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BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

IN THE MATTER OF THE APPLICATION OF US MAGNESIUM LLC FOR DETERMINATION OF LONG-TERM ECONOMIC DEVELOPMENT RATES AND CONDITIONS OF INTERRUPTIBLE SERVICE	Docket No. 03-035-19
PACIFICORP, dba UTAH POWER & LIGHT CO. vs. US MAGNESIUM LLC	Docket No. 04-035-20

PREFILED SUPPLEMENTAL TESTIMONY OF ROGER J. SWENSON

US Magnesium LLC hereby submits the Prefiled Supplemental Testimony of Roger J. Swenson in each of Dockets 03-035-19 and 04-035-20.

DATED this 13th day of October, 2004.

Gary A. Dodge,
Attorney for US Magnesium LLC

PREFILED SUPPLEMENTAL TESTIMONY

Of

ROGER J. SWENSON

On behalf of US Magnesium LLC

IN THE MATTER OF THE APPLICATION OF US MAGNESIUM LLC FOR
DETERMINATION OF LONG-TERM ECONOMIC DEVELOPMENT
RATES AND CONDITIONS OF INTERRUPTIBLE SERVICE

Docket No. 03-035-19

PACIFICORP, dba UTAH POWER & LIGHT CO. vs. US MAGNESIUM LLC

Docket No. 04-035-20

October 13, 2004

1 **Q. What is the purpose of your supplemental testimony?**

2 A. The Parties have had a number of discussions since the initial testimony was filed
3 and felt that it would be constructive to have PacifiCorp and US Magnesium
4 update their testimony to reflect the current status of the discussions and positions
5 of the parties.

6 **Q. Please summarize US Magnesium's position in this docket as of the time the**
7 **original testimony was filed.**

8 A. The Interruptible Task Force provided information that supported a wide range of
9 possible valuation approaches and rates for interruptible service. Within that
10 range were rates based on the costs of peaking units and demand side management
11 projects which were below \$20/MWH. Also, the average variable cost of energy
12 is below \$16/MWH. In light of that cost information, and particularly when
13 considered in the light of the history of US Magnesium's facilities in this state and
14 relevant economic considerations, US Magnesium proposed that its existing
15 \$21/MWH base rate be continued but that the number of hours it would be
16 exposed to market be reduced to better reflect actual demand requirements of the
17 utility. US Magnesium proposed that interruption in the shoulder months of June
18 and September should be triggered only when temperature forecasts would
19 support a likely peak day. US Magnesium also offered to provide significant new
20 value to the utility by providing spinning reserves. US Magnesium proposed a 10-
21 year term, with rate increases tied to increases in Schedule 9 rates as a result of

1 cases filed after the effective date of the new contract (but not above the rates paid
2 by other special contract customers).

3 **Q. Has US Magnesium's position changed since its initial testimony was filed?**

4 B. Only slightly. We have refined our analyses and explored with the other parties a
5 number of different ways of measuring cost of service and calculating values.
6 Based on those discussions and analyses, US Magnesium remains convinced that
7 its requested rates and conditions of service are reasonable and supportable. We
8 are, however, modifying our request slightly to account for comments we have
9 received on our proposed temperature trigger. Rather than proposing a 100 degree
10 temperature trigger for interruption in June and September, we are modifying our
11 request to propose a temperature trigger on interruptibility for up to four hours on
12 any non-holiday week day from June through September when the forecasted
13 temperature is projected to be higher than the mean historic temperature for that
14 month. We also propose to be interruptible for non-holiday weekdays in
15 December and January for up to four hours when the temperature is projected to
16 be below the average mean historic temperature for those months.

17 **Q. Would you please summarize the discussions and analyses that have been**
18 **performed since your original testimony was filed and explain why you**
19 **believe they support your request?**

20 A. The primary focus of the continuing discussions has been a refinement of the
21 existing cost of service allocation model used by PacifiCorp to allocate costs
22 among firm customer classes. A number of adjustments have been made to the

1 cost of service model in an attempt to reflect a more appropriate cost of service
2 basis for an interruptible customer or class of customers. The primary
3 adjustments that have been discussed are:

- 4 o demand factor allocation;
- 5 o peaking resource cost allocation; and
- 6 o monthly allocation of certain costs.

7 We have also analyzed the value of various products or services that US
8 Magnesium can provide that are not easily reflected in a cost of service analysis.
9 These include:

- 10 o system integrity interruption;
- 11 o operating reserves; and
- 12 o market exposure.

13 **Q. Does US Magnesium agree that a firm cost of service model is the best means**
14 **of determining the cost of service for an interruptible customer or the value**
15 **to the system of customers who are willing to be interrupted?**

16 A. No. In Docket 01-035-38, which led to the Commission's May 24, 2002 Order
17 setting the current contract terms, we complained that using a firm cost of service
18 approach to determining the cost of interruptible service was inappropriate. There
19 appeared to be widespread agreement with at least some of our criticisms, but the
20 parties complained that they lacked sufficient time to develop a more appropriate
21 methodology. For that reason, among others, the Commission directed the task
22 force to explore in detail an appropriate means of determining the cost of

1 interruptible service. In the early task force meetings, the parties again generally
2 conceded that the use of a firm cost of service approach had significant limitations
3 for determining the value of interruptibility. Despite this consensus and despite
4 significant efforts by task force members, however, we were unable to arrive at
5 any kind of a consensus on the most appropriate way to measure the value of
6 interruptibility or the cost of serving a large interruptible customer like US
7 Magnesium. We are thus left in this case with a number of different possible
8 ways to analyze the cost of interruptible service.

9 We continue to firmly believe that the use of a firm cost of service-based
10 approach is not the best means for evaluating the cost of service to US
11 Magnesium. We continue to rely primarily upon the approach historically used
12 since the time the special contract was executed and the approach discussed in
13 prior task forces – focusing on average variable costs plus a contribution to fixed
14 costs, bolstered by comparison to other peaking resources being acquired by the
15 utility.

16 **Q. Do the discussions and analyses relating to the firm cost of service approach**
17 **that have occurred since the initial testimony was filed support your**
18 **position?**

19 A. Yes. After making a number of reasonable adjustments to the firm cost of service
20 model and deducting reasonable values for other products offered or provided by
21 US Magnesium, the resulting cost of service is in the \$21/MWH range, as US
22 Magnesium has proposed.

1 **Q. Would you please briefly explain each of the three adjustments you described**
2 **earlier to the firm cost of service model? First, please explain the demand**
3 **allocation adjustment.**

4 A. The cost of service (COS) allocation model uses factors that are built up from
5 usage and demand from specific periods to allocate certain costs to customer
6 classes. One of the factors uses the coincident peak (cp) demand of the customer
7 class at the time of the system peak. This factor is used to allocate much of the
8 fixed system costs within the allocation model. If an interruptible customer
9 misses the system peak for a given number of months, the allocation factor is
10 reduced accordingly. For example, if a customer missed six monthly peaks, as
11 PacifiCorp proposes for US Magnesium, US Magnesium would be allocated 50%
12 of the cp's. The coincident peak could be missed by the customer either dropping
13 load or buying through from the market at specific shaped indexed prices.

14 **Q. What impact would this change have on the COS rate determination for US**
15 **Magnesium?**

16 A. Using this adjustment, based on a March 2003 test year at the target rate of return,
17 PacifiCorp calculated this adjustment to produce a rate for US Magnesium of
18 \$25.94/MWH, as reflected in Exhibit USM 1S.1.

19 **Q. Can you explain the second adjustment, the allocation of peaking resources?**

20 A. Yes. There are specific resources that generally are used to meet peak demand
21 period needs. These resources are generally simple cycle combustion turbines
22 (SCCT). These resources have a higher operating cost than most plants and are

1 run in general less than 30% of the time and in many instances less than 15% of
2 the time. A number of resources have been added to the system in the past few
3 years, generally based on claims of a dire need to meet system shortfalls for
4 summer peaking capacity from load growth in the Salt Lake City area. The
5 existing COS model spreads the costs of these resources over much of the year,
6 when the primary intended use and benefit of the units is for the summer months.

7 **Q. What adjustment did you make to the SCCT resource cost allocation?**

8 A. I modified the fixed cost allocation factor of the SCCT resource to be weighted
9 more toward the summer months. I changed the operating hours allocation to only
10 the four summer months June through September. This has the effect of moving
11 75% of the fixed costs attributable to these resources to those months. It leaves
12 25% of the fixed costs to be allocated over the full year based on energy allocation
13 factors. This gives some credit for the benefits that are provided from the
14 resource running in the non-summer months when economic. It allocates most of
15 the fixed costs to the summer period where the units provide the greatest benefit.

16 **Q. What impact does this have on the US Magnesium COS?**

17 A. This reduces the COS allocation to US Magnesium by \$.24/MWH, as reflected in
18 Exhibit USM 1S.2.

19 **Q. Please explain the third adjustment, concerning the allocation of certain costs
20 and revenues on a monthly basis rather than on an annual basis.**

21 A. I made adjustments to the allocation of two major cost and revenue items in the
22 COS model - purchase power costs and sales revenues. Both of these items are

1 allocated on an annualized basis within the existing COS methodology. Given
2 that the value and quantity of both can vary substantially during various months of
3 the year, it makes sense to allocate these at a more detailed level for purposes of
4 an interruptible customer. The data to allocate on a monthly basis is readily
5 available so a more accurate allocation should come from the adjustment. Making
6 these two changes reduces the US Magnesium COS allocation by \$.36/MWH, as
7 reflected in Exhibit USM 1S.3.

8 **Q. If these three adjustments were made to the firm COS model, what would be**
9 **the resulting rate to US Magnesium?**

10 A. The net COS with these adjustments would be \$25.34/MWH.

11 **Q. Is this a realistic cost of service for US Magnesium?**

12 A. No. As I have explained, it is difficult to contort a firm cost of service study into
13 a reasonable analysis of the cost of serving an interruptible customer. Also, as
14 discussed below, the cost of service analysis wholly fails to recognize several
15 value factors.

16 **Q. Can you better explain the values that the COS model does not capture?**

17 A. Yes. I will specifically address the value of system integrity interruptions,
18 operating reserves and market exposure.

19 **Q. Please explain system integrity interruptions.**

20 A. Under system upset or imbalance circumstances that threaten service to firm
21 service customers, US Magnesium has agreed to be dropped off of the system
22 before firm customers. In the Monsanto contract, these types of interruptions are

1 limited to a maximum of 12 hours per year and the calculated value is \$.37/MWH.

2 For purposes of this case, US Magnesium is willing to accept these parameters.

3 US Magnesium thus proposes to offer a similar number of hours of potential

4 interruption for a similar value.

5 **Q. Will you please explain the operating reserves that US Magnesium can**
6 **provide?**

7 A. A utility is required to hold operating reserves to insure safe and reliable operation
8 of the entire grid system. As discussed with PacifiCorp, US Magnesium could be
9 called upon to drop load within 10 minutes and be off for up to 1 hour. These
10 outages could occur for up to 3 hours in any 4 hour period and would be limited to
11 100 hours per year. The value of this resource was calculated to be \$2.92/MWH
12 based on using 94% of the year as non-buy through available hours and the
13 pricing for reserves as established in the Monsanto case of \$2.06/kw month and a
14 91% load factor. This calculation is reflected in Exhibit USM 1S.4.

15 **Q. The third value you mentioned is the market exposure that US Magnesium**
16 **absorbs when it is interrupted. Please explain.**

17 A. The value to PacifiCorp of interrupting US Magnesium is more than avoiding
18 system peaks. This can be illustrated by the fact that the COS model would
19 produce essentially the same value whether the six months of interruption are the
20 six months with the highest peaks or the six months with the lowest peaks. US
21 Magnesium pays market prices for power during periods of interruption, causing
22 the overall value received by PacifiCorp from the interruptions to be higher. The

1 market purchase buy-through arrangement was established to make sure that US
2 Magnesium is not part of the peak in a month of interruption. Peaks are typically
3 driven by higher demand brought about for the most part by temperature-driven
4 loads. Those temperature-driven loads will typically be lower during days when
5 the temperature is higher than the normal temperature in the summer months and
6 below the normal temperature in winter months. For example, on the last day of
7 September the temperature was 70 degrees. There had been many days above that
8 temperature earlier in the month, including some days in the 90's. That day was
9 certainly not going to be a system peak, but US Magnesium still had to buy
10 through based on the terms of the existing arrangement. The extra payments for
11 such days increase US Magnesium's cost but do not affect the peak for the month.
12 The reduced cost to serve resulting from this extra revenue is not reflected
13 anywhere in the COS.

14 It can conservatively be assumed that the only days in which interruption
15 will truly be needed to avoid system peaks are days in which the temperature is
16 projected be higher than the historic monthly mean. Accordingly, no more than
17 50% of the days are actually required for interruption in order to catch the peak
18 day. The total cost to US Magnesium of buy-through purchases during the test
19 period, as reflected in the Interruptible Task Force Report, was \$2.94/MWH. If
20 50% of the days were not needed, assuming interruption was necessary only when
21 temperatures were above average in the summer and below in the winter, then

1 approximately 50% of the market exposure cost should be credited back to US
2 Magnesium. That would be equivalent to \$1.47/MWH.

3 **Q. If the six adjustments you have discussed above were made to the firm cost of**
4 **service results, what would be the resulting base rate for US Magnesium?**

5 A. The net COS after the three adjustments are made and the three non-COS values
6 are deducted would produce a base rate for interruptible service to US Magnesium
7 of \$20.58/MWH, as reflected in Exhibit USM 1S.5.

8 **Q. What does this analysis tell you?**

9 A. First, let me reiterate that I do not believe adjusting firm cost of service results is
10 the best way to determine the cost of service for an interruptible customer. I
11 continue to support the approaches used historically and the approaches discussed
12 in my initial direct testimony. Nevertheless, after making a few reasonable and
13 defensible adjustments to the COS model and crediting additional value
14 components for benefits that US Magnesium can provide as an interruptible
15 customer, the resulting cost is very close to the value that I derived by comparing
16 peaking resources and DSM alternatives. I believe this confirms the
17 reasonableness of US Magnesium's proposals in this case.

18 **Q. If US Magnesium were to continue to pay the base rate of \$21.00 per MWH**
19 **as you have proposed, will the cost to US Magnesium or the value to**
20 **PacifiCorp remain essentially the same as under the current contract?**

21 A. No. Both US Magnesium's costs and the value to PacifiCorp will increase
22 substantially. Because US Magnesium will provide operating reserves,

1 PacifiCorp will receive significantly greater value than under the current contract.
2 Similarly, the cost to US Magnesium will increase because it will be subject to
3 over 100 hours of down time when operating reserve and system integrity
4 interruptions are required. This down time could potentially cost US Magnesium
5 over \$1,000,000 in lost production value.

6 **Q. Your supplemental testimony is also addressing the ongoing contract dispute**
7 **concerning payment terms. What do you propose to resolve this dispute?**

8 A. US Magnesium proposes that the issue be resolved within the context of new
9 contract terms that will address both parties' reasonable needs and concerns. We
10 propose to pay the amount that PacifiCorp claims should be paid (other than the
11 amount subject to stipulation pending resolution of the ongoing appeal) after the
12 end of this year. We propose that the Commission set the deposit level under the
13 new contract at \$210,000.

14 A customer should not be required to provide more of a deposit or other
15 credit coverage than is reasonably required to adequately protect PacifiCorp and
16 its other ratepayers from potential losses. US Magnesium agrees that PacifiCorp
17 should have the right to terminate service if a required payment is not received
18 within 7 days after the date it is due. US Magnesium believes that this provides
19 the best means to reduce potential exposure. Given the amount of money held by
20 PacifiCorp at any given time for QF sales from US Magnesium in the prior month,
21 along with a deposit at the requested level of \$210,000, PacifiCorp and its
22 ratepayers will not be at risk of a US Magnesium default so long as termination

1 can occur within seven days of a missed payment.

2 **Q. Will you please summarize your supplemental testimony?**

3 A. Yes. US Magnesium proposes to continue to pay a \$21 base rate, with market
4 exposure limited to days in which the projected temperature is projected in four
5 summer months to be above and in two winter months to be below the historic
6 mean monthly temperature. US Magnesium proposes to offer a new value
7 component by providing operating reserves. US Magnesium proposes to have its
8 deposit requirement set at \$210,000. This proposal is just and reasonable and is
9 supported by both my initial testimony and subsequent discussions involving
10 adjustments to the firm cost of service results and valuation of other products that
11 can be provided by US Magnesium.

12 **Q. Does this complete your testimony?**

13 A. Yes.

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing was served by email or US Mail, postage prepaid, this 13th day of October, 2004, on the following:

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