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UTILITIES COMMISSION

201 South Main, Suite 2300
Salt Lake City, Utah 84111

October 7, 2010

VIA HAND DELIVERY

Jean D. Jewell
Commission Secretary
Idaho Public Utilities Commission
472 W. Washington
Boise, ID 83702

**Re: Case No. PAC-E-10-07
Errata Filing - Rocky Mountain Power Supplemental Testimony of Paul H.
Clements regarding the economic valuation of interruptible products offered by
Monsanto**

Dear Ms. Jewell:

Rocky Mountain Power was recently made aware of an error in the supplemental testimony of Paul H. Clements filed with the Idaho Public Utilities Commission September 30, 2010. Consequently, please find enclosed for filing an original and (9) nine copies of Rocky Mountain Power's errata to the supplemental testimony of Paul H. Clements. Rocky Mountain Power hereby requests that the Commission replace the current pages 26 and 27 of the supplemental testimony of Paul H. Clements with the errata pages 26 and 27 filed herewith. To the attention of the Court Reporter is a paper copy of all documents along with a CD containing the testimony in its original format.

All formal correspondence regarding this supplemental testimony should be addressed to:

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Communications regarding discovery matters, including data requests issued to Rocky Mountain Power, should be addressed to the following:

By E-mail (preferred): datarequest@pacificorp.com

By regular mail:
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PacifiCorp
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Portland, OR 97232

Idaho Public Utilities Commission

October 7, 2010

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Informal inquiries may be directed to Ted Weston, Idaho Regulatory Manager at (801) 220-2963.

Very truly yours,

Handwritten signature of Jeffrey K. Larsen in black ink, with a stylized flourish at the end.

**Jeffrey K. Larsen
Vice President, Regulation**

cc: Service List

Enclosures

CERTIFICATE OF SERVICE

I hereby certify that on this 7th day of October, 2010, I caused to be served via E-mail, a true and correct copy of Rocky Mountain Power's Errata to the Supplemental Testimony of Paul H. Clements in PAC-E-10-07 to the following:

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BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

IN THE MATTER OF THE)	
APPLICATION OF ROCKY)	CASE NO. PAC-E-10-07
MOUNTAIN POWER FOR)	
APPROVAL OF CHANGES TO ITS)	Supplemental Testimony of
ELECTRIC SERVICE SCHEDULES)	Paul H. Clements
AND A PRICE INCREASE OF \$27.7)	
MILLION, OR APPROXIMATELY)	
13.7 PERCENT)	

ROCKY MOUNTAIN POWER

CASE NO. PAC-E-10-07

October 2010

1 **Q. Please state your name, business address and present position with the**
2 **Company (also referred to as Rocky Mountain Power).**

3 A. My name is Paul H. Clements. My business address is 201 S. Main, Suite 2300,
4 Salt Lake City, Utah 84111. My present position is Originator/Power Marketer
5 for PacifiCorp Energy. PacifiCorp Energy and Rocky Mountain Power are
6 divisions of PacifiCorp (the Company).

7 **Q. How long have you been in your present position?**

8 A. I have been in my present position since December 2004.

9 **Q. Please describe your education and business experience.**

10 A. I have a B.S. in Business Management from Brigham Young University. I have
11 been employed with PacifiCorp since 2004 as an originator/power marketer
12 responsible for negotiating interruptible retail special contracts, negotiating
13 qualifying facility contracts, and managing wholesale or market-based energy and
14 capacity contracts with other utilities and power marketers. I was the Company
15 representative who negotiated the 2006 and the 2007 through 2010 electric
16 service agreements with Monsanto. I have managed all Monsanto contract-
17 related issues since late 2004. I also worked in the merchant energy sector for
18 approximately 12 years in pricing and structuring, origination, and trading roles
19 for Duke Energy and Illinova.

20 **Purpose and Summary of Testimony**

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

22 A. The purpose of my testimony is to provide a recommendation and analysis
23 regarding the economic valuation of the interruptible products offered by

1 Monsanto to the Company to establish the contract rates for Monsanto starting
2 January 1, 2011. My testimony will address the following areas:

- 3 • provide an explanation as to why the Company is filing supplemental
4 testimony on Monsanto's economic evaluation and the Company's
5 recommendation;
- 6 • provide an overview of the key drivers to consider in valuing interruptible
7 products;
- 8 • identify the key factors that influence the value of the various interruptible
9 products Monsanto provides;
- 10 • provide an overview of the methodologies and the economic models the
11 Company utilizes for each interruptible product in order to illustrate the
12 value the Company is recommending to provide Monsanto which is
13 consistent with the cost of obtaining the same interruptible products from
14 other sources; and
- 15 • summarize the results of the economic models and provide a
16 recommendation on the economic value consistent with the interruptible
17 products being offered by Monsanto starting on January 1, 2011.

18 **Q. Why is Rocky Mountain Power filing supplemental testimony on the value of**
19 **interruptible products offered by Monsanto at this time?**

20 **A. The Company has been in negotiations with Monsanto on the economic**
21 **evaluation and the value of the interruptible products since March of this year.**
22 **While the Company and Monsanto ("the Parties") have been negotiating in good**
23 **faith to reach agreement on the methodology and the economic evaluation to be**

1 used starting January 1, 2011, the Parties have not been able to reach agreement
2 on the methodology or the value. In Case No. PAC-E-06-09 Order No. 30197
3 (“the Order”), the Commission required Monsanto’s future rates be subject to
4 tariff adjustments after January 1, 2008, to facilitate future rate adjustments and
5 better align Monsanto’s rates with their cost of service. This Order also
6 recognized that the three interruptible products under the current contract
7 terminating December 31, 2010 (“the Contract”) provide operational benefits to
8 the Company. The Commission recognized that the value of these interruptible
9 products provided by Monsanto as well as Monsanto’s cost of service would be
10 important considerations in establishing the net rate to Monsanto in any future
11 contract. That is why the Commission ordered, “we expect the parties to address
12 interruptible product valuation in the context of a general rate case when
13 Monsanto’s cost of service is determined.” (Order at p. 9). The Company is filing
14 its recommendation as a backstop in the event that a settlement is not reached
15 with Monsanto and the Commission is required to evaluate the evidence and
16 ascribe a value to the interruptible products from Monsanto in order to determine
17 a net rate for Monsanto starting January 1, 2011. The Company’s
18 recommendation will allow Monsanto, Commission Staff or other parties to
19 respond to the Company’s information in their direct testimony and to have the
20 issue addressed as part of the case as it proceeds.

21 **Q. How are Monsanto’s interruptible products treated in the Company’s**
22 **application?**

23 **A. The Company has included Monsanto’s interruptible credit at the current 2010**

1 contract amount based on the Order as a net power cost expense. The Company
2 sees two options to implement its recommendation; either this expense could be
3 updated based on the Commission's determination of the interruptible value in the
4 current proceeding or, since the new value would not be effective until January 1,
5 2011, the 2010 value could be left as presented in the Company's filing and the
6 difference would then be captured in the energy cost adjustment mechanism.

7 **General Comments on Valuation of Interruptible Products**

8 **Q. What is the underlying principle behind the Company's approach to the**
9 **economic evaluation of interruptible products that are offered by industrial**
10 **customers?**

11 A. The Company follows a "customer indifference" approach when valuing
12 interruptible products offered by industrial customers. In other words, the
13 Company seeks to pay industrial customers who can offer interruptible products
14 the same price the Company would otherwise pay if it were to acquire those same
15 products from other sources, such as the market or its own resources.

16 **Q. Why is it important to price interruptible products that industrial customers**
17 **provide consistent with the price the Company would pay to acquire the**
18 **same product from other sources?**

19 A. All customers are allocated their proportionate share of prudently incurred costs
20 by the Company. The price paid to industrial customers for interruptible products
21 is included in net power costs which are allocated on a system basis to all
22 customers. Therefore, if the Company pays industrial customers more for the
23 interruptible products than it would otherwise incur acquiring those same products

1 from another source, all customers would not be paying the least cost for energy
2 and would be subsidizing the industrial customers who provide these products. If
3 this were to occur with Monsanto, other customers in Idaho as well as customers
4 in other states would be allocated higher costs than if the Company were to
5 acquire those same interruptible products from the lowest cost resource available.
6 Therefore, in order to maintain fairness to all customers, the price paid to
7 industrial customers, and in this case to Monsanto, for interruptible products
8 should be no greater than the amount the Company would incur if it were to
9 acquire those same products from the next lowest cost available resource. The
10 Company uses this indifference principle in its approach to value interruptible
11 products provided by industrial customers.

12 **Q. Are industrial customers fairly compensated for their product under this**
13 **approach?**

14 **A. Yes. Industrial customers are fairly compensated for providing these products,**
15 **and other customers are indifferent as to whether the products are provided by the**
16 **industrial customer or from other resources. If the credit paid to the industrial**
17 **customer is below the cost of obtaining that product elsewhere, other customers**
18 **receive the benefit at the industrial customer's expense. If the credit paid to the**
19 **industrial customer is above cost of obtaining that product elsewhere, other**
20 **customers are providing a subsidy to the industrial customer.**

1 **Q. Please describe Monsanto's historical approach to contracting for its**
2 **interruptible products and the associated implications for the valuation of**
3 **these products.**

4 A. Monsanto has always executed shorter term agreements with PacifiCorp,
5 historically five years or less, for its interruptible products. This contracting
6 approach results in the value of the interruptible products being driven largely by
7 both the current market value of those products and the Company's requirement
8 for the interruptible products at a given point in time in which the value is
9 determined. The market value of the interruptible products can be volatile as the
10 energy markets go through cycles of over and under capacity utilization. In
11 addition, the Company's requirements for the interruptible products offered by
12 Monsanto are constantly changing as load forecasts change and the Company
13 acquires new resources to meet its obligation to serve. Monsanto's shorter term
14 contracting approach leads to variability in Monsanto's interruptible product
15 value, with the value sometimes being higher than the long term cost of similar
16 products and sometimes lower than the long term value of similar products.

17 **Overview of the Interruptible Products Provided by Monsanto**

18 **Q. Please summarize the interruptible products provided by Monsanto in**
19 **Monsanto's current contract.**

20 A. The current Monsanto contract provides three products:

21 1. *Non-spinning Operating Reserves.* Monsanto provides 95 megawatts
22 of non-spinning operating reserves available for 188 hours per calendar year. The

1 Company holds operating reserves to respond to unit outages and maintain
2 reliability.

3 2. *Economic Curtailment.* Monsanto provides 67 megawatts of economic
4 curtailment available for 850 hours per calendar year for 2010. In previous years
5 Monsanto has typically allowed for around 800 hours of economic curtailment.
6 This product allows the Company to curtail Monsanto's load on a two-hour notice
7 for any reason.

8 3. *System Integrity.* Monsanto can provide up to 162 megawatts of
9 system integrity interruption during a voltage event and is available 12 hours per
10 calendar year. This product also allows the Company to curtail Monsanto up to
11 95 megawatts following a double contingency event, which is defined as two or
12 more overlapping forced outages of large Company generating assets within 48
13 hours.

14 **Key Factors That Impact the Value of Monsanto's Interruptible Products**

15 **Q. What are the major factors that influence the value of the three products**
16 **offered by Monsanto?**

17 **A.** Each of the three products offered by Monsanto has a unique set of factors that
18 establish the value of providing that product to the Company. I will address each
19 product individually:

20 *Non-Spinning Operating Reserves*

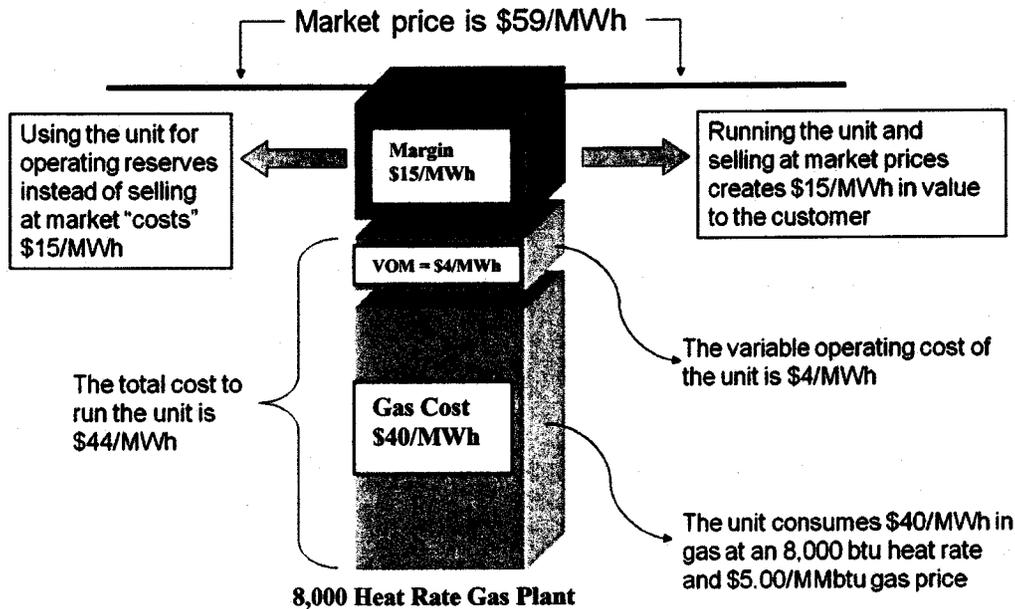
21 Non-spinning operating reserves are defined as resources that can be
22 brought online to serve load within 10 minutes. In addition to generating
23 resources that can meet this requirement by producing more energy when called

1 upon within 10 minutes, non-spinning operating reserve requirements can also be
2 met by using customer load that can be curtailed within 10 minutes. Therefore,
3 the value of an operating reserve megawatt is equal to the value that could be
4 received for that same megawatt if it were not set aside for operating reserves and
5 instead sold to the market. Operating reserves are typically held on the
6 Company's existing resources, which could include gas units, hydro units, or coal
7 units. Gas units are typically the primary provider of operating reserves for the
8 Company, along with existing contracts between the Company and large
9 industrial customers.

10 The cost or value of operating reserves is best described as an opportunity
11 cost or "what if" proposition. Since the megawatt is used for operating reserves
12 instead of the energy being sold, the primary driver of value is the lost
13 opportunity cost of using that megawatt for operating reserves. The key factors
14 that impact that opportunity cost for gas, hydro and coal plants are: 1) the value at
15 which the megawatt could have been sold to market; and 2) the cost incurred to
16 generate that megawatt. This difference is the profit or margin on the generating
17 resource. For a gas plant, the margin or profit is primarily dependent on two
18 things: the price of natural gas and the price of energy in the market, also known
19 as the spark spread, less variable operating costs. Therefore, since the value of
20 operating reserves held on gas plants is dependent on the spark spread of the gas
21 plant, the value of operating reserves is correlated not only to the market prices
22 for energy but also to market prices for natural gas. The following chart

1 illustrates how the value of operating reserves is tied to the spark spread on a gas
2 plant.

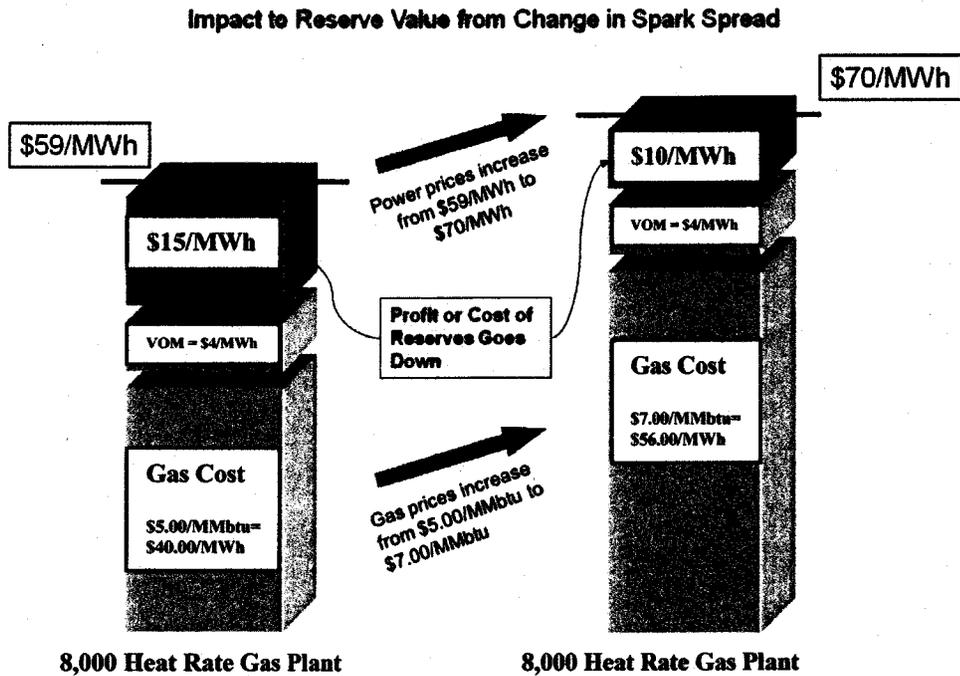
Impact of Spark Spread on Operating Reserve Value



3 Since the margin of a gas plant is dependent on both gas and energy
4 prices, it is quite possible to have a scenario in which the price of energy increases
5 and the price of gas increases by the same amount, resulting in the margin or
6 profit on the gas plant to stay the same. If this is the case, the value of operating
7 reserves will stay the same because even though power prices went up, the cost to
8 produce that energy (the gas cost) went up as well.

9 Another scenario includes a situation where the market price for energy
10 increases, but the market price for gas increases by a larger percentage. This is
11 known as a narrowing of the spark spread. If the spark spread narrows, the
12 margin on the gas plant actually decreases even though power costs are
13 increasing, and the value of operating reserves also decreases. The following

1 chart illustrates such a scenario.



2 Another factor that impacts the value of operating reserves is the addition
3 of new generating resources. If new generating resources are added, and those
4 generating resources can carry operating reserves more economically than the
5 generating resources that carried operating reserves prior to the addition of the
6 new generating resource, operating reserves value may go down regardless of any
7 change in energy prices.

8 Since 2002, the Company added the 540 megawatt (approximate) Currant
9 Creek unit and the 560 megawatt (approximate) Lakeside unit. These combined
10 cycle plants, along with the 355 megawatt (approximate) Gadsby combustion
11 turbines and steam boiler units, provide 1,455 megawatts of gas fired capacity.
12 Depending on gas prices, these units are often the most economic generating
13 resources on which to hold operating reserves.

1 *Economic Curtailment*

2 The economic curtailment product offered by Monsanto allows the
3 Company to curtail Monsanto on a 2-hour notice for any reason. The value of the
4 economic curtailment product is directly related to market prices for energy since
5 curtailing Monsanto allows the company to avoid market purchases. Based on the
6 number of hours of curtailment Monsanto provides, the Company is able to avoid
7 market purchase during times of peak usage in multiple months throughout the
8 year. The value of the economic curtailment product Monsanto provides is equal
9 to the market value of energy during those hours in which the Company
10 anticipates curtailment of Monsanto's load. Therefore, the value of the economic
11 curtailment product is most heavily influenced by the underlying market price for
12 energy.

13 *System Integrity*

14 Under the terms in the current contract, the Company may curtail 95
15 megawatts of Monsanto load if the Company simultaneously incurs the forced
16 outage of 500 megawatts of generation, deemed a "double contingency event", or
17 162 megawatts of load for a voltage related event. This product is known as the
18 system integrity product. The probability of a double contingency event
19 occurring is equal for all hours of the year. However, the Company values the
20 system integrity product using the average on-peak price for the calendar year.
21 This approach assigns more value than would be assigned using an average price
22 for all hours of the year, but the value better reflects the product Monsanto is
23 providing to customers because the Company would most likely utilize this

1 product on peak hours. Therefore, similar to the economic curtailment product,
2 the underlying market price for energy is the most influential factor in the value of
3 the system integrity product.

4 **Overview of the Models Used by the Company to Value Monsanto's Interruptible**
5 **Products**

6 **Q. How did the Company approach the valuation of the interruptible products**
7 **Monsanto provides as it relates to a new contract for Monsanto?**

8 A. The Company began by evaluating which models would yield a result that is
9 consistent with the indifference principle outlined earlier in my testimony in
10 which the interruptible products provided by Monsanto equal the cost the
11 Company would otherwise occur if similar products were to be obtained from
12 other sources. The Company utilized two models to calculate the cost of
13 obtaining from other sources the same interruptible products that Monsanto
14 offers. These two models are the following: 1) the Front Office model and 2) The
15 Generation and Regulation Initiative Decision (GRID) model. The economic
16 analysis performed by these two models produces a result that ensures the
17 Company is indifferent.

18 **Q. Why did the Company utilize more than one model to set the value instead of**
19 **relying on the result of a single model?**

20 A. There are many different factors and inputs that influence the forward value of
21 interruptible products. Each particular model utilized by the Company captures a
22 reasonable majority of these factors and inputs in its analysis and, even if used
23 alone, each model could be considered a fair assessor of value for the product it is

1 pricing. However, each model has certain factors and inputs that it measures and
2 analyzes with some level of precision and other factors and inputs that are not
3 measured as well as they are in the other model. For example, one model used to
4 value operating reserves may do a thorough job of analyzing the cost of holding
5 reserves on the Company's existing resource portfolio, but that same model may
6 not incorporate the Company's overall need for operating reserves in any given
7 hour in its analysis. A second model may thoroughly incorporate the Company's
8 need in any given hour but may not measure the value or cost with as much
9 precision as the first model. Therefore, the Company believes a more balanced
10 approach is to utilize both models in order to make sure all factors and inputs are
11 appropriately considered when determining the value of each interruptible
12 product. The Company then can determine a proposed value for each
13 interruptible product after evaluating the results of the various models.

14 **Q. Have any of the models and methodologies used by the Company in its recent**
15 **analysis been used to determine the value in previous Monsanto contracts**
16 **and in contracts with other industrial customers?**

17 A. Yes. The Company used the same methodologies it used in its recent analysis to
18 establish value in previous Monsanto contracts and in contracts with other
19 industrial customers who offer similar products to those offered by Monsanto.

20 **Q. What was the date of the price curve used by the Company in its Front**
21 **Office and GRID model analyses?**

22 A. The Company used the June 30, 2010, official forward price curve.

1 **Q. Please briefly describe the Front Office model and the GRID model and**
2 **identify which of the three interruptible products were priced using the**
3 **particular model or methodology.**

4 A. *Front Office Model*

5 The Front Office model is an Excel based model that utilizes the
6 Company's forward price curves, the operating characteristics and costs of the
7 Company's current portfolio of generating assets, and other inputs to determine
8 the marginal cost of obtaining curtailment products from Company generating
9 resources and/or market purchases instead of purchasing those same products
10 from Monsanto. The Front Office model can be used to value operating reserves,
11 economic curtailment and system integrity.

12 *The GRID Model*

13 The Generation and Regulation Initiative Decision (GRID) model is the
14 deterministic hourly production dispatch model used to set the Company's net
15 variable power costs. The GRID model incorporates in its analysis the
16 Company's operating reserves requirements and determines the "avoided cost" of
17 the curtailment products. The GRID Model can be used to value operating
18 reserves and economic curtailment.

19 **Operating Reserve Product Valuation**

20 **Q. Please summarize the results of the models used to value the operating**
21 **reserve product.**

22 A. The table below summarizes the results of the Front Office and GRID models for
23 three years and includes the average value of the model results.

<u>Model (\$ millions)</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>
Front Office	\$2.4	\$3.2	\$3.7
GRID	\$2.4	\$2.7	\$2.8
Average	\$2.4	\$3.0	\$3.3

1 **Q. Please provide a detailed explanation of the model methodologies for each**
2 **model used to value the operating reserve product.**

3 A. *Front Office Model*

4 The Company's Front Office model determines the marginal or
5 incremental cost of providing operating reserves from the Company's existing
6 generating resource portfolio. This model determines, on an hourly basis, the
7 most economic or least cost means by which the Company can provide operating
8 reserves. From a customer's perspective, this method determines the replacement
9 cost or opportunity cost of the operating reserve megawatt provided by Monsanto.
10 The spread between the market price for energy and the highest cost, in-the-
11 money resource from the reserve stack determines the opportunity cost of holding
12 operating reserves. This represents what the Company would be willing to pay on
13 behalf of customers for the next megawatt of operating reserves if it needed to
14 acquire additional operating reserves.

15 *GRID Model*

16 The GRID model provides a system-wide view of both the need for
17 operating reserves and the system incremental benefit of providing those
18 operating reserves on an hour-by-hour basis. The GRID model includes the
19 existing generating portfolio of Company resources, which includes Company
20 owned physical assets, power purchase agreements, and contracts for interruptible

1 products (such as operating reserves) with other industrial customers. GRID
2 determines the amount of operating reserves the system requires and then
3 allocates resources to meet that requirement. GRID allocates operating reserves
4 on the plants that are highest cost to lowest cost because it is less expensive to
5 carry reserves on higher cost resources.

6 To determine the value of Monsanto's operating reserve product, a base
7 case GRID run without Monsanto's resource is performed. Then, Monsanto's
8 operating reserve contract is added at "zero cost" and the model is rerun. The
9 difference between the two studies is the value of the operating reserve contract.
10 This value represents the value of the highest cost, or most expensive, operating
11 reserves that would no longer be required if Monsanto's operating reserve product
12 is available instead. The Company uses the GRID model to determine net
13 power costs in this rate case, including the cost of the Company's operating
14 reserves. Since Monsanto's interruptible credit is included as a component of net
15 power costs, it is logical to use the same model to determine the value of the
16 interruptible products provided by Monsanto.

17 **Q. Did the Company consider any additional models or methodologies for use in**
18 **determining a value for the operating reserve product?**

19 **A.** Yes. The Company considered the use of a comparable sales model in which
20 contract prices from recently executed contracts with other large customers who
21 offer non-spinning operating reserves under terms and conditions similar to those
22 in the Monsanto contract are used to set the value of the Monsanto operating
23 reserve product. The Company determined that it was more appropriate to use

1 this model as a verification of reasonableness of the Front Office and GRID
2 model results as opposed to a model that is used to set the value. This is due to
3 the fact that the comparable contracts were executed at times in which the market
4 prices and Company system generating resources were different than what they
5 are today. The Company also considered using a peaker resource to value the
6 interruptible products being provided by Monsanto but determined the application
7 of a peaker resource in valuing operating reserves was not appropriate due to the
8 differences in the products, terms and conditions that Monsanto is capable of
9 providing the Company as compared to the products, terms and conditions that a
10 peaker resource is able to provide the Company.

11 **Q. Please provide an overview of the comparable sales model methodology and**
12 **results and why they can be used as a reference point in evaluating the Front**
13 **Office and GRID model results.**

14 A. Since 2006, the Company has entered into two contracts with large industrial
15 customers for non-spinning operating reserves. The first contract was executed in
16 late 2006 and has a term of seven (7) years starting in 2007. The second contract
17 was executed in late 2009 and has a contract term of five (5) years. In both
18 contracts, the industrial customer offers a non-spinning operating reserve product
19 that is similar to that offered by Monsanto. The prices in those contracts could be
20 used as a reference point for pricing Monsanto's non-spinning operating reserve
21 product because they represent the price at which industrial customers similar to
22 Monsanto are willing to enter into operating reserve agreements for the 2011
23 through 2013 time period. However, those contracts were executed at times when

1 the market curves, the spark spreads and the Company's system generating
 2 resources were not the same as they are today. The details of this comparable
 3 sales analysis are as follows:

Contract Terms	Customer #1	Customer #2
Contract Signed	late 2006	late 2009
Contract Term	2007-2013	2010-2014
Megawatts Available for Curtailment	85 MW	100 MW
Hours of Curtailment	70 hours per year of curtailment (contract allows 130 hours but only 70 hours are set aside for reserves)	100 hours per year of curtailment
Notice of a curtailment for an operating reserve interruption	7 minute notice	10 minute notice
Qualified as a non-spinning operating reserve	Yes	Yes
Value of Operating Reserve Credit	Initially set at \$4.16/kW month. Credit for 2007-2010 has averaged \$4.25/kW month	\$4.01/kW month
Is credit fixed or variable	Credit adjusts over the term each year by the same percentage change as Utah general rates in the previous year	Credit is fixed for the entire 5 year term

Monsanto Value using Pricing Equal to these Contracts

Operating Reserve Credit (\$/kW month)	\$4.25	\$4.01
Monsanto MW	95.00	95.00
Total \$	\$4,845,000	\$4,571,400
Average		4,708,200

1 **Q. How do the results of the comparable sales model compare to the results of**
2 **the Front Office and GRID models?**

3 A. The table below compares the results of the Front Office, GRID and comparable
4 sales models:

<u>Model (\$ millions)</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>
Front Office	\$2.4	\$3.2	\$3.7
GRID	\$2.4	\$2.7	\$2.8
Comparable Sales	\$4.7	\$4.7	\$4.7

5 The comparable sales model results are close to and support the Front Office and
6 GRID model results but are higher primarily due to the fact that market prices
7 were higher and spark spreads were wider at the time those contracts were
8 executed. Since the energy market, spark spreads and system generating resource
9 conditions have changed, the results of the comparable sales model approach are
10 best used as a reference point to check the more up-to-date Front Office and
11 GRID models.

12 **Q. Please provide an overview of the peaker resource evaluation methodology**
13 **and why it is not appropriate to use in determining the value of operating**
14 **reserves.**

15 A. It is not appropriate to compare the Monsanto curtailment contract to a
16 combustion turbine peaker because the products, terms and conditions that
17 Monsanto offers are materially different from the products, terms and conditions
18 available through ownership or lease of a combustion turbine. The table below
19 provides a simple comparison.

	Monsanto Interruptible Contract	Combustion Turbine
Operating reserve annual availability	2.1%	96.0%
Operating reserve annual available hours	188	8,410
Economic dispatch annual availability	9.1%	96.0%
Economic dispatch annual available hours	800	8,410
Load following reserves annual availability	0.0%	96.0%
Load following annual available hours	0	8,410
Spinning reserves annual availability	0.0%	96.0%
Spinning reserves annual available hours	0	8,410

1 The peaker resource methodology utilizes the capital and energy costs of a new
2 combustion turbine (a simple cycle gas turbine peaking plant) as a basis for
3 determining the value of the non-spinning operating reserves product. This model
4 is not appropriate to use to value the non-spinning operating reserves product
5 offered by Monsanto because the products, terms and conditions Monsanto offers
6 are not equivalent to the products, terms and conditions available through
7 ownership or lease of a combustion turbine. A combustion turbine provides
8 materially different products that are more valuable to customers than the
9 Monsanto interruptible products because a combustion turbine is available to
10 customers for their benefit 8,410 hours per year, assuming a 96 percent
11 availability factor, while Monsanto only offers 188 hours of interruption under the
12 operating reserves contract and 800 hours of interruption under the economic
13 curtailment contract. Furthermore, Monsanto is unable to provide load following
14 services, spinning reserves, and other products that a combustion turbine

1 provides. The differences between the products, terms and conditions Monsanto
2 offers and the products, terms and conditions available to the Company through
3 ownership or lease of a combustion turbine are too significant in structure and in
4 value to warrant a comparison for use in determining value for the Monsanto
5 interruptible products.

6 **Economic Curtailment Product Valuation**

7 **Q. Please summarize the results of the models used to value the economic**
8 **curtailment product.**

9 A. The table below summarizes the results of the individual models and includes the
10 average value of all the model results.

<u>Model (\$ millions)</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>
Front Office	\$3.9	\$4.2	\$4.3
GRID	\$3.2	\$3.8	\$4.1
Average	\$3.6	\$4.0	\$4.2

11 **Q. Please provide a detailed explanation of the model methodologies for each**
12 **model used to value the economic curtailment product.**

13 A. *Front Office Model*

14 In the Front Office model, the economic curtailment product is priced off
15 of the market value of energy over those hours in which curtailment is anticipated.
16 Curtailment is expected to occur in the highest priced hours, which is determined
17 by the current forward price curve and the Company's current hourly scalars.
18 Monsanto is compensated with 100 percent of the market value of the energy
19 during the hours in which curtailment is anticipated to occur. The model assumes

1 the Company will be able to optimize the curtailment hours and always curtail
2 during the highest priced hours.

3 *GRID Model*

4 The GRID model provides a system-wide view of the benefit of providing
5 the economic curtailment product on an hour-by-hour basis. The GRID model
6 includes the existing portfolio of Company resources, which includes Company
7 owned physical assets, power purchase agreements, and contracts. To determine
8 the value of Monsanto's economic curtailment product, a base case GRID run
9 without Monsanto's resource is performed. Then, Monsanto's economic
10 curtailment contract is added at "zero cost" and the model is rerun. The
11 difference between the two studies is the value of the economic curtailment
12 contract. The Company uses the GRID model to determine net power costs in
13 this rate case. Since Monsanto's interruptible credit is included as a component of
14 net power costs, it is logical to use the same model to determine the value of the
15 interruptible products provided by Monsanto.

16 **Q. Did the Company consider any additional models or methodologies for use in**
17 **determining a value for the economic curtailment product?**

18 A. Yes. Similar to the operating reserve product consideration, the Company
19 considered using the value from a peaker resource comparison but again
20 determined the application in establishing value for economic curtailment was not
21 appropriate due to the differences in the products, terms and conditions that
22 Monsanto is capable of providing and the products, terms and conditions that a
23 peaker resource is capable of providing, as described earlier in my testimony.

1 **System Integrity Product Valuation**

2 **Q. Please summarize the results of the model used to value the system integrity**
3 **product.**

4 **A. The table below summarizes the results of the Front Office model for system**
5 **integrity.**

<u>Model (\$ millions)</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>
Front Office	\$0.1	\$0.1	\$0.1

6 **Q. Please provide a detailed explanation of the model methodology used to value**
7 **the system integrity product.**

8 **A. *Front Office Model***

9 The system integrity product gives PacifiCorp the right to curtail
10 Monsanto when a double contingency or voltage event occurs. The double
11 contingency event is defined as two or more forced outages totaling 500
12 megawatts or more of capacity within 48 hours of each other and must overlap for
13 at least an hour. As with the economic curtailment product, the customers benefit
14 when PacifiCorp avoids market purchases to meet Monsanto's load during a
15 system integrity event. The product is priced using an average annual heavy load
16 hour (6x16) market price for energy, with the assumption that the probability of a
17 system integrity event is constant throughout the year. The annual average
18 market price is applied to capacity available for the product and for the full limit
19 of hours for which the product is available. The GRID model is not capable of
20 pricing this product.

1 **Summary of Results and Recommendation**

2 **Q. Please summarize the results of the Company's analysis of the value of**
3 **Monsanto's interruptible products.**

4 A. The Company employed two models in order to evaluate the price at which
5 customers are indifferent as to whether the interruptible product is provided by
6 Monsanto or provided from another source. The models properly account for the
7 primary factors that influence the value of the various interruptible products. The
8 model results are summarized in the following table:

Summary of Average Model Results

Product	2011	2012	2013
Operating Reserves	\$2.4	\$3.0	\$3.3
Economic Curtailment	\$3.6	\$4.0	\$4.2
System Integrity	\$0.1	\$0.1	\$0.1
Total	\$6.1	\$7.1	\$7.6

9 **Q. Please summarize the Company's recommendation for the interruptible**
10 **credit to be included in the Monsanto contract for service commencing**
11 **January 1, 2011.**

12 A. The Company recommends taking the average results of the Front Office and
13 GRID models that were used to price the operating reserves and economic
14 curtailment products as the basis for a credit for those two products. The
15 Company recommends using the result of the Front Office model as a basis for
16 the credit for the system integrity product. The Company recommends a total
17 credit to Monsanto for the three products of \$6.1 million in 2011. If the term of

1 the agreement covers 2012 or 2013, then the Company recommends values of
2 \$7.1 million and \$7.6 million, respectively as shown in the table below:

Product	2011	2012	2013
Operating Reserves	\$2.4	\$3.0	\$3.3
Economic Curtailment	\$3.6	\$4.0	\$4.2
System Integrity	\$0.1	\$0.1	\$0.1
Total	\$6.1	\$7.1	\$7.6

3 **Q. How long should the pricing you are recommending be in effect?**

4 A. Absent an agreement between the Company and Monsanto on a contract length,
5 the Commission ordered pricing should be in effect until rates change in the
6 context of the next general rate case or other appropriate docket properly before
7 the Commission.

8 **Q. Should other terms of the contract change at this time?**

9 A. No. The values recommended by the Company apply only if Monsanto provides
10 the same interruptible products under the same terms and conditions as those
11 found in the Contract, with the assumption of 800 hours of economic curtailment.

12 **Q. Can you provide any additional evidence to support this value?**

13 A. In Case No. PAC-E-07-05, Commission Staff proposed a valuation method for
14 Monsanto's interruptible products in which the value or credit included in the
15 existing contract is used as a starting point and then an adjustment is made to that
16 value to account for changes in the market curves that have occurred since the
17 time that the value in the existing contract was established. Staff recommended
18 this approach be applied to all three products: economic curtailment, operating
19 reserves, and system integrity. The Company does not believe this method
20 accurately values the interruptible products since other factors besides market

1 prices influence the value of the interruptible products. However, this approach
2 recommended by Commission Staff can be used as a point of reference in
3 evaluating the direction that interruptible product value has moved since the last
4 contract was executed. Therefore, the Company performed an analysis using this
5 approach suggested by the Commission Staff. In June 2007 when the current
6 three-year Monsanto contract was negotiated, the average price of on-peak energy
7 at Palo Verde for 2008 through 2010 (the term of the negotiated contract) was
8 \$73.08 per megawatt hour. In June 2010, the average price of on-peak energy at
9 Palo Verde for the three year term 2011 through 2013 is \$50.27 per megawatt
10 hour. This is a decline of 31 percent. In other words, the value of a three-year
11 strip of energy has decreased by 31 percent since the last Monsanto contract was
12 negotiated. This reference point supports the fact that interruptible product value
13 has decreased since the last Monsanto contract was executed.

14 **Q. If the Commission does not issue a ruling on the value of Monsanto's**
15 **curtailment products by January 1, 2011, what should happen?**

16 **A. The Contract between the Company and Monsanto ends December 31, 2010.**
17 **Absent a Commission decision or stipulation between the two parties resolving**
18 **the matter, there will be no contract in place governing curtailment or obligating**
19 **the parties to any contract terms. Therefore, the Company would have no right to**
20 **curtail Monsanto and Monsanto would have no claims to value or compensation**
21 **for interruptible products it currently provides the Company. Beginning January**
22 **1, 2011, Monsanto will receive a bill at the Commission determined cost of**
23 **service rate for their energy usage with no offset for the interruptible products,**

1 and the impact to power costs would be trued up through the energy cost
2 adjustment mechanism actual expenses in 2011.

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

4 **A. Yes.**