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Witness: Graeme Miller
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MISSOURI PUBLIC SERVICE COMMISSION

UNION ELECTRIC COMPANY

d/b/a

AMEREN MISSOURI

CASE NO. ER-2014-0258

SURREBUTTAL TESTIMONY

OF

GRAEME MILLER

ON

BEHALF OF

MISSOURI DEPARTMENT OF ECONOMIC DEVELOPMENT

DIVISION OF ENERGY

Chicago, Illinois
February 6th, 2015

DOE Exhibit No. 706
Date 2-23-15 Reporter KF
File No. ER-2014-0258

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Union Electric Company d/b/a Ameren)
Missouri's Tariffs to Increase Its Revenues for) ER-2014-0258
Electric Service)

AFFIDAVIT OF GRAEME MILLER

STATE OF ILLINOIS)
) ss
CITY OF CHICAGO)

Graeme Miller, of lawful age, being duly sworn on his oath, deposes and states:

1. My name is Graeme Miller. I work in the City of Chicago, Illinois and I am employed by the University of Illinois at Chicago, Energy Resources Center, as an Energy Policy Analyst.
2. Attached hereto and made a part hereof for all purposes is my Surrebuttal Testimony on behalf of the Missouri Department of Economic Development – Division of Energy.
3. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct to the best of my knowledge.



Graeme-Miller

Subscribed and sworn to before me this 6th day of February, 2015



Notary Public

My commission expires: 7/23/2018



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1 **I. INTRODUCTION AND PURPOSE OF TESTIMONY**

2 **Q. Please state your name and business address.**

3 A. My name is Graeme Miller. My business address is 1309 S Halsted St. Chicago, IL
4 60607

5 **Q. By whom and in what capacity are you employed?**

6 A. I am employed by the Energy Resources Center located at the University of Illinois at
7 Chicago as an Energy Policy Analyst.

8 **Q. Have you testified previously in this case?**

9 A. Yes. On December 19th, 2014 I submitted direct testimony in ER-2014-0258 regarding
10 CHP and Ameren Missouri's Rider E.

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

12 A. The purpose of my surrebuttal testimony is to offer DE's response to Ameren Missouri's
13 testimony concerning Supplemental service as a part of Rider E, as outlined on pages 43-
14 50 of the rebuttal testimony of Ameren witness Mr. William R. Davis.

15 **II. RESPONSE TO THE REBUTTAL TESTIMONY OF WILLIAM R. DAVIS**

16 **Q. William R. Davis claims that Rider E has not prevented CHP development in
17 Missouri. Do you agree with his assessment?**

18 A. No I do not. The policy committee of the Midwest Cogeneration Association, a trade and
19 end-user association has identified standby rates as the primary regulatory barrier
20 preventing a greater realization for CHP in the Midwest. Furthermore, the analysis I
21 presented in my previous testimony has demonstrated that Rider E can be a huge barrier
22 towards CHP implementation for customers that would regularly pay the minimum
23 charge. Though it is difficult to reduce a decision not to install CHP down to one factor,

1 it is my experience that poorly designed standby rates will almost always create some
2 level of financial barrier towards project implementation. It is difficult to say with great
3 certainty why the two potential projects mention by Mr. Davis did not come to fruition.
4 He does not seem to have a definitive answer as well, though it is not unrealistic to think
5 that Rider E played a role in deterring these two sites from installing CHP.
6 Additionally, Mr. Davis cites the customer currently on Rider E as proof that the rate
7 isn't a barrier, adding that this customer has not paid the minimum charge in the past
8 three years. It is misleading, however, to present this example as evidence that Rider E is
9 not a barrier towards CHP. The logic contained within his argument is circular: if there
10 are customers on the rate then the rate is not a barrier. But no one is arguing that Rider E
11 is barrier for customers currently on Rider E. Rider E is a barrier for customers
12 contemplating CHP especially for those customers that would have to pay the minimum
13 charge.

14 **Q: Mr. Davis mentions large capital costs and small avoided electric rates as the two**
15 **primary reasons preventing a greater CHP realization in Ameren Missouri's**
16 **territory. Do you agree with his assessment?**

17 **A:** Certainly both of these factors contribute to a facility's decision to install CHP. Capital
18 costs can be quite high preventing many sites from installing CHP that do not have access
19 to capital while low avoided electric rates can increase system paybacks to unacceptable
20 levels. However, this argument is misleading for a number of reasons.
21 First, though other factors may contribute in preventing a greater CHP realization this
22 itself does not mean that Rider E is not also a barrier. Additionally, no one is arguing that
23 Rider E is the only barrier to CHP in Missouri. Just because other barriers to CHP exist

1 in Missouri does not prevent policy makers from addressing the very real financial
2 barriers that can be created through Rider E. This docket offers the opportunity to
3 address this specific barrier.

4 Second, though large upfront capital costs can deter CHP development a more accurate
5 reason preventing CHP is the payback associated with these capital expenditures. In my
6 experience, most businesses are primarily concerned with their core operations and will
7 only allocate capital to other projects (i.e. cogeneration) when paybacks are within a
8 certain range (usually 0-5 years for most industrial sites). Therefore, the barrier to CHP
9 isn't itself the capital expense but the rate at which that expense can be recovered. As
10 demonstrated below (and in my previous testimony), Rider E can significantly affect
11 CHP system payback thus deterring a greater CHP realization rate.

12 Lastly, Mr. Davis cites low avoided electric rates as a reason preventing CHP deployment
13 without acknowledging how Rider E affects this avoided rate. In his testimony, Mr.
14 Davis seems to be interchanging the terms 'avoided electric rate' and 'electric rate' even
15 though these two terms are wholly different and play different roles in the calculation of
16 CHP payback. The electric rate is most often thought of as the published retail rate
17 within Ameren Missouri's tariff book (or, more specifically, the fully burdened retail rate
18 inclusive of demand charges, customer charges, etc.); whereas, the avoided rate is the rate
19 at which a customer with CHP saves by generating power on-site. Due to standby rates, a
20 CHP customer will rarely avoid the fully burdened retail rate when switching from
21 purchasing power to generating it on-site. Instead, because of rate mechanics like the
22 minimum charge in Rider E, CHP customers will only be able to avoid a percentage of
23 the retail rate. The smaller the avoided rate the greater the financial burden for self-

1 generating customers. According to the US EPA, an avoided rate of 90% or greater
2 implies that standby rates pose no financial barrier. The Energy Resources Center has
3 modeled the avoided rates created by Rider E and when the minimum charge applied, the
4 avoided rates were significantly below this threshold. This poses a financial barrier
5 towards the implementation of CHP in Ameren Missouri's territory.

6 So yes, I agree with Mr. Davis that low avoided electric rates can prevent CHP
7 development; however, Rider E plays a significant role in the creation of Ameren
8 Missouri's avoided electric rates.

9 **Q. Mr. Davis claims that Rider E is consistent with basic ratemaking principles.**
10 **Would you agree with his assessment?**

11 For Rider E customers that exceed the minimum charge I would agree. These customers
12 essentially take service through a primary service rate paying for utility services as they
13 would had they not had generation assets. I disagree, however, for customers that
14 routinely pay the minimum charge. For these customers, there seems to be no consistent
15 relationship between the use of utility services and the minimum charge. In fact, it is not
16 hard to create a realistic example of two standby customers that pay identical minimum
17 charges but that use the grid in completely different manners.

18 Conceptually, the minimum charge exists to recover costs that would otherwise go
19 uncollected from customers on the primary service rate – the infrastructure and energy
20 reserves necessary to serve a CHP customer when their generation goes offline. But how
21 accurately does the minimum charge reflect the costs to serve these customers? The
22 minimum charge does not account for the timing when a customer's generation unit goes
23 offline (i.e. peak vs. non-peak), nor does it take into account that multiple self-generators

1 reduce the needed cumulative generation reserves for Ameren Missouri. The minimum
2 charge is structured in a way that assumes that all customer generation will fail
3 simultaneously and at system peak even though this rarely, if ever, occurs. That type of
4 rate making is not consistent with rate raking principles nor is it consistent with Ameren
5 Missouri's other rates. To wit, the large primary service rate is not structured to assume
6 that every customer will reach peak simultaneously; this is witnessed by the fact that the
7 large primary service rate charges for capacity on an on-peak basis. However, there
8 exists no such delineation for capacity within the minimum charge in Rider E. The
9 capacity level set within the minimum charge is not based on any historic on-peak need
10 but rather based on the maximum capacity level regardless of when that need might arise.

11 **Q: Is the minimum charge in Rider E a barrier towards CHP development?**

12 **A:** Yes it is.

13 My primary concern with the minimum charge is that it is not tied to how a CHP
14 customer uses the grid. A customer that only goes offline during system constraint could
15 pay the same minimum charge as a customer that only goes offline during off-peak
16 periods even though these two customers create vastly different costs for the utility.
17 It is telling that the only examples of customers on Rider E are those that do not pay the
18 minimum charge.

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

20 **A.** Yes.