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**Case No.:**

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FAC  
Mantle/Surrebuttal  
Public Counsel  
EO-2017-0065

**SURREBUTTAL TESTIMONY**

**OF**

**LENA M. MANTLE**

Submitted on Behalf of the Office of the Public Counsel

**EMPIRE DISTRICT ELECTRIC COMPANY**

CASE NO. EO-2017-0065

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**Denotes Highly Confidential Information  
that has been Redacted**

July 28, 2017

**NP**

**BEFORE THE PUBLIC SERVICE COMMISSION  
OF THE STATE OF MISSOURI**


In the Matter of the Sixth Prudence	)	
Review of Costs Subject to the	)	
Commission-Approved Fuel Adjustment	)	Case No. EO-2017-0065
Clause of The Empire District	)	
Electric Company	)	

**AFFIDAVIT OF LENA MANTLE**

**STATE OF MISSOURI**    )  
                                  )   ss  
**COUNTY OF COLE**     )

Lena Mantle, of lawful age and being first duly sworn, deposes and states:


1. My name is Lena Mantle. I am a Senior Analyst for the Office of the Public Counsel.
2. Attached hereto and made a part hereof for all purposes is my surrebuttal testimony.
3. I hereby swear and affirm that my statements contained in the attached testimony are true and correct to the best of my knowledge and belief.

  
Lena M. Mantle  
Senior Analyst

Subscribed and sworn to me this 28<sup>th</sup> day of July 2017.



JERENE A. BUCKMAN  
My Commission Expires  
August 23, 2017  
Cole County  
Commission #13754037

  
Jerene A. Buckman  
Notary Public

My Commission expires August 23, 2017.

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**SURREBUTTAL TESTIMONY**

**OF**

**LENA M. MANTLE**

**THE EMPIRE DISTRICT ELECTRIC COMPANY**

**CASE NO. ER-2017-0065**

1 **Q. Please state your name.**

2 A. My name is Lena M. Mantle.

3 **Q. Are you the same Lena M. Mantle that filed direct and rebuttal testimony in**  
4 **this case?**

5 A. Yes, I am.  
6

7 **PURPOSE OF TESTIMONY**

8 **Q. What is the purpose of your surrebuttal testimony?**

9 A. The purpose of my surrebuttal testimony is to respond to the rebuttal testimony  
10 on the same issues I address in my direct testimony. In my direct testimony, I  
11 recommend the Commission find the Empire District Electric Company  
12 ("Empire") hedging policy resulted in unjust and unreasonable rates and order  
13 Empire to refund \$13,104,811.18 plus interest to its customers in the first fuel  
14 adjustment clause ("FAC") rate change case after the Commission's order  
15 becomes effective in this case. There has been no testimony filed or evidence  
16 presented that change this recommendation.

17 I also recommend, in my direct testimony, that the Commission direct  
18 Staff in its FAC prudence reviews to include a review of "true" purchased power  
19 and off-system sales to determine if there is any imprudence regarding the electric  
20 utility's purchased power and off-system sales practices. With respect to this  
21 recommendation, I provide surrebuttal testimony that shows, contrary to Empire

1 witness Aaron Doll's rebuttal testimony, Staff did not conduct a review of "true"  
2 purchased power and off-system sales.

3 Also, with respect to this recommendation, Staff witness David C. Roos  
4 provided rebuttal testimony that a review of purchased power as provided in my  
5 direct testimony would be a good use of Staff resources.<sup>1</sup> Even so, he then  
6 recommends the Commission not direct Staff to do such an analysis and declares  
7 that reviewing "true" purchased power is not a useful metric.<sup>2</sup> In this testimony, I  
8 respond to Mr. Roos' testimony that an expectation for Staff to review "true"  
9 purchased power is misleading, irrelevant,<sup>3</sup> and unreasonable.<sup>4</sup> A comprehensive  
10 review of the costs and revenues included in Empire's FAC should contain a  
11 review of "true" purchased power and off-system sales. Not doing such a review  
12 negates the customer protection provided through the statutory requirement for  
13 prudence reviews of FACs in Section 386.266.4(4) RSMo.

14 I also made the recommendation in my direct testimony that the  
15 Commission direct Staff, in its FAC prudence reviews, to conduct a review of  
16 each generating unit's heat rates. OPC witness John A. Robinett provided support  
17 for this recommendation. Staff witness J Luebbert responded to Mr. Robinett's  
18 testimony with a discussion on baseline heat rates. Because I was the Manager of  
19 the Staff Energy Department at the time FAC rules were written and I worked  
20 directly with the Staff engineers when baseline heat rates were established, I  
21 respond to Mr. Luebbert's suppositions in his testimony regarding heat rate testing  
22 and the purpose of baseline heat rates.

23 **Q. Why it is important to look at "true" purchased power and off-system sales**  
24 **in prudence reviews?**

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<sup>1</sup> Roos Rebuttal, pg 12, ln 3 - 5

<sup>2</sup> *Id.*, ln 12 - 13

<sup>3</sup> *Id.*, pg 2, ln 8 - 9; pg 3 ln 13-14

<sup>4</sup> *Id.*, pg 8

1 A. There are two types of purchased power that make up the Commission's  
2 definition of "true" purchased power. One type of purchased power is obtained  
3 through purchased power contracts. Empire currently has long-term purchased  
4 power contracts with the Plum Point Power Plant, Elk River Windfarm, and  
5 Meridian Way Wind Farm. In addition, Empire may enter into short-term  
6 purchased power agreements with neighboring utilities but this is becoming rare  
7 with the advent of the Southwest Power Pool Integrated Market ("SPP IM").

8 The other component to "true" purchased power is the additional energy  
9 required to meet customers' requirements above energy supplied from Empire's  
10 resources.<sup>5</sup> These are spot market energy purchases. It is prudent for Empire to  
11 take advantage of low spot market prices by purchasing when spot market cost is  
12 less than its cost to generate.

13 Long-term purchased power contracts are evaluated as a part of Empire's  
14 resource planning process. Short-term purchased power contracts are evaluated  
15 based on short-term needs and price expectations. Spot market energy purchases  
16 are based on the amount of Empire generation SPP dispatches which, in turn, is  
17 based on the bid price for its generation that Empire provides the SPP market.

18 A reliance on purchasing spot market energy on the SPP IM increases risk  
19 of price volatility to the ratepayers because purchased power energy costs are  
20 included in the FAC. Therefore, it is important to look at this piece of "true"  
21 purchased power separate from the energy purchased through long-term contracts.

22 Since the FAC protects the utility from virtually all price and availability risk of  
23 spot market purchases and transfers that risk to Empire's customers, it is critical  
24 to review the utility's purchase power practices in FAC prudence reviews to  
25 determine if Empire is becoming reliant on spot market energy to meet its  
26 customers' energy requirements at a detriment to its customers.

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<sup>5</sup> These resources include both generation and purchased power contracts.

1 Similarly, there are two types of off-system sales – contract and spot  
2 market sales. Empire currently has only off-system sales contracts with  
3 municipalities and these revenues are not included in the FAC. Spot market off-  
4 system sales is the energy sold into the SPP IM from Empire generation resources  
5 and purchased power above what is necessary to meet the needs of its native load  
6 customers.

7 Without an FAC a utility retains all off-system sales revenue above what is  
8 included in the revenue requirement in the last rate case. This gives the utility a  
9 powerful incentive to make off-system sales. With an FAC, almost the entire off-  
10 system sales revenue is returned to the customers. Consequently there is little  
11 incentive for the utility to make off-system sales because it sees minimal benefit  
12 from making those sales. It is important therefore to review the off-system sales  
13 of the utility. Empire should be offering its resources into the SPP IM when cost-  
14 effective to off-set the fuel and purchased power costs of meeting its customers'  
15 needs.

16 **REBUTTAL OF AARON DOLL**

17 **Q. Would you summarize Mr. Doll's rebuttal of your direct testimony?**

18 A. Mr. Doll explains that Empire reports its sales and revenues within the Southwest  
19 Power Pool ("SPP") as required by the Federal Energy Regulatory Commission  
20 ("FERC") Order 668 and then asserts that Staff reviewed Empire's netted figures.

21 **Q. What is your response to this testimony?**

22 A. Mr. Doll's testimony is misleading. OPC did not make any assertions that Empire  
23 does not keep its records in compliance with FERC orders. It is OPC's testimony  
24 that purchased power and off-system sales are not provided in the FAC reports  
25 submitted to the Commission consistent with FERC Order 668.

26 **Q. What testimony did you provide with respect to FERC Order 668?**

1 A. The only reference to FERC Order 668 in my direct testimony is found in the first  
2 full paragraph on page 5 which is answering a question as to why OPC only  
3 conducted a review of Empire's purchased power and off-system sales  
4 information.

5 **Q. Mr. Doll claims that Staff reviewed Empire's netted figures. Do you know**  
6 **what he based his assertion on?**

7 A. I asked this of Mr. Doll in OPC data request 8005. The response provided  
8 follows:

9 As outlined in Mr. Doll's rebuttal testimony and in accordance  
10 with FERC Order 668, all market charges and revenues are netted  
11 in the general ledger. The data provided on the Monthly FAC  
12 Reports, includes general ledger information for all accounts that  
13 flow through the Missouri fuel adjustment clause, which includes  
14 all of the FERC 555 accounts. The FERC 555 accounts include the  
15 netted energy and operating reserve purchases.

16 **Q. How do you interpret his response?**

17 A. It is his testimony he believes the Staff reviewed purchased power and off-system  
18 sales solely because Empire provided its general ledger information to Staff.

19 **Q. Did Staff, in fact, review "true" purchased power and off-system sales as Mr.**  
20 **Doll asserts?**

21 A. According to Staff responses to OPC data requests 60, 61, and 74, Staff did not  
22 conduct such a review.

23 **Q. What does this lead you to conclude about Mr. Doll's testimony?**

24 A. Mr. Doll's testimony is misleading because OPC did not provide testimony that  
25 Empire did not keep its records as FERC requires. Mr. Doll's testimony is also  
26 based on unsubstantiated assumptions that, since Empire gave Staff the  
27 information, Staff must have reviewed it. OPC witness John Riley outlines other  
28 portions of Mr. Doll's rebuttal testimony that are also misleading.



**RESPONSE TO THE REBUTTAL TESTIMONY OF STAFF WITNESS ROOS**

**Q. Mr. Roos begins his rebuttal testimony by opining that your use of Commission *Report and Orders* to define “true” purchase power is misleading.<sup>6</sup> Would you respond to Mr. Roos’ assertion?**

A. Mr. Roos assertion that OPC’s expectation is misleading is based on a narrow interpretation of Commission report and orders. I agree with Mr. Roos that the Commission defined “true” purchased power in its *Report and Orders* to explain what transmission costs were to be included in the FAC. However, that does not signify that the Commission’s definition is only relevant to transmission costs. The fact that the Commission felt it necessary to define these terms shows that the Commission considered that the distinction of “true” purchased power and off-system sales as defined by the Commission in these *Report and Orders* is important.

**Q. Is there anything in the Commission *Report and Orders* that lead you to this conclusion?**

A. Yes. The first Commission *Report and Order* defining “true” purchased power and off-system sales is in the Union Electric Company, d/b/a Ameren Missouri (“Ameren Missouri”) rate case ER-2014-0258.<sup>7</sup> The Commission, in its Finding of Facts regarding what transmission costs should be included in the FAC, described how Ameren Missouri considered all the power it provides MISO to be purchased power.<sup>8</sup> The Commission then goes further to find:

5. In other contexts, **Ameren Missouri recognizes the distinction between serving its native load and making off-system sales.** For example, when accounting for fuel costs, the

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<sup>6</sup> *Id.*, pg 2, ln 8 – 9; pg 3 ln 13-14

<sup>7</sup> The Commission cited the *Report and Order* from ER-2014-0258 in its *Report and Orders* in the Empire rate case ER-2014-0351 and the Kansas City Power & Light Company rate case ER-2014-0371

<sup>8</sup> This is a financial transaction only. The electricity generated by Ameren Missouri is delivered to its customers in the same manner as it was prior to the MISO market.

1 company separates fuel expense to serve native load from fuel  
2 expense to make off-system sales.

3 6. In addition to the distinction between serving native load  
4 and making off-system sales, **Ameren Missouri can also**  
5 **purchase power from MISO or other third parties to**  
6 **supplement its self-generated power.** All three scenarios are  
7 reasons why Ameren Missouri could incur wholesale transmission  
8 costs under FERC Account 565, and these are the transmission  
9 costs Ameren Missouri seeks to pass through its FAC.

10 7. Furthermore, under FERC Order 668, public utilities must net  
11 their MISO-cleared load and generation in each hour and report  
12 that net amount as either: (i) sale for resale (i.e. off-system sale  
13 under account 447 when the utility's cleared generation exceeds  
14 the cleared load, or (ii) a power purchase under Account 555 when  
15 the utility's cleared load exceeds its cleared generation. **That**  
16 **order states "Netting accurately reflects what participants**  
17 **would be recording on their books and records in the absence**  
18 **of the use of an [regional transmission organization ("RTO")]**  
19 **market to serve their native load."** That means that for  
20 **accounting purposes, Ameren Missouri is required to recognize**  
21 **the distinction between off-system sales, power purchased to**  
22 **supplement its generation and self-generated power.** (footnotes  
23 omitted)<sup>9</sup>

24 It is evident from these findings of fact that not only this Commission, but also  
25 Ameren Missouri and FERC, recognize the value of disaggregating the amount  
26 the utility pays the RTO for energy into two categories: (1) power purchased to  
27 supplement its generation, and (2) self-generated power. Likewise there is value  
28 in the distinction between generation for serving its native load and making off-  
29 system sales.

30 In addition, in its *Report and Order* in the Kansas City Power & Light  
31 Company ("KCPL") rate case ER-2016-0285, the Commission found:

32 80. OPC presented credible evidence that further reporting  
33 requirements would be appropriate; namely, requirements that

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<sup>9</sup> Pages 112 – 113, emphasis added.

KPCL report FAC costs and revenues by subaccount, and that  
KCPL's reporting be done in accordance with FERC Order 668.

The Commission in its *Report and Order* in this KCPL case directed the  
following information be included in KCPL's monthly FAC report submissions:

Purchased power costs and off-system sales revenues provided in  
all FAC filings and report submissions shall be in accordance with  
FERC order 668 and the Commission's definition of purchased  
power costs and off-system sales revenue. The Commission shall  
also require KCPL to continue reporting Purchased Power ("PP"),  
Transmission Costs ("TC") and Revenue from Off-System Sales  
("OSSR") in a manner consistent with the Rider FAC approved by  
the Commission in this case.

**Q. Mr. Roos testimony seems to suggest that only costs disputed in Commission  
orders and information provide through reporting requirements should be  
reviewed in its FAC prudence reviews.<sup>10</sup> Do you agree with Mr. Roos?**

A. No, I do not. I am unaware of any limitations proscribed by statute or  
Commission rule. Staff's limited review of Empire's filing restricts the  
Commission's access to essential information and analysis necessary for the  
Commission to exercise its consumer protection authority.

**Q. Are you aware of the Commission placing any constraints on what Staff can  
and cannot review as part of an FAC prudence review?**

A. No, I am not. It has been my experience that Staff defines the scope for its FAC  
prudence reviews. In Staff's notice in this case<sup>11</sup> that it was beginning a prudence  
review, it laid out the scope of its review.<sup>12</sup> I am unaware of the Commission  
issuing an order in response to such a notice that limited the scope of an FAC  
prudence review to exclude relevant information.

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<sup>10</sup> Roos rebuttal, pg 3

<sup>11</sup> Staff Notice of Start of Sixth Prudence Audit, pg 3, filed on September 6, 2016

1           Also included in the notice of the start of the prudence review for this  
2           case, Staff states it may change its approach during its review<sup>13</sup> which is  
3           consistent with good prudence review practices. If the review turns up a concern,  
4           Staff and other parties should review additional information to resolve the  
5           concern. If the concern cannot be resolved with reviewing additional information,  
6           a detailed audit should be conducted to determine if imprudence occurred and  
7           customers were harmed.

8           Constraining what Staff and OPC may investigate would negate the central  
9           consumer protection authority provided in Section 386.266.4(4) RSMo  
10          underpinning the FAC mechanism. The FAC is a single issue rate mechanism  
11          that allows preferential recovery of fuel and purchased power costs. The utility is  
12          allowed to recover these costs with the only check being the FAC prudence  
13          review.

14   **Q.    Mr. Roos states that none of the Missouri electric utilities have requirements**  
15   **related to “true” purchased power and off-system sales.<sup>14</sup> Is he correct?**

16   A.    No, he is not. As described above, the Commission ordered KCPL to report  
17   “true” purchased power and off-system sales in KCPL’s last rate case.

18   **Q.    That order was issued after Staff filed its report in this prudence review case.**  
19   **Should Staff have reviewed this information in its FAC prudence review of**  
20   **Empire’s FAC even though the Commission had not ordered Empire to**  
21   **provide purchased power and off-system sales information in its monthly**  
22   **FAC reporting requirements?**

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<sup>12</sup> Staff interchangeably uses the terminology “review” and “audit” to refer to the work it did in this case. OPC witness Charles R. Hyneman explains in his rebuttal testimony the difference between a review and an audit. For consistency, I use the term “review” to refer to Staff’s work in this case.

<sup>13</sup> *Id*

<sup>14</sup> Roos Rebuttal, pg 4

1 A. Yes. Staff should have looked at this information regardless of whether or not the  
2 Commission required monthly submissions of the information from Empire. This  
3 information is available and Staff has the ability to request the information from  
4 Empire. The Commission had, by the time Staff started its review of Empire's  
5 FAC, provided definitions of "true" purchased power in three of its *Report and*  
6 *Orders*. This has been an issue in every electric rate cases since the Commission  
7 first defined "true" purchased power and off-system sales in ER-2014-0258 in its  
8 April 29, 2015 *Report and Order*.

9 Even if the Commission had not included this distinction in its orders, a  
10 comprehensive review of purchased power and off-system sales should include a  
11 review of contract purchased power and spot market purchases and sales.  
12 Increased knowledge is gained by disaggregating and reviewing the purchased  
13 power and off-system sales components.

14 **Q. Is there an electric utility that has reported purchased power and off-system**  
15 **sales consistent with FERC Order 668 and the Commission's definition of**  
16 **"true" purchased power and off-system sales?**

17 A. Yes. To my knowledge, Ameren Missouri has always submitted purchased power  
18 and off-system sales in its FAC reports consistent with FERC Order 668 and the  
19 Commission's definition of "true" purchased power and off-system sales.

20 **Q. Mr. Roos' rebuttal testimony includes a section titled FERC Order 668.**  
21 **Would you summarize FERC Order 668 and its implications to this issue?**

22 A. Yes. As provided above, the Commission summarized FERC Order 668 well in  
23 its Report and Order in case ER-2014-0258:

24 7. Furthermore, under FERC Order 668, public utilities must net  
25 their MISO-cleared load and generation in each hour and report  
26 that net amount as either: (i) sale for resale (i.e. off-system sale  
27 under account 447 when the utility's cleared generation exceeds

1 the cleared load, or (ii) a power purchase under Account 555 when  
2 the utility's cleared load exceeds its cleared generation. That order  
3 states "Netting accurately reflects what participants would be  
4 recording on their books and records in the absence of the use of an  
5 RTO market to serve their native load." That means that for  
6 accounting purposes, Ameren Missouri is required to recognize the  
7 distinction between off-system sales, power purchased to  
8 supplement its generation and self-generated power. (footnotes  
9 omitted)<sup>15</sup>

10 The distinction between off-system sales, power purchased to supplement its  
11 generation, and self-generated power was important enough for FERC to issue an  
12 order to make sure utilities preserved this information. For the same reasons  
13 FERC requires the information to be preserved, it is important for Staff and other  
14 parties to be able to review the information in rate cases and FAC prudence  
15 reviews and audits.

16 **Q. Is compliance with FERC Order 668 an issue in this case?**

17 A. No, it is not. It is my understanding that Empire keeps its general ledger in  
18 accordance with FERC Order 668. However, the purchased power and off-system  
19 sales information provided in Empire's FAC reports is different from what FERC  
20 Order 668 requires. The purchased power cost in the FAC reports is the total  
21 amount Empire pays SPP for the energy requirements of its load. Off-system sales  
22 revenues in the FAC reports are the gross amount Empire receives from SPP for  
23 its generation. There is no distinction in the FAC reports submitted by Empire of  
24 "true" purchased power and off-system sales.

25 **Q. Since FERC Order 668 is not the issue, what is the issue you are addressing?**

26 A. Foremost, this case is about Empire's imprudent hedging strategy and the impact  
27 of that strategy on Empire's ratepayers. The issue addressed with respect to  
28 purchased power and off-system sales is whether or not Staff should be directed to

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<sup>15</sup> Page 113

1 review the amount and cost of energy purchased from the SPP market above  
2 Empire's generation and the amount and cost of energy sold to the SPP market  
3 above Empire's customers' requirements. As described earlier in this testimony,  
4 the Commission has defined this as "true" purchased power and off-system sales.  
5 FERC Order 668 is just another indication that the preservation of this  
6 information holds value to FERC.

7 **Q. Mr. Roos states in his rebuttal testimony that OPC did not raise the issue of**  
8 **reporting "true" purchased power and off-system sales in Empire's last rate**  
9 **case ER-2016-0023.<sup>16</sup> Is this relevant to whether or not Staff should be**  
10 **looking at "true" purchased power and off-system sales?**

11 A. No, it is not. Just as Staff should not be limited in what it looks at in its FAC  
12 prudence reviews by Commission orders, it should not be limited to what others  
13 have or have not brought up in testimony in past rate cases. Likewise, OPC is not  
14 limited to only reviewing issues it raised in prior rate cases.

15 **Q. Did OPC raise any concerns regarding "true" purchased power and off-**  
16 **system sales in the last Empire rate case ER-2016-0023?**

17 A. Yes. OPC raised the issue of purchased power and off-system sales in Empire's  
18 last rate case.<sup>17</sup> The Commission had not yet provided the label of "true"  
19 purchased power and off-system sales at the time rebuttal testimony was filed in  
20 the Empire case so that terminology was not used.

21 **Q. Mr. Roos also states as a reason that OPC's expectation is misleading is that**  
22 **there is no mention of FERC Order 668 in the reporting or reviewing**  
23 **requirements of ER-2014-0258, the first case in which Mr. Roos could find a**

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<sup>16</sup> Roos Rebuttal, pg 6

<sup>17</sup> Mantle rebuttal, pg 12 - 16

1        **mention of FERC Order 668.<sup>18</sup> Was there a need for a reporting**  
2        **requirement regarding FERC Order 668 in that case?**

3        A. No, there was not. The case mentioned by Mr. Roos was an Ameren Missouri  
4        rate case and Ameren Missouri was already reporting its purchased power and off-  
5        system sales as required by FERC Order 668. There was no need to ask the  
6        Commission order Ameren Missouri to provide FAC reports in compliance with  
7        FERC Order 668.

8        **Q. Mr. Roos describes the first instance he found of FERC Order 668 being**  
9        **included in OPC's testimony was in a rate case filed after the Commission's**  
10       ***Report and Order* in the Empire rate case.<sup>19</sup> Is this distinction important**  
11       **regarding whether or not "true" purchased power and off-system sales**  
12       **should be reviewed in FAC prudence reviews?**

13        A. No, it is not. The concept of "true" purchased power and off-  
14        system sales was brought up in the last Empire rate case ER-2016-0023. Then the  
15        Commission defined "true" purchased power and off-system sales in its *Report*  
16        *and Order* in ER-2014-0258 on April 29, 2015. By the time Staff filed notice of  
17        its prudence review of Empire's FAC on September 6, 2016, more than 16 months  
18        later, the Commission provided this definition in two additional *Report and*  
19        *Orders*. The important dates to consider are when the Commission made the  
20        distinction of "true" purchased power and off-system sales - three times prior to  
21        the beginning of Staff's prudence review of Empire's FAC; not when OPC first  
22        mentioned FERC Order 668 or when OPC first requested reporting requirements.  
23        FERC Order 668 is significant because it shows FERC considered the distinction  
24        important enough to issue an order to make sure the utilities recorded information  
25        in a manner that would give an accurate picture of the utility.

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<sup>18</sup> Roos rebuttal, pg 6

<sup>19</sup> *Id*



1 **Q. What support do you have that FERC issued its Order 668 because of**  
2 **concerns regarding accuracy of information?**

3 A. FERC Order 668 includes the following conclusion:

4 Commission Conclusion

5 80. Recording RTO energy market transactions on a net basis is  
6 appropriate as purchase and sale transactions taking place in the  
7 same reporting period to serve native load are done in  
8 contemplation of each other and should be combined. **Netting**  
9 **accurately reflects what participants would be recording on**  
10 **their books and records in the absence of the use of an RTO**  
11 **market to serve their native load. Recording these transactions**  
12 **on a gross basis, in contrast, would give an inaccurate picture**  
13 **of a participant's size and revenue producing potential.** The  
14 Commission will, therefore, adopt the proposed accounting for  
15 RTO energy market transactions with certain modifications and  
16 clarifications as discussed below. The Commission does expect  
17 public utilities, however, to maintain detailed records for auditing  
18 purposes of the gross sale and purchase transactions that support  
19 the net energy market amounts recorded on their books.<sup>20</sup>

20 **Q. Is Mr. Roos correct when he states that you mentioned FERC Order 668 in**  
21 **your testimony in the KCP&L – Greater Missouri Operations Company**  
22 **(“GMO”) rate case ER-2016-0156 in the context of changing your position in**  
23 **your direct testimony to allow certain transmission costs in the FAC?**<sup>21</sup>

24 A. No, he is not. A quick read of the page of my rebuttal testimony cited by Mr.  
25 Roos shows that, while one of the purposes of my rebuttal testimony was to  
26 modify the OPC's recommendation regarding the inclusion of transmission  
27 costs,<sup>22</sup> there were five other purposes of my rebuttal testimony. One of these  
28 purposes was to describe how GMO was defining purchased power and off-  
29 system sales differently than (a) the general definitions at the time the FAC statute

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<sup>20</sup> FERC Docket No. RM04-12-000; Order No. 668 *Accounting and Financial Reporting for Public Utilities Including RTOs* issued on December 16, 2005, emphasis added.

<sup>21</sup> Roos rebuttal, pg 6

<sup>22</sup> ER-2016-0351, Mantle Rebuttal, pg 1, ln 9 - 11

1 became law, (b) required by Commission orders in other cases, and (c) required by  
2 FERC Order 668.<sup>23</sup>

3 FERC Order 668 was not even mentioned in the section of my testimony  
4 describing why OPC was changing its recommendation.<sup>24</sup> FERC Order 668 is  
5 only mentioned in my testimony in ER-2016-0156 in that FERC has provided  
6 guidance on the recording of off-system sales and purchased power in a manner  
7 consistent with the Commission's definition of "true" purchased power and off-  
8 system sales.

9 **Q. Were you the only OPC witness that provided testimony regarding FERC**  
10 **Order 668 in ER-2016-0156?**

11 A. No. I just mentioned FERC Order 668 in my rebuttal testimony as support for  
12 OPC's concern for the potential for confusion regarding purchased power and off-  
13 system sales. OPC witness Charles R. Hyneman provided rebuttal testimony  
14 regarding FERC order 668 and why FERC found it necessary to issue its Order  
15 668.<sup>25</sup>

16 **Q. Mr. Roos again mentions in this section of his testimony that OPC did not tie**  
17 **FAC purchase power and off-system sales reporting requirements to Ameren**  
18 **Missouri.<sup>26</sup> Was it necessary for OPC to request this reporting requirement**  
19 **of Ameren Missouri?**

20 A. No. As I previously testified, Ameren Missouri was already reporting purchased  
21 power and off-system sales in its FAC submission as required by FERC Order  
22 668.

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<sup>23</sup> *Id.*, pg 1, ln 17-21

<sup>24</sup> *Id.*, pg 2 -5

<sup>25</sup> ER-2016-0156, Rebuttal testimony of Charles R. Hyneman, pg 36 - 39

<sup>26</sup> Roos rebuttal, page 7

1 **Q. How do you respond to Mr. Roos' testimony that the Commission's Report**  
2 **and orders in the KCPL, Ameren Missouri, and GMO rate cases ER-2016-**  
3 **0285, ER-2016-0179, and ER-2016-0156 are not relevant to Staff's FAC**  
4 **prudence review of Empire?**<sup>27</sup>

5 A. Mr. Roos seems to believe that just because Empire's last rate case was decided  
6 before the Commission orders in these cases, the cases are not relevant. Yet when  
7 OPC asked in its data request 65 of Staff which rate case dockets Mr. Roos was  
8 referring to as support for his testimony,<sup>28</sup> Mr. Ross replied that he relied on these  
9 three rate cases along with the last Empire rate case for his testimony.

10 The FAC in Missouri is complicated and is still evolving. Every case  
11 involving an FAC adds to the knowledge base of the Commission, Staff, OPC,  
12 and the utilities. The utilities constantly assure their customers that Staff is  
13 diligent in conducting FAC prudence reviews. The requirement for a prudence  
14 review is included in Empire's tariff.<sup>29</sup> OPC is just recommending that the  
15 Commission direct its Staff to review "true" purchased power and off-system  
16 sales as a part of its prudence review.

17 **Q. Moving to Mr. Roos testimony regarding the SPP market, Mr. Roos seems to**  
18 **be asserting that, because the Commission approved interim and conditional**  
19 **approval for Empire to participate in SPP, there is no reason to review**  
20 **"true" purchased power and off-system sales.**<sup>30</sup> **Does OPC agree with this**  
21 **assertion?**

22 A. No. As Mr. Roos pointed out, the Commission gave "interim and conditional  
23 approval" for Empire to participate in SPP. This approval does not alleviate all  
24 potential for imprudence with respect to Empire's purchase or sale of energy with

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<sup>27</sup> *Id*

<sup>28</sup> *Id*, pg 4

<sup>29</sup> The Empire District Electric Company, P.S.C. Mo. No. 5, Sec. 4, Original Sheet No. 17ab

<sup>30</sup> Roos Rebuttal, pg 9

1 SPP. Assuming a utility has the least-cost resources to meet the energy  
2 requirements of its customers on a stand-alone basis, participation in an RTO  
3 provides benefits of additional reliability and opportunity for cost-effective  
4 purchases and off-system sales. However, an FAC could change how a utility  
5 views its participation in an RTO energy market. With an FAC, the impact on  
6 utility earnings of meeting customer's load requirements with purchased power is  
7 very small regardless of the cost or the volatility of the cost to the customer.  
8 Therefore, there is little reason for the utility to be concerned with how much  
9 energy it is purchasing from the RTO.

10 The risk of a negative impact on earning with respect to owned-generation  
11 is much greater because not all the costs of generating energy are recovered  
12 through the FAC. Capital cost recovery is included in base rates. There is the  
13 potential for an imprudence disallowance when the plant is built which would  
14 impact earnings. There is a potential for changes in accounting and depreciation  
15 methodologies throughout the life of the plant resulting in stranded costs that  
16 could impact earnings. When there are large expenditures for new equipment at  
17 the plant, regulatory lag impacts utility earnings. If salvage and site  
18 dismantlement costs are greater than what were recovered for the plant in rates,  
19 there would be an impact on the utility's earnings.

20 On the customers' side, when a utility has an FAC, excessive spot market  
21 purchases of energy moves cost risk and volatility to the customer. While being  
22 part of SPP does give Empire access to other companies' generation, the price of  
23 that energy is subject to the laws of supply and demand of all the members of  
24 SPP. Other than its own generation and purchased power contracts, Empire has  
25 no control of the supply of energy. Empire's generation is less than 2% of the

1 total generation in SPP.<sup>31</sup> Each member of SPP is making decisions based on  
2 their view of what is best for them, not what is best for Empire's customers. And  
3 SPP is making decision on what is best for all of its members. Thus, the risk of  
4 cost volatility increases if Empire relies too much on SPP market purchases and  
5 since Empire has an FAC, that is risk that the customers assume.

6 **Q. Mr. Roos states that "[o]ne purpose of the SPP IM is to reduce price risk and**  
7 **increase energy availability by economically dispatching the regional**  
8 **generation resources to meet Empire's native load and the native load of**  
9 **other members of SPP.'"<sup>32</sup> Is this correct?**

10 A. No. SPP is an organization with 94 members. It is unrealistic to expect SPP to be  
11 specifically looking out for Empire's native load price risk. In fact, SPP's mission  
12 statement of "Helping our members work together to keep the lights on ... today  
13 and in the future" says nothing about price or price risk.

14 SPP's web site states that its integrated market adds "market functionality  
15 that will coordinate next-day generation across the region to maximize cost-  
16 effectiveness, provide participants with greater access to reserve energy, improve  
17 regional balancing of electricity supply and demand and facilitate the integration  
18 of renewable resources."<sup>33</sup> Reduced price risk may be an outcome of the current  
19 market but is not one of the purposes of the market.

20 **Q. Are there other aspects of the SPP market that Mr. Roos improperly**  
21 **characterizes?**

22 A. Yes. Mr. Roos states that Empire's generation resources are dispatched by SPP  
23 when SPP decides it is cost effective to deploy Empire's generation.<sup>34</sup> While SPP

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<sup>31</sup> According to SPP's website, its total generation capacity in 2016 was 83,945 MW. Empire's capacity was taken from Empire resource plan filing.

<sup>32</sup> Roos Rebuttal, pg 9

<sup>33</sup> <https://www.spp.org/markets-operations/integrated-marketplace/>

<sup>34</sup> Roos Rebuttal, pg 10

1 does dispatch Empire's generation units, Empire bids its units into the market.  
2 SPP makes its determination on which units to dispatch based on these bids.  
3 Empire may choose whether or not to offer a unit in the market and at what price  
4 to offer the unit for dispatch. The price may be above or below the actual cost to  
5 provide energy.

6 **Q. Mr. Roos opines that when you stated in your direct testimony that it is**  
7 **prudent for Empire to take advantage of low spot market prices by**  
8 **purchasing when spot market cost is less than its costs to generate, you were**  
9 **implying that Empire has the option of choosing its higher cost, non-SPP-**  
10 **dispatched generation over the lower cost SPP IM to meet its native load. Is**  
11 **this characterization of your testimony correct?**<sup>35</sup>

12 A. No. I was merely stating the fact that when it is less expensive to meet Empire's  
13 native load with spot market energy, it is prudent for Empire to do so.

14 **Q. Is Mr. Roos wrong when he states that Empire does not have the option of**  
15 **using its higher cost generation?**

16 A. Yes. As I described above, SPP dispatches based on Empire's bid. Empire  
17 determines the bid price. There are circumstances in which Empire may bid in a  
18 unit at a price lower than the cost of the plant. For example, if a higher cost plant  
19 needs to run to test equipment at a generation plant, Empire may bid the plant at  
20 below cost so that it recovers some of the cost it incurs to do the testing. If  
21 Empire has a bilateral contract that requires it to pay for a set amount of energy, it  
22 may bid that resource into the market at a price below the contract price in order  
23 to reduce its losses. These are costs that Empire is incurring, so it is prudent to  
24 bid low enough that SPP would dispatch these resources providing some revenue

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<sup>35</sup> *Id*

1 to off-set the costs Empire is required to pay. In these types of circumstances,  
2 Empire does use its higher cost generation.

3 **Q. Mr. Roos also states that Empire does not reserve energy it generates from**  
4 **SPP to meet its native load.<sup>36</sup> How would you respond to this statement?**

5 A. The SPP IM is a financial market. SPP, based on the bids offered by its members  
6 with resources, determines which units to dispatch. However, the electricity  
7 generated still goes to the closest draw. If SPP dispatches an Empire unit, the  
8 electricity goes to Empire's customers the same way it did prior to the SPP IM. If  
9 Empire has done a good job with its resource planning, its resources will be the  
10 most likely cost-effective resources to provide energy to its customers. If  
11 Empire's customers get their needs met by generation other than Empire's, this  
12 indicates either some other entity or entities in the SPP did not plan well and have  
13 an abundance of inexpensive power or Empire's resources are inadequate to meet  
14 Empire's customer's needs. This is why "true" purchased power must be  
15 reviewed in an FAC prudence review.

16 **Q. Is this an FAC issue or a resource planning issue?**

17 A. It is actually an issue with both the FAC and resource planning. Fuel and  
18 purchased power costs are a direct result of the implementation of a resource plan.  
19 Having an FAC impacts cost recovery and in turn the utility's earnings. As  
20 described above, having an FAC changes the risk associated with different  
21 resource planning options. The Commission's Electric Utility Resource Planning  
22 Chapter 22 requires the utilities to consider mitigation of risks associated with  
23 uncertain factors and rate increases associated with alternative resource plans.<sup>37</sup>  
24 However, it does not require the utility to look at mitigating customer bill

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<sup>36</sup> *Id*

<sup>37</sup> 4 CSR 240-22.010(2)(C)1. & 3.

1           volatility or price risk. Therefore, it is important to look at these in context of an  
2           FAC prudence review.

3   **Q.   Finally, Mr. Roos states that you did not actually review “true” purchased**  
4   **power.<sup>38</sup> Is he correct?**

5   A.   No. I reviewed “true” purchased power in two components described above in my  
6       testimony. A summary of my review and a graph of purchased power contract  
7       costs, SPP IM market purchases, and SPP IM off-system sales is included in my  
8       direct testimony. However, Mr. Roos is correct in that I did not conduct a review  
9       of the combined purchased power contract costs and SPP IM purchases. As stated  
10      by Mr. Roos, it makes little sense to review the two components combined<sup>39</sup> for  
11      the reasons previously provided in this testimony.

12   **Q.   Mr. Roos states that Staff reviewed the components of Empire’s FAC. Did**  
13   **that include a review of the components of “true” purchased power that Mr.**  
14   **Roos states it makes sense to review?<sup>40</sup>**

15   A.   No. According to Staff’s response to OPC data requests 60 and 74, Staff did not  
16       review the components of Empire’s “true” purchased power.

17   **Q.   Since Mr. Roos stated that purchased power should be reviewed as OPC**  
18   **provided in its direct testimony,<sup>41</sup> did Staff agree to do similar analysis in**  
19   **future prudence reviews?**

20   A.   No.

21   **Q.   What did Staff review with respect to purchased power as part of its**  
22   **prudence review in this case?**

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<sup>38</sup> Roos Rebuttal, pg 11

<sup>39</sup> *Id*

<sup>40</sup> *Id*

<sup>41</sup> *Id*, pg 12



1 A. According to the Staff report, it reviewed Empire's long term purchased power  
2 agreements for prudence.<sup>42</sup> It reviewed purchased power costs and native load  
3 cost (what Empire paid SPP for its native load's energy requirement.).<sup>43</sup> Staff's  
4 report only gives the prudence review period totals for the review period. The  
5 analysis conducted by Staff was not described and no workpapers were provided  
6 that show any analysis of purchased power costs by Staff.

7 **Q. What off-system sales revenue did Staff review?**

8 A. According to the Staff prudence review report, it only reviewed the total revenue  
9 provided from SPP for its generation and long-term purchased power energy.<sup>44</sup>  
10 There was no analysis conducted on the off-system sales Empire made on the SPP  
11 IM. Again, the Staff report only gives the total revenue for the review period.  
12 The analysis conducted by Staff was not described in its report and no workpapers  
13 were provided that show any analysis by Staff of off-system sales revenues.

14 **Q. If only given the information provided in Staff's report, what would a logical**  
15 **conclusion be regarding the amount of Empire's purchased power costs and**  
16 **off-system sales revenue?**

17 A. According to the Staff report, total purchased power costs were  
18 \*\* which included long-term purchased power contracts costs of  
19 \*\* and transmission costs of \$5,866,463.<sup>45</sup> Off-system sales  
20 revenues were \*\*\$ \*\*. <sup>46</sup> These values provided by Staff indicate  
21 Empire was a net purchaser of energy by \*\*, and since its long-  
22 term purchased power contract costs were \*\* it would seem that

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<sup>42</sup> *Sixth Prudence Review of Costs Related to the Fuel Adjustment Clause for the Electric Operations of the Empire District Electric Company, Staff Report*, File No. EO-2017-0065, February 28, 2017, pg 19 - 20

<sup>43</sup> *Id.*, pg 21 - 22

<sup>44</sup> *Id.*, pg 25-26

<sup>45</sup> *Id.*, pg 21

<sup>46</sup> *Id.*, pg 25

1 Empire's SPP market purchased power for the review period cost \*\* \*\*  
2 and Empire made no sales on the SPP IM.

3 **Q. What were Empire's actual SPP IM purchased power costs and revenues**  
4 **during the prudence review period?**

5 A. From Empire's general ledger entries<sup>47</sup> as shown in Schedule LMM-D-3 of my  
6 direct testimony, Empire's SPP IM purchased power costs for the prudence review  
7 period were \$31,746,115 and it received \$27,027,458 in revenues from sales of  
8 energy on the SPP IM.

9 **Q. How do you reconcile these numbers?**

10 A. I have not been able to. I do know that the values attached to my direct testimony  
11 are from the general ledger provided in response to Staff data request 29 which  
12 contain purchased power costs and off-system sales recorded in compliance with  
13 FERC Order 668. It is my understanding that Staff's values came from FAC  
14 reporting requirements provided by Empire.

15 **Q. Is this why OPC has been requesting this information to be provided in the**  
16 **FAC reports consistent with FERC Order 668?**

17 A. Yes.

18 **Q. Finally, do you have any concluding remarks with respect to Staff's**  
19 **testimony to OPC's recommendation that the Commission direct Staff to**  
20 **include a review of "true" purchased power and off-system sales in its FAC**  
21 **prudence reviews?**

22 A. Staff agrees with OPC that it makes sense to review the components of "true"  
23 purchased power and off-system sales, however, it is reluctant to agree to do so.  
24 Therefore, the recommendation remains that the Commission direct Staff to

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<sup>47</sup> Entered in compliance with FERC Order 668

1 include a review of “true” purchased power and off-system sales in its future  
2 prudence reviews. Since the Staff believes, and I agree, that a review of the  
3 combination of long-term purchased power costs and SPP IM purchases does not  
4 make sense, then Staff should review each separately. In addition, Staff should  
5 include a review of Empire’s SPP IM sales as recorded in compliance with FERC  
6 Order 668.

7 **RESPONSE TO THE REBUTTAL TESTIMONY OF STAFF WITNESS**

8 **LUEBBERT**

9 **Q. Would you provide a brief summary of why there is a requirement for heat**  
10 **rate testing results as minimum filing requirements when an electric utility**  
11 **requests continuation or modification of an FAC?**

12 **A.** Yes. As stated in the direct testimony of OPC witness John A. Robinett, a heat  
13 rate is a measure of generating station thermal efficiency. It is a measure of how  
14 efficient a power plant is in converting fuel to electricity. Comparisons of heat  
15 rates over time show changes in performance of a generation plant and help to  
16 monitor overall plant performance. There are different ways of calculating heat  
17 rates from the simple method of dividing the British thermal units (“Btu”) content  
18 of the fuel burned by the resulting net kilowatt-hour of generation (“kWh”) to a  
19 heat rate test methodology that meets the performance testing standards of the  
20 American Society of Mechanical Engineers.

21 As Engineering Supervisor and Manager of the Energy Department of  
22 Staff, engineers under my supervision used heat rate curves as an input into the  
23 fuel production cost modeling as Staff currently does. Prior to the passage of  
24 Section 386.266 RSMo, the engineers noted that the utilities, in an effort to save  
25 costs, were not conducting regular, rigorous heat rate testing of their generation  
26 plants on a regular basis. While this was a challenge in accurately estimating fuel  
27 costs for revenue requirement, it was the utilities that ultimately were taking the

1 risk. As power plant efficiencies decline, it costs more in fuel to generate the same  
2 amount of energy. Any increased costs incurred due to decreased efficiency in  
3 power plants would impact utility earnings. Customer's bills would remain the  
4 same until the next rate case.

5 However, once the increased costs due to inefficiencies were to be passed  
6 on to customers through a rate adjustment mechanism, such as an FAC, Staff  
7 engineers viewed the utilities' indifference towards monitoring power plant heat  
8 rates as problematic. With an FAC, any increase in fuel costs due to reductions in  
9 heat rate efficiencies would be passed on to the customers. For this reason, Staff  
10 proposed, and the Commission adopted, the reporting requirement found in 4 CSR  
11 240-3.161(2)(P) which requires a utility requesting the establishment of an FAC  
12 to provide proposed schedules and heat rate and/or efficiency testing plans with  
13 written procedures for all generation plants in order to determine a base level of  
14 efficiency for each of the plants. For subsequent general rate cases in which the  
15 utility requested a continuation or modification of an FAC, Staff requested, and  
16 the Commission adopted,<sup>48</sup> a minimum filing requirement for the utility to  
17 provide the results of heat rate and/or efficiency tests conducted at least 24 months  
18 prior to the utility's request for an FAC.<sup>49</sup>

19 **Q. Mr. Luebbert states that the term baseline is not defined or mentioned**  
20 **anywhere in 4 CSR 240-3.161.<sup>50</sup> Is he correct?**

21 A. He is correct that the term "baseline" is not defined or mentioned, but the  
22 synonymous term "base level" is used. The minimum filing requirement for the  
23 establishment of an FAC, 4 CSR 240-3.161(2)(P), states:

24 A proposed schedule and testing plan with written procedures for  
25 heat rate tests and/or efficiency tests for all of the electric utility's

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<sup>48</sup> EX-2006-0472, *Final Order of Rulemaking*, pg 13 - 14

<sup>49</sup> 4 CSR 240-3.161(3)(Q)

<sup>50</sup> Luebbert Rebuttal, pg 5

1 nuclear and non-nuclear generators, steam, gas, and oil turbines and  
2 heat recovery steam generators (HRSG) **to determine the base**  
3 **level of efficiency** for each of the units. (emphasis added)

4 A “base level of efficiency” is a baseline to which heat rates provided in future  
5 cases should be compared. The absence of the word “baseline” does not signify  
6 there was no intent for baseline heat rates to be determined for which efficiency  
7 gains or losses could be measured. While not using the specific word, it is clear  
8 that it was the intent of the Commission for baseline heat rates to be established  
9 for each generating unit of each utility with an FAC.

10 **Q. Did the Missouri electric utilities provide the schedules and testing plans**  
11 **required by 4 CSR 240-3.161(2)(P) in the cases in which they requested and**  
12 **received approval for an FAC?**

13 A. GMO, Empire, and Ameren Missouri did. The testing procedures and schedules  
14 were carefully scrutinized by Staff engineer Michael Taylor.<sup>51</sup> Changes were  
15 made by these utilities regarding testing procedures and standards and the  
16 schedules for the tests as a result of Mr. Taylor’s analysis.

17 The Staff *Revenue Requirement Cost to Serve Report* describes that KCPL  
18 followed the heat rate testing procedures laid out for GMO in ER-2007-0004 and  
19 KCPL provided a schedule that was reviewed by Staff witness Randy S. Gross.<sup>52</sup>

20 **Q. Were baseline heat rates set for the utilities in their first general rate cases in**  
21 **which they filed to continue or modify their FACs?**

22 A. Yes, baseline heat rates were set for GMO, Empire, and Ameren Missouri.<sup>53</sup>

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<sup>51</sup> Rebuttal testimonies of Michael E. Taylor in ER-2007-0004, ER-2008-0093, and ER-2008-0318

<sup>52</sup> Case ER-2014-0370, *Staff Report Revenue Requirement Cost of Service*, pg 203-204

<sup>53</sup> ER-2009-0090, *Staff Report Cost of Service*, pg 144; ER-2011-0004 *Staff Report Cost of Service*, pg 101;  
ER-2011-0028, *Staff Report Revenue Requirement Cost of Service*, pg. 122

1 **Q. Mr. Luebbert states that there is not an established method to calculate or**  
2 **determine what the “baseline” heat rate should be for each generating unit.**  
3 **Do you agree?**

4 A. No. As Mr. Taylor explained in his rebuttal testimony in the GMO rate case, ER-  
5 2007-0004, attached to this testimony as Schedule LMM-S-1, there are a number  
6 of adequate testing procedures provided in The American Society of Mechanical  
7 Engineers’ Performance Test Codes (ASME-PTC). In his rebuttal testimony  
8 regarding Empire heat rate testing in case ER-2007-0093, he provided Staff’s  
9 expectation that procedures by Empire and other electric utilities be comparable to  
10 the Aquila procedures.<sup>54</sup> While these performance test codes are not specifically  
11 designed to determine “baseline” heat rates, they are standards that were used to  
12 determine the baseline heat rates provided by GMO, Empire, and Ameren  
13 Missouri in their next rate cases. In addition, it was Mr. Taylor’s testimony in the  
14 Empire rate case ER-2007-0093 that, while Staff did not expect heat rate testing  
15 procedures that duplicated the ASME-PTC, these performance codes utilize  
16 current industry practices and should provide a starting point for heat rate testing  
17 procedures to meet the requirements of the Commission rule.<sup>55</sup>

18 **Q. Did Staff discuss the purpose of base line heat rates in any of its testimony?**

19 A. Yes. In its report in case ER-2009-0090, Staff stated:

20 GMO’s heat rate and/or efficiency testing results are the baseline  
21 against to which to measure the future efficiency of the units.<sup>56</sup>

22 In its report in case ER-2011-0004, Staff stated:

23 There are now base line heat rate testing results for all of Empire’s  
24 generating plants to which future heat rate test results can be  
25 compared as a measure of the change of efficiency of the plant.<sup>57</sup>

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<sup>54</sup> Rebuttal Testimony of Michael E. Taylor, ER-2007-0093, pg 5

<sup>55</sup> *Id.* pg 6

<sup>56</sup> *Staff Report Cost of Service*, ER-2009-0090, pg 144

1 Finally, in its report in case ER-2011-0028:

2 There are now base line heat rate testing results for all of Ameren  
3 Missouri's generating plants to which future heat rate test results  
4 can be compared as a measure of the change of efficiency of the  
5 plant.<sup>58</sup>

6 **Q. What is your experience with the aforementioned testimony?**

7 A. At that time I served as Manager of the Commission's Energy Department,  
8 which was assigned the task of reviewing the heat rate information. I  
9 reviewed the work of the department's engineers.

10 **Q. At that time, was it your understanding that these baseline heat rates would**  
11 **only be compared to the heat rate test results in the next rate case and that**  
12 **new baseline should be established as Mr. Luebbert seems to imply?**<sup>59</sup>

13 A. No. Baselines are appropriate for as long as heat rate testing procedures are  
14 consistent. No information regarding changes in efficiency can be obtained from  
15 one data point. Two data points only provide information regarding the difference  
16 between those two points in time. A trend in changes in efficiencies cannot be  
17 determined until there are three or more data points. More information is gained  
18 with every data point. Baselines should only be reset when major changes are  
19 made at a power plant.

20 **Q. Would you summarize your surrebuttal testimony to Mr. Luebbert?**

21 A. Yes. Baseline heat rates to meet standards that general conform to industry-  
22 standard practices were established for Empire's generating units in ER-2011-  
23 0004. Staff has testified in two rate cases after that case that Empire has provided  
24 heat rate test results that meet the Commission's FAC minimum filing

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<sup>57</sup> Staff Report Cost of Service, ER 2011-0004, pg 101

<sup>58</sup> Staff Report Revenue Requirement, Cost of Service, ER-2011-0028, pg 122

<sup>59</sup> Luebbert Rebuttal, pg 5-6

1 requirements.<sup>60</sup> In the most recent rate case, Staff merely testified that the heat  
2 rate tests were conducted within the 24 month requirement of the rule. The results  
3 of these heat rate tests should be included in the review by Staff in each rate case  
4 and FAC prudence case for indications of unexpected decreases in efficiencies.  
5 Anything less is a degradation of the customer protection of prudence reviews  
6 required by Section 386.266 RSMo.

7 **Q. Does this conclude your surrebuttal testimony?**

8 **A.** Yes, it does.

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<sup>60</sup> ER-2012-0345, *Staff Report Cost of Service*, pg 145-146; ER-2014-0351, *Staff Report Cost of Service*, pg 126-127; and ER-2016-0023, *Staff Report Revenue Requirement*, pg 138



Exhibit No.:

Issues: Fuel Adjustment Clause

Witness: Michael E. Taylor

Sponsoring Party: MO PSC Staff

Type of Exhibit: Rebuttal Testimony

Case No.: ER-2007-0004

Date Testimony Prepared: February 20, 2007

**MISSOURI PUBLIC SERVICE COMMISSION**

**UTILITY OPERATIONS DIVISION**

**REBUTTAL TESTIMONY**

**OF**

**MICHAEL E. TAYLOR**

**AQUILA, INC.**

**D/B/A AQUILA NETWORKS-MPS AND AQUILA NETWORKS-L&P**

**CASE NO. ER-2007-0004**

**Jefferson City, Missouri  
February, 2007**

**BEFORE THE PUBLIC SERVICE COMMISSION**  
**OF THE STATE OF MISSOURI**

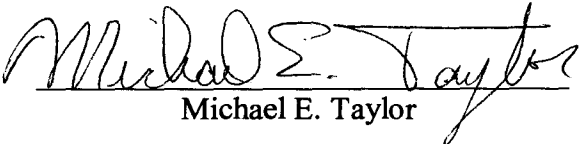
In the matter of Aquila, Inc. d/b/a Aquila )  
Networks-MPS and Aquila Networks- )  
L&P, for authority to file tariffs increasing )  
electric rates for the service provided to )  
customers in the Aquila Networks-MPS )  
and Aquila Networks-L&P service areas. )

Case No. ER-2007-0004

**AFFIDAVIT OF MICHAEL E. TAYLOR**

STATE OF MISSOURI     )  
                                  ) ss  
COUNTY OF COLE     )


Michael E. Taylor, of lawful age, on his oath states: that he has participated in the preparation of the following Rebuttal Testimony in question and answer form, consisting of 7 pages of Rebuttal Testimony to be presented in the above case, that the answers in the following Rebuttal Testimony were given by him; that he has knowledge of the matters set forth in such answers; and that such matters are true to the best of his knowledge and belief.

  
Michael E. Taylor

Subscribed and sworn to before me this 14 day of February, 2007.



SUSAN L. SUNDERMEYER  
My Commission Expires  
September 21, 2010  
Callaway County  
Commission #06942086

  
Notary Public

My commission expires 9-21-10

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**MICHAEL E. TAYLOR**  
**AQUILA, INC.**  
**D/B/A AQUILA NETWORKS-MPS AND AQUILA NETWORKS-L&P**  
**CASE NO. ER-2007-0004**

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1 Officer/Emergency Coordinator and Recovery Manager in the plant emergency response  
2 organization. During my employment with AmerenUE, I also participated in corporate  
3 activities related to other electrical generating and transmission facilities. These activities  
4 included task group evaluation of existing generating units and recommendations regarding  
5 AmerenUE's generation portfolio. In March 2003, I began my employment with the  
6 Commission.

7 Q. Did you file direct testimony in this case?

8 A. No.

9 Q. Have you filed testimony previously before the Commission?

10 A. Yes. I filed testimony in the general rate increase cases of Kansas City Power  
11 & Light Company and Union Electric Company d/b/a AmerenUE (Case Nos. ER-2006-0314  
12 and ER-2007-0002, respectively).

### 13 **EXECUTIVE SUMMARY**

14 Q. Please provide a summary of your testimony.

15 A. This testimony responds to direct testimony filed by Aquila and provides  
16 details of Staff's expectations for generating unit heat rate tests and/or efficiency tests for  
17 utilities operating under a Commission approved fuel and purchased power cost recovery  
18 surcharge. This testimony also provides Staff's position regarding use of certain industry  
19 standards as a general basis for the heat rate or efficiency tests and describes actions that  
20 should be taken by Aquila based on the results of the tests.

### 21 **COST RECOVERY MECHANISM--TESTING REQUIREMENTS**

22 Q. What is the purpose of your rebuttal testimony?

1           A.     My rebuttal testimony is responding to the direct testimony of Aquila witness  
2 H. Davis Rooney regarding compliance with Commission Rule 4 CSR 240-3.161(2)(P). The  
3 specific portion of Mr. Rooney's direct testimony addressed is page 27, lines 3-11.

4           Q.     What are the requirements of 4 CSR 240-3.161(2)(P)?

5           A.     This subsection of the rule provides requirements for heat rate tests and/or  
6 efficiency tests for generating units. Specifically, it requires an electric utility that files to  
7 establish a rate adjustment mechanism to file:

8                   A proposed schedule and testing plan with written procedures for heat  
9 rate tests and/or efficiency tests for all of the electric utility's nuclear  
10 and non-nuclear generators, steam, gas, and oil turbines and heat  
11 recovery steam generators (HRSG) to determine the base level of  
12 efficiency for each of the units;

13  
14          Q.     Does Mr. Rooney's testimony comply with this subsection of the rule?

15          A.     No. Mr. Rooney states in part, "Aquila has a proposed schedule for heat rate  
16 and/or efficiency testing with written procedures." and "The unit's heat rate will be  
17 determined with data collected during the Electrical Facility Ratings following the SPP  
18 procedures."

19          Q.     Has Aquila provided any information more detailed than that contained in Mr.  
20 Rooney's testimony?

21          A.     Yes. Staff submitted Data Request No. 0344 to obtain additional information.  
22 Aquila has provided additional information in response to that Data Request. The additional  
23 information was consistent with the original testimony in that it indicates Aquila's intention  
24 to perform the required heat rate and/or efficiency testing in conjunction with the SPP  
25 Facility Rating Test. According to Aquila's proposal, the typical data captured in the SPP  
26 Facility Rating Test would be supplemented with additional data obtained during the test. By

1 utilizing the typical rating test data and the supplemental data, a heat rate for the generating  
2 unit would be determined.

3 Q. Does Staff agree that this proposed methodology satisfies the requirements of  
4 4 CSR 240-3.161(2)(P)?

5 A. No.

6 Q. What procedures does Staff believe must be implemented by electric utilities  
7 operating under a Commission approved fuel and purchased power cost recovery surcharge in  
8 order for them to comply with the rule?

9 A. It is Staff's position that electric utilities operating under a fuel and purchased  
10 power cost recovery surcharge must have procedures in place that: 1) require testing of  
11 generation plant heat rates on a regular basis, 2) generally conform to industry-standard  
12 performance testing methodologies, 3) require identification of plant systems, structures, or  
13 components that are degrading overall plant heat rate/efficiency, and 4) require cost-effective  
14 maintenance or replacement activities on any such systems, structures, or components that  
15 have been identified as degrading overall plant heat rate/efficiency.

16 Q. Why does Staff believe these procedures are necessary for electric utilities  
17 operating under a fuel and purchased power cost recovery surcharge?

18 A. Electric utilities recovering fuel and purchased power costs based on a fixed  
19 amount set in a rate case (*i.e.*, using the traditional approach to rate setting) have strong  
20 incentives to control their fuel and purchased power cost. If a utility can reduce its overall  
21 fuel and purchased power cost below the fixed amount set in rates, this difference improves  
22 the utility's profitability. If on the other hand the utility experiences fuel and purchased  
23 power costs that exceed the fixed amount set in rates, this difference decreases the utility's

1 profitability. This dynamic creates a strong incentive for the utility to control its fuel and  
2 purchased power cost.

3 In contrast, electric utilities that can adjust their rates to reflect changes in fuel and  
4 purchased power cost between rate cases may have incentives to act prudently in their  
5 purchasing decisions; however, Staff does not view these incentives as being as effective as  
6 the incentive that exists to control these costs if no changes in rates are possible between rate  
7 cases.

8 Q. Does Staff have any specific recommendations for testing procedures?

9 A. Yes. Staff believes that a number of adequate testing procedures are provided  
10 in The American Society of Mechanical Engineers' Performance Test Codes (ASME-PTCs).

11 Q. What are the ASME-PTCs?

12 A. The ASME-PTCs are documents that specify recommended procedures for  
13 various types of power industry equipment. These procedures and documents are developed  
14 by committees of industry experts and published by The American Society of Mechanical  
15 Engineers (ASME). There are approximately fifty (50) Performance Test Codes associated  
16 with testing of power industry equipment.

17 Q. Can you provide examples of ASME-PTC topics?

18 A. Yes. Some of the ASME-PTC topics are listed below:

19 General Instructions (PTC 1 – 2004)

20 Test Uncertainty (PTC 19.1 – 2005)

21 Digital Systems Techniques (PTC 19.22 – 1986)

22 Steam Turbines (PTC 6 – 2004)

23 Fired Steam Generators (PTC 4 – 1998)

24 Performance Test Code on Overall Plant Performance (PTC 46 – 1996)

25 Performance Monitoring Guidelines for Steam Power Plants (PTC PM – 1993)

26 Wind Turbines (PTC 42 – 1988)

27 Performance Test Code on Gas Turbines (PTC 22 – 2005)

28



1 Q. Does Staff expect written procedures developed by Aquila for heat rate tests  
2 and/or efficiency tests to duplicate the ASME-PTCs?

3 A. No. Staff does not expect Aquila's written procedures to duplicate the ASME-  
4 PTCs. The ASME-PTCs provide a high level of detail, potentially more than would be  
5 expected by Staff. The ASME-PTCs utilize current industry practices consistent with  
6 obtaining accurate results, and should provide a starting point for development of testing  
7 procedures specific to individual generating units.

8 Q. When subsection (2)(P) of the above-noted Commission rule says "determine  
9 the base level of efficiency for each of the units", what does Staff understand would be  
10 included in this determination?

11 A. Staff expects the "base level of efficiency" to be determined in a manner that  
12 assures the generating unit is operating at optimum conditions unless there are known and  
13 expected degradation mechanisms, which then need to be taken into account. For newer  
14 generating units, the "base level of efficiency" could be determined from performance  
15 guarantee tests following construction of the unit. For older generating units, however, the  
16 "base level of efficiency" must be determined through a rigorous process that verifies the unit  
17 is performing at a level consistent with its age, hours of service, and prudent preventive and  
18 corrective maintenance.

19 Q. Earlier in your testimony, you stated that electric utilities operating under a  
20 fuel and purchased power cost recovery surcharge must, among other things, have procedures  
21 in place that "require testing of generation plant heat rates on a regular basis". What does  
22 Staff mean by "a regular basis"?

1           A.     Staff's expectation would be that the required testing would be performed at  
2 intervals not to exceed twenty-four (24) months.

3           Q.     What is the basis for Staff's twenty-four (24) month expectation?

4           A.     Subsection 4 CSR 240-3.161(3)(Q) provides information relative to this  
5 expectation. This subsection is included in a section of the rule that establishes requirements  
6 for filing a general rate proceeding (following the general rate proceeding that established a  
7 utility's rate adjustment mechanism (RAM)) in which the utility requests that its RAM be  
8 continued or modified. Subsection (3)(Q) sets forth the following filing requirement:

9                     The results of heat rate tests and/or efficiency tests on **all** the electric utility's  
10                    nuclear and non-nuclear steam generators, HRSG, steam turbines and  
11                    combustion turbines conducted within the **previous twenty-four (24) months**.  
12                    (Emphasis added.)  
13

14          This subsection indicates that all the electric utility's generating units would have been tested  
15 within the previous twenty-four (24) months. Therefore, it is reasonable to conclude from  
16 this requirement that a testing interval not to exceed twenty-four (24) months is expected.

17          Q.     Does this conclude your rebuttal testimony?

18          A.     Yes, it does.