Before the

Public Utilities Commission

of the State of Idaho

In the Matter of the Application of PacifiCorp, dba Utah Power & Light Company for Approval of Interim Provisions for the Supply of Electric Service to Monsanto Company	))))	**CASE NO. PAC-E-01-16**

Rebuttal Testimony and Exhibit of

Dr. Alan Rosenberg

On behalf of

Monsanto Company

September 2002

Project 7402

BAI

BRUBAKER & ASSOCIATES, INC.

PACIFICORP

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Rebuttal Testimony of Dr. Alan Rosenberg

I. INTRODUCTION AND SUMMARY

Q PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A My name is Dr. Alan Rosenberg, 1215 Fern Ridge Parkway, Suite 208, St. Louis, MO 63141-2000.

Q ARE YOU THE SAME ALAN ROSENBERG WHO PREVIOUSLY FILED DIRECT TESTIMONY ON BEHALF OF MONSANTO IN THIS DOCKET?

A Yes.

Q WHAT ISSUES ARE YOU ADDRESSING IN YOUR REBUTTAL TESTIMONY?

A I am rebutting Mr. Schunke testifying on behalf of the Idaho Public Utilities Commission, and Mr. David Taylor testifying on behalf of PacifiCorp. These witnesses have made recommendations about the proposed firm price, the valuation of interruptibility, and the treatment of the $30 million payment by Monsanto in 1995. Each of these topics is separately addressed. The fact that I do not address a specific issue or recommendation made by either of these witnesses should not be interpreted as an endorsement of their position and/or recommendation.

Q PLEASE COMMENT ON MR. SCHUNKE'S TESTIMONY IN THIS PROCEEDING.

A Mr. Schunke has concurred with the Monsanto position that an integrated five year contract, with interruptible provisions and pricing clearly laid out, is imperative. Mr. Schunke has also corroborated my position that Monsanto's rate, as a native load customer, should be based on the average cost of PacifiCorp's embedded generation resources, not the cost of incremental or marginal resources as Mr. Taylor implies.

Q WHERE DO YOU DISAGREE WITH MR. SCHUNKE AND/OR MR. TAYLOR?

A First, Mr. Schunke only looked at one way to evaluate the reasonableness of Monsanto's proposed rate – the avoided resource approach – whereas in my analysis that method was just one among several. Mr. Schunke's derived figure, even if correct, would be an outlier. As I will demonstrate later, once Mr. Schunke's valuation is corrected, his approach yields a net price much closer to my recommended rate.

Second, Mr. Schunke seemed to accept, uncritically, Mr. Taylor's derivation of the firm cost of serving Monsanto. While I can appreciate, if not agree with, Mr. Schunke's reservations concerning Ms. Iverson's use of the 8 CP method and the use of the more conventional fixed/variable method instead of the 75/25 classification, Ms. Iverson supported other corrections as well. Ms. Iverson will address cost study issues in her rebuttal testimony.

Third, Mr. Schunke again seemed to accept without question, PacifiCorp's view of the $30 million contribution by Monsanto, rather than the Commission's stated language that the regulatory treatment of this payment was to be decided in the future. In his rebuttal testimony, Mr. Taylor assigns the $30 million to <u>either</u> the 1992 contract or the 1995 contract.

Fourth, both Mr. Taylor and Mr. Schunke have ignored the principle of gradualism and avoidance of rate shock in reaching their recommendations.

Fifth, Mr. Schunke diverges from his own analysis. For example, while his Exhibit 101 justifies a rate as low as $19.20 per MWH based on certain interruptible provisions, Mr. Schunke ignores his own analysis and recommends a lower bound of $23 per MWH, which is higher than his own analysis.

Sixth, Mr. Schunke's analysis of the avoided cost of a peaker is in error. Under Monsanto's proposed interruptibility provisions, Mr. Schunke found that value of interruptibility to be only $4.34 per MWH. When corrected, the analysis should show that avoided cost to be at least $8.51 per MWH and more likely in the range of $10 to $11 per MWH.

And finally, Mr. Taylor's analysis of the avoided cost of a peaker is also in error. Mr. Taylor found that the value of Monsanto's proposed interruptibility provisions to be only $3.10 per MWH.

Summary of Conclusions on Net Price to Monsanto

Q ASSUME FOR THE SAKE OF ARGUMENT THAT THE COMMISSION ACCEPTS MR. SCHUNKE'S PROPOSAL TO USE 12 CP AND THE 75/25 CLASSIFICATION METHODOLOGY IN THE COST STUDY, AND ACCEPTS ONLY MS. IVERSON'S CORRECTION OF THE RETURN. WHAT WOULD BE THE FIRM PRICE?

A Accepting the 12 CP and 75/25 classification, but with Ms. Iverson's return would result in a starting point of $29.30 per MWH.[1]

Q ASSUME THAT THE COMMISSION APPROVES YOUR CORRECTIONS TO MR. SCHUNKE'S AVOIDED COST CALCULATION. WHAT WOULD BE THE RESULTING NET PRICE TO MONSANTO?

[1] *See* Monsanto Exhibit 216.

A Under Monsanto's original proposal to interrupt only two furnaces, the net price would be $20.79 per MWH. However, as explained by Dan Schettler, Monsanto is willing to provide interruptibility on all three furnaces under PacifiCorp's economic curtailment offer. Monsanto is also willing to increase the number of hours of interruption to 1,000 hours annually. Under this new offer, the resulting net price would be **$16.25 per MWH**. Thus, a net price of $18.50 per MWH is certainly reasonable and justifiable.

Q AND WHAT IF THE COMMISSION WERE TO ACCEPT INSTEAD THE COMPANY'S PROPOSED FIRM PRICE OF $31.40 PER MWH AS THE STARTING POINT?

A In that case, the net price to Monsanto under our original curtailment offer would be $22.88 per MWH. But with Monsanto's new proposal to interrupt all three furnaces up to 1,000 hours, my analysis shows the net price to be $18.34 per MWH, which again is certainly in line with Monsanto's proposal for a net price of $18.50 per MWH.

II. THE $30 MILLION PAYMENT BY MONSANTO IN 1995

Q HOW DOES THE STAFF AND PACIFICORP VIEW THE $30 MILLION BUY OUT?

A Mr. Schunke views the $30 million as simply a prepayment of revenues under the November 1995 contract. Mr. Taylor claims that the $30 million payment must be allocated to either the 1992 contract or the 1995 contract.

Q DO YOU AGREE WITH EITHER MR. SCHUNKE OR MR. TAYLOR'S TREATMENT OF THE $30 MILLION PAYMENT?

A No. Both Mr. Schunke and Mr. Taylor ignore two incontrovertible facts. First, as the term "buy out" implies, Monsanto still had almost two years to go on the 1992 contract

at rates of $25 per MWH and $26 per MWH. Instead that power would be provided at a rate of $18.50 per MWH under the 1995 contract.

According to PacifiCorp's Response to Monsanto Data Request No. 122, $15 million of the $30 million was amortized from November 1995 through June 1997, the remaining life of the original 1992 contract. The remaining $15 million was amortized over 54 months (July 1997 through December 2001) at an annual amortization of $3.3 million.[2] Spreading that $3.3 million amortization over 2001 MWH results in an amortization of $2.50 per MWH, making the "effective" rate to Monsanto **$21.00 per MWH**[3]. Consequently, the "effective" rate is definitely <u>not</u> the $23.20 per MWH used by Mr. Schunke and Mr. Taylor. So while Mr. Taylor tries to assign the entire $30 million to <u>either</u> the 1992 contract <u>or</u> the 1995 contract, the truth of the matter is that PacifiCorp applied the $30 million to <u>both</u>.

The second thing both Mr. Taylor and Mr. Schunke ignore is PacifiCorp's own pleading, approved by the Commission, to defer treatment of the $30 million. If the entire $30 million were truly just a prepayment on the November 1995 contract, there would be no need to defer a decision on its treatment. I also believe that Mr. Schunke was influenced in his view of the $30 million because he assumed that a rate of $18.50 per MWH is unreasonable.

Q IS $18.50 PER MWH A TRULY UNREASONABLE RATE?

A Not at all. As shown in Exhibit 221 (AER-1) provided with my direct testimony, Magcorp had a rate of $16.85 (or $19.16 per MWH depending on the data response

[2] Mr. Taylor erroneously amortizes the entire $30 million over the 1995 contract, by using an annual amortization of $6.3 million to arrive at his $23.2 per MWH effective rate. See Monsanto Data Request Attachment 26 for Mr. Taylor's assumption of $6,253,347 of the annual amortization. The correct annual amortization is provided in PacifiCorp Response to Monsanto Data Request No. 122.

[3] Amortization $/MWH 2001: $3.3 million ÷ 1,333,505 MWH 2001 (est) = $2.5 per MWH.

from PacifiCorp). Considering the size of Monsanto, the load characteristics (i.e., high load factor, delivery at transmission level), and the reluctance to lose the Monsanto load, a rate of $18.50 is not unreasonable at all. If anything is unreasonable, it would be the rates that were scheduled to be in effect under the "bought out" 1992 contract.

Furthermore, it was the $18.50 rate (not some contrived $23 rate) which the Commission Staff explicitly recommended be approved as part of the 1995 contact:

> Staff recommends that the Commission accept the filed agreement between Monsanto and PacifiCorp. Staff believes that the **18.5 mill/kWh rate contained in the agreement** covers the average variable costs associated with serving the Monsanto load and provides some contribution to fixed costs. (Comments of the Commission Staff, Case No. UPL-E-95-4, December 8, 1995, emphasis added)

That observation is as true today, as it was seven years ago.

Finally, it should also be pointed out that PacifiCorp uses the $18.50 per MWH rate in its cost of service study filed in this case as the present rate for Monsanto.[4]

III. THE PRINCIPLE OF GRADUALISM

Q WHAT IS THE BASIS FOR YOUR ASSERTION THAT MR. TAYLOR AND MR. SCHUNKE IGNORE THE PRINCIPLE OF GRADUALISM IN THEIR RECOMMENDATIONS?

A Mr. Schunke's top end of his range for the net price to Monsanto is $27 per MWH. This happens to also be the recommended rate contained in PacifiCorp's rebuttal testimony. A $27 per MWH rate would represent an increase of 46% over the current contractual rate of $18.50. Even if we accepted, for the sake of argument, that the current rate was the "effective" rate of $21.00 per MWH I discuss above, that would

[4] *See* PacifiCorp Exhibit No. 1, page 1, Column D, line 11, the present revenue for Monsanto is shown as $25,891,534, for a test period usage of 1,400,846 MWH, which is equivalent to a present rate of $18.50 per MWH.

still be a 29% increase. Mr. Taylor characterizes the increase as "only 17.4 percent", based on his erroneous $23 per MWH effective rate.

Any way you look at the $27 per MWH rate (46% increase, 29% increase, or 17% increase), it is obvious PacifiCorp's proposal totally ignores the principle of gradualism. Considering that other customers have not had an increase at all (and some have even experienced decreases), even a 17% would, in my opinion, exceed the bounds of gradualism, especially for an industrial process that is so energy intensive.

Q IS COMPARING THE COST PER MWH OF THE 2002 NEW CONTRACT WITH THE COST PER MWH OF THE 1995 CONTRACT AN APPLES-TO-APPLES COMPARISON?

A No, it is not. As Mr. Griswold himself notes in his rebuttal testimony, the level of interruptibility in the new 2002 contract is greater than that which existed under the 1995 contract. This has several implications:

1. The new 2002 contract avoids more costs for PacifiCorp than did the previous 1995 contract, and thus provides substantially more value to PacifiCorp.

2. The new 2002 contract is more costly for Monsanto if they choose to buy-through during hours of economic curtailment.

3. The cost under the 1995 contract was actually less than $18.50 per MWH (or the $21 per MWH including amortization). This is because of the additional operating reserve agreements entered during the term of the 1995 contract.

This means that even if the Commission were to hold the current contractual price of $18.50 per MWH, the net result would still be an increase to Monsanto.

Q DO YOU HAVE ANY OTHER COMMENTS REGARDING THE PRINCIPLE OF GRADUALISM?

A Yes. Both Mr. Taylor and Mr. Schunke start with a firm price of $31.4 per MWH as the full cost of service. Throughout this case, PacifiCorp has been adamant that Monsanto pay a firm rate based upon the Company's full cost of service. Any idea of transitioning Monsanto to a full cost of service rate has been ignored by PacifiCorp. This is inconsistent with the treatment afforded another industrial customer, Magcorp. Mr. Griswold admitted that PacifiCorp had offered to provide service for two years to Magcorp at a rate less than full cost of service "in order to begin the transition" to a cost of service based rate. PacifiCorp's offer to Magcorp was to average the existing contract price with the full cost of service rate.[5] Consequently, even if we assumed that the $31.40 per MWH is a "true" cost of firm service to Monsanto, it would be appropriate to moderate that figure in this case.

IV. THE LOWER BOUND OF A PROPOSED NET PRICE FOR MONSANTO

Q WHY DO YOU BELIEVE THAT MR. SCHUNKE REJECTED HIS OWN ANALYSIS AND RECOMMENDED THAT THE NEW MONSANTO CONTRACT RATE NOT BE SET BELOW $23 PER MWH?

A I believe his reasoning follows along the following lines.

1. PacifiCorp's cost of firm power has increased since 1995.
2. PacifiCorp's cost of incremental power has increased since 1995.
3. Since the Commission found $23 to be reasonable in 1995, it would be unreasonable to go below that rate now.

Q CAN YOU AGREE WITH MR. SCHUNKE'S LOGIC?

A No, I cannot. Let us start with the last point. The Commission did not find a $23 rate to be reasonable. It found an $18.50 rate to be reasonable and it found a $30 million

[5] *See* Direct Testimony of Bruce W. Griswold in Docket No. 01-035-38 and Docket No. 02-035-02 before the Public Service Commission of Utah, page 5.

buyout of the last contract to be reasonable. Moreover, neither Mr. Schunke, nor PacifiCorp, nor any other witness has presented evidence to show that PacifiCorp's embedded cost of firm power in 2002 or 2003 (or even later) has increased since 1995. It is true that PacifiCorp did have to purchase a lot of expensive imports in 2000 and 2001. However, there is no evidence that that was a "normal" situation. In fact, the evidence is that PacifiCorp's embedded cost of generation has remained either flat, or possibly even declined during the past decade. Certainly PacifiCorp's base rates in Idaho and Utah are either the same or lower than they were in 1995. PacifiCorp's generation plant has been depreciating. It has not built any new base load plant (although it is in the process of building peakers.) In fact it has sold a baseload plant, Centralia. In Scottish Power's 2001/2002 Annual Review, the Company states:

> Good progress continues to be made with the PacifiCorp Transition Plan, with cumulative year-two cost savings achieved of $117 million, ahead of the $113 million in the Plan for 2001/02. The operating cost savings target for the Plan remains as announced in 2000: $300 million of savings by 2004/2005.
>
> * * *
>
> PacifiCorp remains one of the lowest-cost operators with one of the highest generation plant availability levels in the western US. For example, in 2001/02 PacifiCorp maintained plant availability of 87%, ahead of the regional average of 84%.
>
> * * *
>
> As one of the 20 largest coal producers in the US, PacifiCorp has the third lowest cost of delivered coal of $0.81 per million btu for utilities using more than 10 million tons per year. PacifiCorp currently produces 33% of its own coal needs and purchases the remaining 67%. Through timely procurement, PacifiCorp has achieved significant fuel savings as part of the Transition plan.

Thus, there is no evidence that PacifiCorp's embedded cost of firm power has gone up. Further, there is anecdotal evidence that it may have even declined from earlier levels.

Q BUT WHAT ABOUT MR. SHCHUNKE'S POINT #2, ABOVE? IS IT POSSIBLE THAT PACIFICORP'S INCREMENTAL COST OF POWER HAS INCREASED SINCE 1995?

A That is entirely possible, even probable. As Mr. Schunke notes, in 1995 market prices were low and the Company had excess capacity. Today the Company has no excess capacity and market prices are volatile.

Q IS IT POSSIBLE FOR A UTILITY'S INCREMENTAL COST OF POWER TO GO UP WHILE OVER THE SAME PERIOD TO SEE ITS EMBEDDED COST OF POWER TO GO DOWN?

A It is not only conceivable, it is quite plausible when a utility uses up (or otherwise reduces) its excess capacity. In fact, although such an analysis is beyond the scope of this proceeding, I believe that may be the situation we have here. For example, suppose that PacifiCorp lowered its cost of coal from 1995 to the present, but that gas costs have gone up. If coal is at the margin only a few hours, but gas is at the margin for many more hours, the effect would be to decrease the embedded cost of firm power (since most of the generation is coal), but increase the cost of incremental power. Take another example. Suppose that PacifiCorp increases the capacity factor of its coal fired units. Since those units are now producing more kilowatt-hours, the embedded cost of production would decrease because the fixed costs are being spread out over more kilowatt-hours. On the other hand, the incremental cost might be going up because these low cost plants may be available for a smaller number of hours to meet increases in load. I suspect that Mr. Schunke may have been misled by the rise in incremental (or avoided cost) to erroneously assume that embedded costs have gone up as well.

Q ASSUME INCREMENTAL COSTS HAVE GONE UP SINCE 1995. WOULD THAT IMPLY THAT MONSANTO'S CONTRACT RATE SHOULD NOT GO DOWN FROM THE 1995 LEVEL?

A No. In fact just the **opposite** would be the case, *even by Mr. Schunke's own approach to setting the contract rate.* Remember, as Mr. Schunke himself noted, quite correctly:

> Mr. Taylor's statement seems to imply that the special contract customer should be served from the incremental or marginal resource, and *I don't think that is appropriate. The special contract rate, for a native load customer, should be based on average cost of embedded resources*.

In fact Mr. Schunke goes even further. In his Avoided Cost analysis (Exhibit No. 101) the indicated contract rate is derived by starting out with the embedded cost and subtracting from that the avoided (or incremental) cost. This avoided cost is greater than it was in 1995. In fact, Mr. Schunke himself notes on page 24, lines 23-24 of his testimony, that the value of interruptibility has increased. Thus you should be subtracting a higher avoided value from the same, or possibly lower, embedded rate. Moreover the new contract allows for more interruptibility than does the 1995 contract, by allowing for economic as well as supply-related interruptions.

To summarize, there is simply no reason to believe that Monsanto's rate now should be any higher than that which the Commission found appropriate in 1995.

V. VALUATION OF INTERRUPTIBILITY

Q PLEASE EXPLAIN HOW MR. SCHUNKE DERIVED THE VALUE OF MONSANTO'S INTERRUPTIBILITY.

A Mr. Schunke calculated the cost of the avoided resource. In doing so, Mr. Schunke utilized two different resources. The first was the cost of a potential peaking resource listed in RAMPP-6, in particular an "Oregon/Washington" gas fired Simple Cycle Combustion Turbine (SCCT). The second was a short-term market purchase.

Q WHICH RESULT SHOULD BE GIVEN THE GREATER WEIGHT IN IMPUTING A CONTRACT RATE FOR MONSANTO?

A It is my opinion that the SCCT resource be given a greater rate, for three reasons. First, the SCCT would tend to give a more stable avoided cost, as it would not depend on the more volatile short-term market prices in the West. Second, the SCCT resource would probably be the resource of choice because of its greater reliability and greater hedge against volatility. Short term or spot purchases are generally a replacement for energy, but not for capacity. And finally, as Mr. Schunke himself acknowledges:

> At the current market prices, I believe using them understates the value of interruptibility. I also believe that an interruptible contract would tend to be exercised when market prices are above the average and my analysis was based on average market prices.

Mr. Schunke is correct on both counts. Even Mr. Taylor concedes that Mr. Schunke's market price analysis understates the cost savings attributable to interrupting Monsanto.

Q USING THE SCCT RESOURCE, AND GIVEN THE INTERRUPTIBILITY AT THE LEVEL PROPOSED BY MONSANTO, WHAT "CREDIT" TO THE FIRM RATE DID MR. SCHUNKE DERIVE?

A Mr. Schunke derived a credit of $5,368,534 calculated as

$78.43 per MWH of Avoided Resource Cost
times
68,450 MWH per year
equals
$5,368,534 per year

When the $5.37 million is spread out over Monsanto's usage[6], Mr. Schunke arrived at a credit of $4.34 per MWH.

Q DO YOU AGREE WITH MR. SCHUNKE'S ANALYSIS?

A No, I do not. The first problem with the analysis is that Mr. Schunke ignored the loss factor. When PacifiCorp interrupts 1 MW of Monsanto load for one hour it actually avoids 1.0519 MWH of generation, not just 1 MWH as Mr. Schunke assumed. Thus any result should be multiplied by 1.0519 to arrive at the credit at Monsanto's meter.[7]

Q WHAT OTHER PROBLEMS DID YOU UNCOVER WITH THE ANALYSIS?

A To see where else Mr. Schunke erred, it is best to examine his analysis in a little more detail. To arrive at the $5,368,534 credit, Mr. Schunke multiplied the "Total Resource Cost" of the SCCT noted in RAMPP-6, or $78.43 times the MWH interrupted. However, this method implies that PacifiCorp would avoid the same generation cost by interrupting 1 MW for 6,000 hours as interrupting 10 MW for 600 hours. That is not true. To see what PacifiCorp really avoids, one must analyze both the energy and capacity components of what makes up the $78.43 per MWH Total Resource Cost. The energy component of the $78.43 is $22.52 per MWH, assuming

[6] Mr. Schunke assumed usage of 166 MW at 85% load factor, or 1,236,036 MWH. The assumed sales for Monsanto are actually higher at 1,354,000 MWH.

[7] Losses at the transmission level are 5.19%, as shown on the "Input Table" sheet of Mr. Taylor's cost study provided in the Exhibit No. 3. Mr. Taylor also agrees adjusting for losses is reasonable.

a starting fuel price of $1.90 per MMBTu, and real escalation of 0.6% per year. Thus, under the RAMPP-6 assumptions, the energy component saved by interruption is

$22.52 per MWH of Avoided Resource Cost
times
68,450 MWH per year
equals
$1,541,494 per year.

Q HOW SHOULD THE AVOIDED CAPACITY COST BE CALCULATED?

A RAMPP-6 shows that the avoided capacity cost of the SCCT that Mr. Schunke looked at is $73.48 per kW-year. Mr. Schunke relied on PacifiCorp's conversion of that rate into an charge per unit of energy (MWH) at some assumed capacity factor. However, that conversion is neither necessary nor appropriate in order to calculate the avoided capacity cost. All we need to know is how much load can PacifiCorp not have to plan to meet by virtue of Monsanto's interruptibility.

Q HOW MUCH LOAD CAN PACIFICORP SHAVE AS A RESULT OF MONSANTO'S INTERRUPTIBILITY?

A Not even counting the reduction in auxiliary load, PacifiCorp can shave 116.5 MW from its peak load as a result of interrupting two of Monsanto's furnaces.[8] Because shaving 1 MW of load avoids 1.1 MW of resource (assuming, as PacifiCorp did in RAMPP-6, a low 10% reserve margin), interruptibility would save 128.15 MW of resource. Multiplying that by the $73.48 per kW-year of avoided capacity cost yields $9,416,462. (As I will explain later, Monsanto is now willing to have all three furnaces interrupted, for a total of 162.5 MW before consideration of reserve margin. I will show this updated valuation separately.)

[8] 116.5 MW is the total of two furnaces, without auxiliary load.

Q WHAT WOULD BE THE RESULTING VALUE UNDER THOSE MORE ACCURATE CALCULATIONS?

A The total value of the interruptibility under Monsanto's original plan to interrupt only two furnaces would be:

Energy Credit	$ 1,541,494
Capacity Credit	$ 9,416,462
Total Credit	$10,957,956

However, the above figure is before losses. Multiplying by 1.0519 to account for losses, gives a value $11,526,674.

Q HOW MUCH DOES THAT EQUATE TO PER MWH OF MONSANTO USAGE?

A Correcting Mr. Schunke's assumption of Monsanto load to the 1,354,000 the $11.5 million yields an interruptibility credit of $8.51 per MWH. However, I believe that would be underestimating the resource saving.

Q WHY DO YOU BELIEVE THAT FIGURE TO BE TOO LOW?

A First, it does not take into account the environmental and risk costs of building more capacity by PacifiCorp. Second, the Oregon SCCT was the lowest of all the simple cycle Combustion Turbines considered in RAMPP-6. The ones for Utah and Wyoming, for instance, had estimated fixed costs that were 18% and 25% higher than the fixed cost assumed for the Oregon/Washington one that Mr. Schunke used.

Q WHY MIGHT THE UTAH AND WYOMING UNITS BE MORE RELEVANT TO THE AVOIDED RESOURCE COST THAN THE OREGON UNIT?

A It is my understanding there may be some west to east transmission constraints into Idaho. Furthermore, as explained by Mr. Watters at page 9 of his testimony,

Monsanto is within PacifiCorp's Eastern Control Area. Thus, Monsanto's interruptibility could very well avoid a combustion turbine in Wyoming or Utah, instead of one in Oregon or Washington.

Q WHAT IS THE VALUE OF MONSANTO'S INTERRUPTIBILITY BASED ON A COMBUSTION TURBINE IN UTAH?

A Again, based on Monsanto's original plan to interrupt only two furnaces, the value would be $9.89 per MWH, or 16% higher than value based on the Oregon/Washington SCCT:

Energy Credit	$ 1,627,741
Capacity Credit	$11,101,635
Total Credit	$12,729,376
Adjusted for Losses	$13,390,030
Value	$9.89 per MWH

Q PLEASE CONTINUE WITH YOUR REASONS WHY THE INTERRUPTIBILITY CREDIT OF $8.51 PER MWH MAY BE UNDERSTATED.

A The costs shown in RAMPP-6 are real levelized costs, not nominal levelized costs. In other words, the fixed costs shown in RAMPP-6 are the costs for installing the resource in the first year, and are assumed to escalate by 2.8% each year. However, Mr. Schunke is not proposing to increase the credit to Monsanto in each year of its five year contract. Another possible cause for understatement is that the energy or variable cost in RAMPP-6 assumes a gas price of $1.90 per MMBTu. PacifiCorp shows that gas prices today may be as high as $3.75 per MMBTu.[9] Finally this analysis assumes that PacifiCorp's most expensive variable cost at any hour of

[9] Exhibit No. 14.

interruption is that of the SCCT. In reality, it could be an expensive off-system purchase. Taking all these factors into account, I would estimate the credit to be up to $2 per MWH greater. Consequently, I believe that even under Mr. Schunke's method, a credit of $10 per MWH would be reasonable, *even given Monsanto's originally proposed interruptibility provisions*.

Q MR. SCHUNKE NOTES THAT A COMBUSTION TURBINE PROVIDES MORE FLEXIBILITY THAN THE INTERRUPTIBLE CONTRACT. PLEASE RESPOND.

A It is true that a CT, once installed, can be operated longer hours. On the other hand, the CT also has other risks. It may not start when called upon, it could cause environmental problems, it may come in at a higher cost than estimated. Moreover, a CT commits PacifiCorp, and its customers, to paying the fixed investment costs for 30 years. I would also note that Mr. Schunke's analysis – as well as my own – did not take into account the full interruptibility of all three furnaces for Emergency conditions. While admittedly hard to quantify, this surely has more than zero value. In fact, PacifiCorp has valued System Integrity at $486,000 annually in its rebuttal testimony.[10]

Q MR. TAYLOR ARRIVES AT A VALUE OF $3.10 PER MWH FOR MONSANTO'S PROPOSED INTERRUPTIBILITY. IS THAT REASONABLE?

A No. In Exhibit No. 17, Mr. Taylor alleges to "correct" the valuation analysis by using only the fixed portion of the Total Resource Cost, or $55.92 per MWH. As I explained earlier, the $55.92 figure is based on a 15% capacity factor. However, fixed costs are exactly that – fixed. Fixed costs by definition do not vary as a function of capacity factor. Whatever capacity factor the SCCT was expected to run at is totally beside

[10] See PacifiCorp Exhibit No. 15.

the point as it relates to the fixed cost that PacifiCorp avoids by being able to interrupt Monsanto. All we need to know is how much load PacifiCorp will not plan for as a result of Monsanto's interruptibility. That amount is 116.5 MW as described above (or 162.5 MW as updated), and should properly be valued at the $73.48 per kW per year.

Mr. Taylor also claims that Monsanto's 7% availability must be factored into the usage of Total Resource Cost figure. Again, with respect to determining the avoided capacity cost, it makes no difference the number of hours Monsanto is interruptible. It is the size of the interruption – in capacity – that is multiplied by the avoided capacity cost of the SCCT, or $73.48 per kW-year.

Q MR. TAYLOR STATES THAT IF THE CT WERE INSTALLED AND RUN, RATHER THAN INTERRUPTING MONSANTO, THERE WOULD BE REVENUES ASSOCIATED WITH THAT PRODUCTION. MR. TAYLOR THEN CONCLUDES THAT ONLY THE FIXED COSTS OF THE CT ARE AVOIDED BY INTERRUPTING MONSANTO. DO YOU AGREE?

A No. PacifiCorp's sales will be what they will be regardless of whether the source is running the CT or whether the source is interrupting Monsanto. The only valid comparison is the cost of each resource. If PacifiCorp runs the CT, the cost is the gas used to fuel the CT plus variable O&M (operation and maintenance). On the other hand, if PacifiCorp interrupts Monsanto, the cost avoided is PacifiCorp's highest cost in that hour, which could very well be greater than simply the variable cost of running the CT. Consequently, not only should we include the running cost of the CT in the analysis, doing so probably understates the true avoided cost.

Furthermore, Mr. Taylor ignores the very real opportunity for avoiding energy provided by Monsanto's proposal for economic curtailment. In fact, Exhibit No. 14 sponsored by PacifiCorp witness Stan Watters, shows that the economic curtailment

option provides avoided energy priced at $59.25 per MWH. Ironically, Mr. Taylor has ignored the energy value of economic curtailment, which his colleague Mr. Watters accepts. It is certainly reasonable to include a payment for avoided energy as Mr. Schunke and I have done.

Q ON PAGE 12 OF HIS REBUTTAL TESTIMONY, MR. TAYLOR STATES THAT EVEN YOU HAVE USED ONLY THE AVOIDED FIXED COST IN ARRIVING AT AN INTERRUPTIBLE CREDIT. PLEASE COMMENT.

A Mr. Taylor mischaracterizes my Direct Testimony. While I did not explicitly account for the avoided variable cost of the SCCT in my Direct Testimony (as I have done here, or as both Mr. Schunke and Mr. Yankel have done), I did note that that analysis understated the avoided cost because of that exclusion.

Q YOU MENTIONED EARLIER THAT MONSANTO IS NOW WILLING TO HAVE ALL THREE FURNACES INTERRUPTED. HOW DOES THAT IMPACT YOUR VALUATION ANALYSIS?

A The methodology remains the same; only two input assumptions must be changed: (1) the capacity that can be interrupted is now increased to 162.5 MW from the previous amount of 116.5 MW; and (2) the MWH curtailed is increased to 162,500 MWH (representing 1,000 hours at 162.5 MW) from the previous 68,450.

Q CAN YOU PROVIDE THE UPDATED VALUATION ANALYSIS BASED ON MONSANTO'S EXPANDED PROPOSAL?

A Yes. Based on the avoided costs of Mr. Schunke's preferred Oregon/Washington SCCT, the total value is $13.05 per MWH. When this is value is netted against a firm starting price of $29.30 per MWH, the net price to Monsanto is **$16.25 per MWH**,

which is actually less than Mr. Schettler's proposed contractual price of $18.50. If the Commission should reject the $29.30 per MWH starting price and instead accept the Company's proposal for $31.39, the net price is **$18.34 per MWH**. This is certainly in line with Monsanto's proposal for a net price of $18.50. The supporting calculations for these valuations and net prices are shown in Exhibit 239 (AER-4).

Q DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY AT THIS TIME?

A Yes.