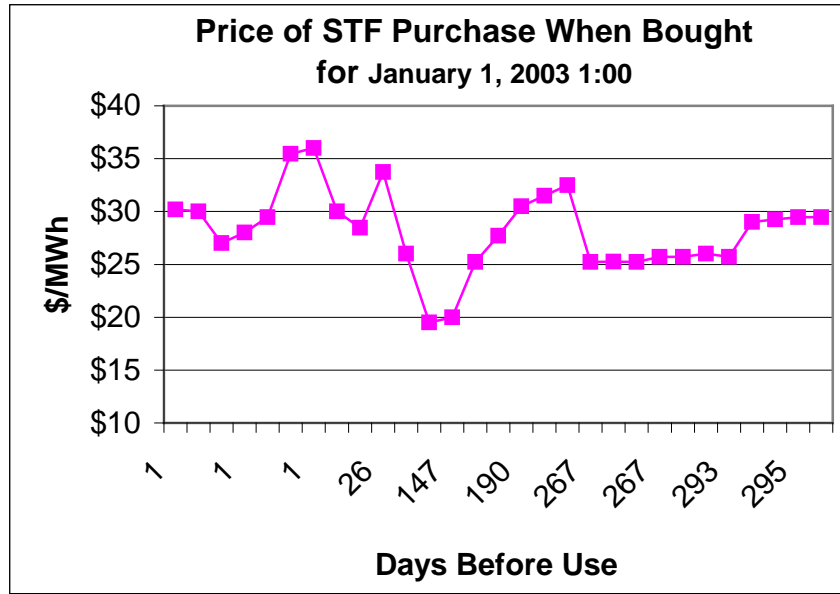
1 each hour by an even larger amount of STF sales<sup>1</sup>. The summer months  
2 also have very large amounts of STF purchases, but the STF sales are  
3 less than the purchases during the peak hours (including Sundays). This  
4 results in a net input of STF purchases during the summer peak hours.

5 **Q. REGARDING THE STF MARKET, IS THE COMPANY'S STF POSITION**  
6 **STATIC OR DYNAMIC?**

7 A. The Company's position in the STF market (purchase and sales) is  
8 dynamic. PacifiCorp may buy (or sell) STF power for a given day and given  
9 hour more than a year in advance, or it may be buying and selling STF  
10 power right up to a specific hour. Basically, the STF purchases listed on  
11 page 2 of CCS Exhibit 8.1 and the STF sales listed on CCS Exhibit 8.3 are  
12 the accumulation of a large number of transactions that have taken place  
13 over a long period of time. The following graph lists the price paid and the  
14 days ahead of time the transaction was made for each purchase that  
15 comprised the total STF purchases for the first hour of 2003 (a light load  
16 hour).

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<sup>1</sup> January 2003 is the only month in 2003 with every hour having more STF sales than STF purchases. In February, March, and December 2003, the percentage of hours where STF sales were greater than STF purchases was 97%, 97%, and 94%, respectively.



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Because these transactions occur as a number of discrete events

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over a long period of time, it should be recognized that each of these

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transactions has a tendency to reflect a different rate (\$/MWh). The ultimate

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price to be received (paid) by PacifiCorp will be the total of all STF sales

6

and purchase transactions that take place for a given hour or month.

7 **Q.**

**ARE THE PRICES PAID FOR STF PURCHASES SIMILAR TO THOSE**

8

**RECEIVED FOR STF SALES?**

9 **A.**

At any specific point in time at any given western market hub (e.g., Palo

10

Verde, Four Corners, COB, etc.), the price paid for a given STF product by

11

PacifiCorp should be the same as the price that others would be willing to

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pay PacifiCorp under the same terms and conditions. PacifiCorp may be

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able to buy a product at one market hub, and sell that same product at a

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different market hub for a different price. But the buy/sell price for a product

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at a particular market hub should be the same at any specific point in time.



1           The fact that for more than a year in advance PacifiCorp may be  
2           buying and selling for any given hour at the same hub results in a price  
3           differential between PacifiCorp's STF sales and purchases. The net price  
4           differential between STF sales and purchases reflects this market dynamic.

5           Another variable is the type of product being purchased or  
6           sold in the STF market. If PacifiCorp were just purchasing on-peak and  
7           selling off-peak, one should expect a larger differential in the prices received  
8           for sales compared to the prices paid for purchases. The fact that  
9           PacifiCorp buys and sells very large quantities of STF power during the  
10          same hours greatly reduces this price differential.

11   **Q.   HOW MUCH VARIATION HAS HISTORICALLY EXISTED BETWEEN THE**  
12   **PRICES PAID BY PACIFICORP FOR STF PURCHASES AND SALES?**

13   A.   CCS Exhibit 8.5 lists for the period January 2002 through May 2004 (29  
14   months) the total STF purchases and sales by quantity and price. Also,  
15   listed in columns "C" and "F" are the average prices for both STF purchases  
16   and sales, respectively.

17          Column "G" lists the ratio of the purchase price divided by the sale  
18   price for each month. With the exception of August and September 2002,  
19   the price of STF purchases was within 95%-113% of the price for STF  
20   sales.

21          Column "H" lists the average difference between PacifiCorp's STF  
22   purchase/sales prices that was experienced over this 29-month period. For  
23   example, the average of the ratio between purchase/sales prices for

1 January was 105% (average of 113%, 99%, and 104%). By averaging  
 2 these ratios over 29 months, a more generalized picture emerges of the  
 3 ratio of the STF purchase/sales prices:

4 Table 8-1

average  
in/out rate

Jan	105%
Feb	101%
Mar	103%
Apr	100%
May	101%
Jun	101%
Jul	107%
Aug	120%
Sep	121%
Oct	100%
Nov	99%
Dec	98%

5  
 6 On a historical basis, the actual price difference between STF purchases  
 7 and sales is exactly what one would expect it to be—in a relatively narrow  
 8 range.

9 **Q. HOW DOES THE STF ACTIVITY IN THE COMPANY'S GRID MODEL**  
 10 **COMPARE TO THE HISTORICAL INFORMATION CONTAINED ON CCS**  
 11 **EXHIBIT 8.6?**

12 A. CCS Exhibit 8.6 contains a summary by month of the results of PacifiCorp's  
 13 STF activity from its GRID model for the projected test year. There are a  
 14 number of obvious differences between what is used in the GRID model and  
 15 what has occurred on an historical basis. One of the most significant

1 differences is the very small quantity of STF purchases and sales contained  
 2 in the Company's GRID model compared to historical levels of STF activity.

3 Table 8-2

	Company Test Year Purchases <u>MWH</u>	Company Test Year Sales <u>MWH</u>	Historic Average Sales <u>MWH</u>	Historic Average Purchases <u>MWH</u>
Jan 06	30,000	319,200	986,414	1,485,248
Feb 06	28,800	283,200	976,370	1,321,276
Mar 06	32,400	312,000	1,375,867	1,848,445
Apr 05	126,725	491,100	2,257,758	2,435,110
May 05	125,800	511,000	2,501,465	2,466,701
Jun 05	137,200	484,400	2,522,190	2,180,925
Jul 05	295,800	325,000	2,271,189	1,570,946
Aug 05	315,000	282,600	1,796,583	1,454,324
Sep 05	296,000	478,000	1,509,394	1,577,275
Oct 05	124,325	485,950	1,441,717	1,586,688
Nov 05	120,000	438,000	1,234,936	1,298,099
Dec 05	124,200	452,400	1,145,159	1,437,286
Total	1,756,250	4,862,850	20,019,041	20,662,322

4  
 5 As illustrated in Table 8-2 above, test year purchases in GRID are less than  
 6 10% of those that have historically taken place, while test year sales in  
 7 GRID are projected at less than 25% of historical levels.

8 Another major difference exists in comparing the historic STF  
 9 purchase and sales prices to the STF prices forecasted in the Company's  
 10 future test year.

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Table 8-3

	Test Year \$/MWh <u>Purchases</u>	Test Year \$/MWh <u>Sales</u>	Purchase/ Sales <u>Rates</u>	Historic Average Purchases \$/MWH	Historic Average Sales \$/MWH	Historic Purchase/ Sales <u>Rates</u>
Jan	\$57.42	\$38.86	148%	\$34.99	\$33.53	104%
Feb	\$57.42	\$39.29	146%	\$34.27	\$34.12	100%
Mar	\$57.42	\$39.41	146%	\$37.25	\$36.34	103%
Apr	\$50.04	\$32.43	154%	\$33.75	\$33.73	100%
May	\$49.46	\$32.06	154%	\$33.14	\$32.50	102%
Jun	\$51.31	\$32.41	158%	\$31.27	\$30.92	101%
Jul	\$56.89	\$36.37	156%	\$39.63	\$37.51	106%
Aug	\$57.25	\$36.76	156%	\$44.13	\$37.65	117%
Sep	\$53.71	\$42.25	127%	\$41.86	\$35.76	117%
Oct	\$49.42	\$38.42	129%	\$33.90	\$34.02	100%
Nov	\$49.37	\$38.91	127%	\$33.65	\$34.01	99%
Dec	\$49.44	\$38.96	127%	\$35.71	\$36.34	98%

3

4

As shown in Table 8-3 above, the difference in STF purchase and sales

5

prices in the Company's test year is extremely large compared to the

6

actual/historical STF purchase and sales price difference. Although the

7

Company's projected STF sales prices appear to be slightly lower than price

8

levels experienced in the most recent 12 months of data<sup>2</sup>, the STF purchase

9

prices are substantially above historical price levels.

10

**Q. IS THERE ANYTHING TO WHICH THESE DIFFERENCES IN VOLUMES**

11

**AND PRICES CAN BE ATTRIBUTED?**

12

A. Yes, there is. In developing its prices for test year STF purchases and

13

sales, it is my understanding PacifiCorp only used the STF transaction

14

prices that were available at the time of the filing. In other words, the prices

<sup>2</sup> CCS Exhibit 8.5 lists an average STF sale price for the most recent 12-month period (June 2003-May 2004) of \$39.62 per MWH.

1 used in the Company's filing only reflect a small sample of the actual  
2 transactions that can be anticipated to occur over time. As I previously  
3 indicated, there are larger price differentials when one looks at each STF  
4 transaction that is made for a given date and hour. In developing its price  
5 forecast for STF purchases and sales, the Company merely utilized the  
6 limited data it had on hand and did not take into consideration where the  
7 price differential would end up at the time the transactions take place. Thus,  
8 an adjustment needs to be made to reflect the close relationship between  
9 the prices for STF sales and purchases that has historically existed and is  
10 supported by 29 months of actual data.

11 **Q. WHAT ADJUSTMENTS COULD BE MADE TO THE COMPANY'S FILING**  
12 **TO CORRECT FOR THIS MISMATCH OF STF DATA BETWEEN ACTUAL**  
13 **RESULTS AND FORECASTED RESULTS?**

14 A. The Company's filing simply ignores the close relationship that exists  
15 between STF sales and purchase prices that are developed over a large  
16 number of transactions (many offsetting). The most straightforward way to  
17 correct the deficiency in the Company's filing would be to use the historical  
18 STF price ratios to bring the test year sales and purchase prices in line with  
19 each other.

20 The key question is: Should the historical ratios be applied to STF  
21 sales prices or STF purchase prices? I propose using the Company's filed  
22 STF sales and purchase quantities and its forecasted average monthly STF  
23 sales prices, and then develop new forecasted average monthly STF

1 purchase prices based on the historical STF sales/purchases price ratio  
2 (See CCS Exhibit 8.7).

3 For example, PacifiCorp forecasts an average STF sales price for  
4 January 2006 of \$38.86 per MWh. I consider the Company's forecast of  
5 STF sales prices to be conservative because they are below the STF sales  
6 price of \$40.83 per MWh realized in the most recent January data available  
7 (2004), and it is below the average STF sale price of \$ 39.62 per MWh for  
8 the most recent 12 months of data available<sup>3</sup>. Historically, the average STF  
9 purchase price was 105% of the average STF sales price. In order to  
10 calculate a corresponding average STF purchase price for January 2006,  
11 the Company's forecasted STF sales price should be multiplied by 105% in  
12 order to develop a forecasted STF purchase price of \$40.93 per MWh.

13 The approach set forth in CCS Exhibit 8.7 lowers the price of STF  
14 purchases by a substantial amount: \$22,827,137 on a Total Company  
15 basis.

16 **Q. WHAT RESULTS ARE OBTAINED IF YOU ASSUME THE COMPANY'S**  
17 **STF PURCHASE PRICES ARE CORRECT AND MAKE AN**  
18 **ADJUSTMENT TO THE STF SALES PRICES IN ORDER TO MAINTAIN**  
19 **THE HISTORICAL RELATIONSHIP (PRICE RATIO) BETWEEN THE**  
20 **COMPANY'S STF SALES AND PURCHASE PRICES?**

21 A. The method (mathematical process) is essentially the same, but the results  
22 are markedly different. By maintaining the STF Sales and Purchase

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<sup>3</sup> The most recent 12 months of data consists of June 2003 through May 2004. The average STF sales price over these 12 months is listed on CCS Exhibit 8.5.

1 volumes, along with STF purchase prices, at the levels used by the  
2 Company, and only changing the STF sales price to match the historical  
3 price ratio between STF purchase and sales prices, the revenue from STF  
4 sales is significantly increased by \$66,146,416 on a Total Company basis.  
5 This calculation is shown in CCS Exhibit 8.8.

6 **Q. YOU RECOMMEND USING THE COMPANY'S STF SALES PRICES AS**  
7 **THE STARTING POINT FOR YOUR ADJUSTMENT. THIS RESULTS IN**  
8 **A \$22 MILLION ADJUSTMENT COMPARED TO A POTENTIALLY**  
9 **LARGER ADJUSTMENT OF \$66 MILLION. WHY DID YOU PICK THE**  
10 **STARTING POINT THAT RESULTS IN A LOWER ADJUSTMENT?**

11 A. The intent of my recommendation is not to formulate the maximum  
12 adjustment possible, but one that makes sense. I chose to start with the  
13 Company's forecast of STF sales prices because they were close to  
14 (although approximately 7% below<sup>4</sup>) the most recent 12 months of data.

15 The historical data confirms that the Company's forecasted (test  
16 year) STF purchase prices are dramatically higher than actual STF  
17 purchase prices. If a more realistic or accurate STF purchase price can be  
18 developed, the above analysis could be applied to determine an alternative  
19 adjustment.

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21  
22  

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<sup>4</sup> CCS Exhibit 8.6 indicates that the average STF sales price used by the Company was \$36.93 per MWH. CCS Exhibit 8.5 indicates that the actual average STF sales price realized over the last 12 months was \$39.62 per MWH.

1 **Q. WHAT IS THE IMPACT OF YOUR RECOMMENDED ADJUSTMENT ON A**  
2 **UTAH JURISDICTIONAL BASIS?**

3 A. Using the SG allocation factor of 41.9081% decreases net power costs by  
4 \$9,566,419 on a Utah basis.

5 **Q. DOES THIS CONCLUDE YOUR PREFILED TESTIMONY?**

6 A. Yes, it does.