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MISSOURI PUBLIC SERVICE COMMISSION

UNION ELECTRIC COMPANY

d/b/a

AMEREN MISSOURI

CASE NO. ER-2014-0258

SURREBUTTAL TESTIMONY

OF

ALEX SCHROEDER

ON

BEHALF OF

MISSOURI DEPARTMENT OF ECONOMIC DEVELOPMENT

DIVISION OF ENERGY

Jefferson City, Missouri
February 6th, 2015

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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 Alex Schroeder. My business address is 301 West High Street, Suite 720, PO
4 Box 1766, Jefferson City, Missouri 65102.

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

6 A. I am employed by the Missouri Department of Economic Development - Division of
7 Energy (DE) as a Planner III - Senior 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. And on January 15th, 2015 I filed rebuttal
11 testimony regarding Ameren Missouri's residential Time-of-Day rate option.

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

13 A. The purpose of my surrebuttal testimony is to offer DE's response to a portion of Mr.
14 William Davis's rebuttal testimony, namely his response to DE's direct testimony on
15 CHP and Rider E. This can be found on pages 43-50 in Mr. Davis's rebuttal testimony.

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

17 **Q. What is your general impression of Mr. Davis's response?**

18 A. DE certainly does not disagree with everything Mr. Davis wrote in his rebuttal. However,
19 these points of agreement are mainly on more peripheral issues¹, rather than the key
20 problems DE voiced with Rider E in direct testimony. The focus here will be on points of
21 continued disagreement.

¹ E.g., factors besides Rider E that could impede the uptake of CHP in Ameren Missouri's service territory (p. 44-45), whether the state energy plan would be a good forum to address CHP (p. 49-50).

1 **Q. On page 44 of his rebuttal, Mr. Davis writes that “[t]he structure of Rider E results**
2 **in either no impact or minimal impact to a customer when the characteristics of the**
3 **load served by the Company are only nominally different than if the customer did**
4 **not self-supply. When a customer’s characteristics vary more significantly, Rider E**
5 **results will have a greater impact.” Is DE in agreement with this?**

6 A. No. Theoretically, even if the “characteristics of the load served by the Company” for a
7 CHP customer² and a firm service customer were exactly the same for years on end,
8 Rider E could have a significant negative impact on the CHP customer. This disparate
9 treatment stems from how the minimum charge is calculated from the “Miscellaneous
10 Charges” sheet³, to which one is directed from Rider E⁴. This minimum charge, to which
11 the cogenerator is possibly subjected every month⁵, is partly a function of a “per kW”
12 charge. As per Rider E, the “kW” here is equal to the maximum demand the cogenerator
13 would ever place on Ameren Missouri’s system.
14 Accordingly, the CHP customer is potentially subjected to a demand charge every month
15 that reflects that customer’s maximum demand. And Rider E gives no consideration
16 whatsoever to how infrequently that maximum demand may actually occur. In fact, even
17 if it never occurred, but was merely a theoretical possibility, the CHP customer would

² Henceforth used interchangeably with “cogenerator”

³ The Miscellaneous charges sheet is available here: Union Electric Company, “Miscellaneous Charges”. (<https://www.ameren.com/-/media/missouri-site/Files/Rates/UECSheet63MiscChgs.pdf>). Accessed December 17th, 2014.

⁴ Rider E is available here: Union Electric Company, “Rider E: Supplementary Service”. (<https://www.ameren.com/-/media/missouri-site/Files/Rates/UECSheet78RiderESupplementaryService.pdf>). Accessed December 3rd, 2014.

⁵ Namely, when said charge is higher than the minimum charge in either the Large Primary Service Rate, or the Small Primary Service Rate, whichever is applicable.

1 still be potentially subjected to a minimum charge that is calculated assuming this
2 maximum demand.

3 In contrast, for a regular primary service customer that does not self-supply, no such
4 alternative minimum charge applies. Primary service customers are still subject to a
5 minimum demand charge (100 kW in the Small Primary Service Rate⁶ and 5,000 kW in
6 the Large Primary Service Rate⁷), but assuming their actual demand is above this
7 amount, the demand charge is calculated on the basis of actual demand in any given
8 month. In other words, regular SPS and LPS customers are not potentially required to pay
9 for their maximum service requirements every month.

10 It is this key difference that can lead to vastly disparate treatment for a CHP customer
11 relative to a firm service customer.

12 **Q. On page 45-46 of his rebuttal, Mr. Davis writes that “Rider E does not preclude a**
13 **customer from requesting reconsideration of the contract demand or the Company**
14 **agreeing to a revised contract demand if it is determined that the customer’s service**
15 **characteristics have changed and the current contract demand will not recur.”**

16 **What is your response?**

17 **A.** This does not address DE’s concerns. Basically Mr. Davis is saying that if a
18 cogenerator’s maximum service requirements change, then the Company would be open
19 to adjusting contract demand to reflect that fact.

⁶ Henceforth “SPS”. Details are available here: Union Electric Company, “Service Classification No. 4(M): Small Primary Service Rate”. (<https://www.ameren.com/-/media/missouri-site/Files/Rates/UECSheet57Rate4MSPS.pdf>). Accessed December 15th, 2014.

⁷ Henceforth “LPS”. Details are available here: Union Electric Company, “Service Classification No. 11(M): Large Primary Service Rate”. (<https://www.ameren.com/-/media/missouri-site/Files/Rates/UECSheet61Rate11MLPS.pdf>). Accessed December 15th, 2014.

1 At issue is not whether a cogenerator's maximum service requirements can be revised
2 and reflected in contract demand, but whether it is appropriate to be using this maximum
3 service requirement figure when calculating Rider E's alternative minimum charge each
4 month. This minimum charge provision in Rider E is essentially requiring every entity
5 subject to it to keep its maximum service requirements "on reserve" every month. That
6 maximum may occur only rarely (e.g., when the CHP unit fails unexpectedly), and can
7 often be planned in advance (e.g., in the event a CHP unit must be shut down for routine
8 maintenance) around other outages and the usage patterns of Ameren Missouri's other
9 customers. But the formula for calculating the minimum charge does not take account of
10 this reality.

11 As I stated on page 21 of my direct testimony, "The minimum charge provided for in
12 Rider E could only be justified if it is demonstrated that it will be necessary to
13 simultaneously provide all CHP customer (subject to rider E) with their maximum service
14 requirements." This is possible, but is highly unlikely and becomes more so as more
15 customers adopt CHP and become subject to Rider E. Further, this minimum charge
16 applies *every month*, so the Company is prepared to meet simultaneous CHP outages on a
17 monthly basis. This situation is analogous to an insurance company not factoring risk into
18 its premium calculations.

19 Mr. Davis's argument that a customer's maximum service requirement (and thereby
20 contract demand) can be revised when it changes misses DE's key point.

21 **Q. Mr. Davis suggests on page 46 of his rebuttal that DE undermines its proposal to**
22 **eliminate Rider E by acknowledging the necessity of standby rates. Do you agree?**

1 A. No. Standby rates are of course necessary in the context of cogeneration. Cogenerators
2 may need to purchase electricity from a utility as a supplement to or substitute for onsite
3 generation, and standby rates are simply the rates charged for such service. By abolishing
4 Rider E and charging for supplementary service in accordance with the SPS or LPS rate
5 structure, the SPS and LPS rates would essentially function as standby rates.

6 **Q. On page 46-47, Mr. Davis writes that “Rider E has no financial impact on a
7 customer that self-supplies if the service supplied by the Company is ‘fundamentally
8 similar’ to the service they would require if they did not self-supply.” Do you agree?**

9 A. No, for the reasons outlined above.

10 **Q. On page 47, Mr. Davis writes that “[w]hile extreme examples can be created, Rider
11 E is designed to treat most customers that deploy CHP no differently than primary
12 service customers without CHP.” Do you agree?**

13 A. No. I would agree that there are scenarios where Rider E does not have a negative impact
14 on a cogenerator. For example, if said cogenerator purchases a certain amount of
15 electricity from the utility⁸, the resultant bill - calculated from either the SPS or LPS rate
16 - will be higher than the minimum charge provided for in Rider E. So there are certainly
17 situations where Rider E would not function as a barrier to CHP, namely when a
18 customer purchases so much electricity from Ameren Missouri that its minimum charge
19 becomes inapplicable.

20 But let’s take another example, and one that could hardly be considered “extreme”.

21 Assume that for a given month, a CHP customer subject to Rider E was able to meet all

⁸ The amount of electricity that must be purchased to render Rider E’s minimum charge inapplicable will vary depending on a cogenerator’s maximum service requirements.

1 energy needs with onsite generation. That customer would purchase nothing from
2 Ameren Missouri and therefore have to pay Rider E's minimum charge. The customer's
3 bill would consist in part of a "per kW" charge, where kW is its "maximum service
4 requirements under all conditions of use." In other words, when the customer generates
5 everything onsite, it still pays for its maximum demand. This treatment is vastly different
6 from that afforded to a regular SPS or LPS customer, which simply pays a demand
7 charge each month based on actual demand.⁹

8 One of the primary goals of CHP installation (i.e., to purchase less power from a utility)
9 is clearly undermined by Rider E. Its structure is such that the less power a cogenerator
10 purchases from Ameren Missouri, the more likely it is that Rider E becomes applicable
11 and levies its onerous minimum charge.

12 **Q. Mr. Davis writes on page 47 that "To the extent that the CHP customer's service**
13 **characteristics are similar to the primary service class for which the rates were**
14 **designed, using generally accepted ratemaking principles, those customers see no**
15 **impact from Rider E." Do you agree?**

16 **A.** No and yes. A CHP customer subject to Rider E and a regular LPS customer could
17 theoretically have the same usage patterns for months on end and receive significantly
18 different treatment. The treatment afforded to the cogenerator would not be equal to that
19 afforded to the firm service customer until the former purchased enough electricity to
20 render Rider E inapplicable. In this sense, I disagree with Mr. Davis.

⁹ Again, there is a floor below which the demand charge in the SPS and LPS cannot fall. But the "floor" in the demand charge component of Rider E's minimum charge is calculated assuming maximum demand.

1 However, I agree with Mr. Davis in one sense. If we read “[t]o the extent that the CHP
2 customer’s service characteristics are similar to the primary service class...” as “[t]o the
3 extent a CHP customer purchases more of its electricity from Ameren Missouri and
4 generates less onsite,” I believe Mr. Davis is correct. As stated above, Rider E is
5 structured to kick in when a cogenerator fails to purchase enough electricity from
6 Ameren Missouri. So to the extent a CHP customer satisfies its energy needs with
7 purchased electricity (like a regular primary service customer), Rider E is inapplicable
8 and said customer “sees no impact from Rider E.”

9 If this is what Mr. Davis means, I agree with him. But that interpretation would support
10 DE’s case that Rider E is problematic. Generating more onsite electricity (i.e., becoming
11 less like a regular primary service customer) is a primary reason for installing CHP. Mr.
12 Davis’s assertion that the more like a primary service customer a cogenerator is, the less
13 likely he or she would be affected by Rider E, is precisely the point. That is, Rider E is
14 structured to extract substantial revenues from cogenerators who require little or no
15 electricity from Ameren Missouri. And these revenues bear no relation to the frequency
16 or intensity of such cogenerators’ demand for the Company’s electricity. Rider E can
17 have a particularly ruinous impact on a cogenerator who generates everything onsite and
18 only requires supplementary service on rare occasions (e.g., during planned shutdowns
19 for routine maintenance).

20 **Q. Mr. Davis asserts on page 48 that the Commission ruled that Rider E was consistent**
21 **with the Public Utility Regulatory Policies Act (PURPA) in 1996. What is your**
22 **response?**

1 A. DE maintains that Rider E is inconsistent with certain parts of Missouri's PURPA
2 regulations. In Data Request DED-DE 023, DE asked

3 On page 48 of his rebuttal testimony, Mr. William Davis writes
4 that "the Commission ruled that Rider E was lawful under PURPA
5 and its own rules in the face of a formal complaint in 1996." Please
6 list the case(s) Mr. Davis is referring to here. In addition, for each
7 case listed please provide a specific citation of where the
8 Commission addressed Rider E's consistency with 4 CSR 240-
9 20.060(5)(A) and 4 CSR 240-20.060(5)(C). Note that these were
10 the two components of Missouri's PURPA regulations that I
11 contend are being violated by Rider E. (See my direct testimony.)

12 Mr. Davis cited EC-96-164¹⁰ as the case in which the Commission maintained Rider E's
13 consistency with PURPA. But there are two problems with citing this case as proof that
14 Rider E is consistent with PURPA.

15 First, the Commission ruled that "Trigen [the company that filed the complaint] has not
16 met its burden to prove that UE's [Ameren Missouri's] rates are in violation of PURPA,
17 FERC regulations, or Missouri regulations."¹¹ Note that this ruling does not state Rider E
18 is consistent with PURPA, only that Trigen was not successful in proving inconsistency.
19 The Commission stated at the end of the Findings of Facts that "[it] does not intend by
20 this decision to preclude Staff, UE [Ameren Missouri], and other interested parties from
21 pursuing this matter in an appropriate rate design docket." DE is doing precisely that, and
22 though we bring up some of the same arguments that Trigen did in 1996, our positions
23 are by no means identical. For example, one of the key arguments of Trigen in 1996 was
24 that PURPA required Rider E to distinguish between supplementary, maintenance, and

¹⁰ Missouri Public Service Commission. Case No. EC-96-164. Report and Order issued August 20, 1997. (<http://psc.mo.gov/CMSInternetData/ON/Orders/older/08206164.htm>). Accessed February 6th, 2015.

¹¹ In contrast, because the present case is a rate case, it is the Company that must demonstrate its rates are just and reasonable.

1 backup service. DE has not taken the position in this case that PURPA requires making
2 such a distinction, only that doing so is reasonable.

3 Second, the crux of DE's stance with respect to Rider E and PURPA is that the minimum
4 charge in Rider E violates 4 CSR 240-20.060(5)(C), which states that

5 [t]he rate for sales of back-up power or maintenance power - 1)
6 Shall not be based upon an assumption (unless supported by
7 factual data) that forced outages or other reductions in electric
8 output by all qualifying facilities on an electric utility's system will
9 occur simultaneously or during the system peak or both; and 2)
10 Shall take into account the extent to which scheduled outages of
11 the qualifying facilities can be usefully coordinated with scheduled
12 outages of the utility's facilities.

13 But a reading of the rebuttal testimony of Mr. Scott A. Spiewak (Trigen's witness)
14 reveals that, contra DE's stance, his complaint did not center on how the minimum
15 charge is inconsistent with this particular part of PURPA. So our two positions are
16 distinct, and the 1996 ruling should not be read as settling DE's questions about Rider E's
17 consistency with PURPA.

18 **Q. Mr. Davis asserts on page 49 of his rebuttal that "[i]t is noteworthy that no**
19 **customers have been assessed the Rider E minimum charge in at least the past three**
20 **years..." What is your response?**

21 **A.** I have no reason to doubt the truth to this statement. But this is not necessarily a
22 testament to Rider E's economic soundness. For cogenerators - either potential or actual -
23 that purchase enough electricity to render the minimum charge inapplicable, the structure
24 of Rider E is irrelevant. Rather, the minimum charge is going to affect cogenerators that
25 will be subject to it (i.e., those who would purchase relatively little electricity), and many
26 of these will be discouraged from entering Ameren Missouri's service territory.

1 In other words, the fact that no current Rider E customers have paid the minimum charge
2 recently says nothing about said charge's soundness, because the entities to which it
3 would apply are strongly disincentivized from adopting CHP in the first place.

4 **Q. Mr. Davis writes that there is no harm in waiting until the next rate case to resolve**
5 **this issue. Is that true?**

6 A. This would only be true if one accepts Mr. Davis's argument that Rider E is reasonable.
7 But all of my testimony and all of the testimony of DE witness Graeme Miller
8 conclusively demonstrate that Mr. Davis's argument is incorrect. Consequently, I believe
9 there would in fact be harm in pushing this issue to the next rate case.

10 **Q. Does Mr. Davis's rebuttal alter DE's prior recommendation that Rider E - as it**
11 **currently stands - be eliminated?**

12 A. No. DE still supports the elimination of Rider E until and unless an economically sound
13 alternative is developed. To the extent it remains in place, it should be significantly
14 revised.

15 The problems inherent in Rider E, which have been discussed above and in my direct
16 testimony, can be boiled down to one essential: supplemental power, maintenance power,
17 and backup power are not treated as distinct types of standby service.¹² In order to clarify
18 why this is a problem, I will briefly discuss each and bring their differences into relief. I
19 would urge readers to contemplate the conceptual distinction between these three types of
20 standby service, and whether it is reasonable to treat them as essentially similar. Let's
21 first turn to supplemental power and maintenance power.

¹² See Part A of Rider E.

1 Supplemental power can be conceptualized as that which a cogenerator regularly
2 purchases in order to supplement onsite generation. This portion of a cogenerator's
3 electricity purchases is no different from the purchases of primary service customers that
4 do not self-generate. According to the Regulatory Assistance Project (RAP),

5 [s]upplemental power is electric capacity and energy supplied by
6 an electric utility that is regularly used by a self-generating
7 customer in addition to capacity and energy from on-site
8 generation. Because this service usually is available "around the
9 clock" and on a "firm" basis", supplemental power is the same as
10 full requirements service for non-generating customers.
11 Supplemental power is typically charged at the otherwise
12 applicable full-requirements tariff rates.¹³

13 The charges for supplemental power should therefore be completely severed from the
14 minimum charge provision in Rider E and the Company should simply provide
15 supplemental power in accordance with the SPS or LPS rates.

16 Maintenance power is that which a cogenerator must purchase from the utility when the
17 CHP unit must be shut down for *planned* maintenance. (If the unit must be immediately
18 shut down for unplanned, emergency maintenance, the power purchased would qualify as
19 backup power, which is discussed below.) Maintenance power is different from
20 supplementary power in that it is purchased intermittently. However, maintenance could
21 be scheduled for the times of year - and during off-peak hours - when the utility has
22 sufficient generating resources available to sell additional power.¹⁴

¹³ Regulatory Assistance Project, "Standby Rates for Combined Heat and Power Systems: Economic Analysis and Recommendations for Five States", February 2014. Report authored by James Selecky, Kathryn Iverson, and Ali Al-Jabir (Foreword authored by Richard Sedano). (www.raponline.org/document/download/id/7020). (Quotation taken from page 10).

¹⁴ Regulatory Assistance Project, "Standby Rates for Combined Heat and Power Systems: Economic Analysis and Recommendations for Five States", February 2014. Report authored by

1 Maintenance power should be provided in accordance with the SPS or LPS rate, though
2 some additional provision would need to stipulate that maintenance is to be scheduled
3 around peak hours to the extent possible.

4 Again, according to RAP,

5 [p]roperly scheduled maintenance power service rates should
6 reflect both the lower cost and the off-peak nature of this service. It
7 is a lower cost service than firm backup power because utilities
8 generally require maintenance service to be scheduled in advance,
9 and service may be refused if adequate resources are not available
10 to accommodate a planned outage. This lower quality of service
11 should be reflected in the form of a price discount for maintenance
12 power relative to backup power service.¹⁵

13 At present, DE is not advocating for such a “price discount” for maintenance power. But
14 we do believe it prudent to sever maintenance power from the minimum charge
15 component of Rider E. There is no logical basis for including in the contract demand
16 (which is then used to calculate the minimum charge) marginal demand resulting from
17 maintenance. This is because such power can simply be provided - at either SPS or LPS
18 rates - to cogenerators when the Company has excess capacity. Of course, to the extent
19 maintenance cannot be scheduled for periods when excess capacity is available, it would
20 qualify as backup power.

21 **Q. What is backup power?**

22 A. Backup power is that which must be provided to cogenerators when their CHP units fail
23 or must be shut down unexpectedly. The utility must be ready to serve these unexpected

James Selecky, Kathryn Iverson, and Ali Al-Jabir (Foreword authored by Richard Sedano).
(www.raponline.org/document/download/id/7020).

¹⁵ Ibid. (Quotation from page 12).

1 needs of cogenerators, which cannot be planned or predicted in advance. This is the only
2 type of power that should be governed by a minimum charge.

3 The amount of backup power a cogenerator will need in the event of a CHP failure (i.e.,
4 contract demand) will either be the capacity of the CHP unit (if it is operated at capacity)
5 or whatever fraction thereof is relied upon for onsite generation. Alternatively, if a
6 cogenerator agrees to only requiring a set amount of backup power in the event of CHP
7 shutdown, that amount shall be considered contract demand. The current provisions of
8 Rider E allow for this, so no revision is needed in this respect.

9 However, Ameren's minimum charge in Rider E presently makes no adjustment for the
10 risk of a CHP shutdown. Therefore, every cogenerator is potentially subject to a
11 minimum charge in which they pay a "per kW" charge calculated assuming their
12 maximum service requirements. And each is potentially subjected to this charge every
13 single month. As currently structured, the charge is analogous to a 100 percent insurance
14 premium. That is, the Company stands ready to simultaneously provide maximum service
15 requirements to all cogenerators at the same time *every single month*.

16 In order to account for the variability in risk of CHP shutdown, each cogenerator's
17 contract demand should be multiplied by the "forced outage rate," which is a measure of
18 the unit's reliability. The FOR is "defined as the number of hours that the unit is forced
19 out of service for emergency reasons, divided by the total number of hours that the
20 generating unit is available for service during that time interval plus the number of hours
21 that the generating unit experiences a forced outage."¹⁶

¹⁶ Ibid. (Quotation from page 10).

1 This method represents a more rational means by which the utility can calculate the
2 amount of capacity it needs to set aside - via Rider E's minimum charge - to serve
3 cogenerators' backup power needs. Like insurance, those with more reliable systems will
4 potentially be subject to a lower minimum charge and those with less reliable systems
5 will potentially be subject to a higher minimum charge.¹⁷

6 DE also believes the minimum charge formula on the Miscellaneous Charges sheet can
7 be eliminated. The "per kW" charge that should be used when calculating the alternative
8 minimum charge should simply be the demand charge in the applicable rate. Part B of the
9 Miscellaneous Charges sheet, which pertains to the Supplementary Service alternative
10 minimum charge, is entirely superfluous and adds a layer of unnecessary complexity to
11 Ameren Missouri's standby service rates.

12 **Q. Please summarize your prescriptive response to Mr. Davis's rebuttal testimony.**

13 **A.** First, sever supplemental service from Rider E's minimum charge and treat it in the same
14 manner as firm primary service. Second, insert a provision (on either the SPS or LPS
15 tariff sheet or in a revised Rider E, if it remains in place) specifying that maintenance is
16 to be scheduled around Ameren Missouri's peak periods. Charge for maintenance power
17 in accordance with the SPS or LPS rate, whichever is applicable. Third, maintain the
18 minimum charge¹⁸ for backup power, but factor in risk by multiplying contract demand
19 by the FOR. This minimum charge for backup power would be paid every month, unless

¹⁷ It is important to also point out here that the minimum charge - as presently calculated - takes no account of the fact that some backup power would likely be provided during non-peak hours. DE's proposal here does not include a peak/non-peak adjustment for the minimum charge, but that should not be interpreted as an approval of said adjustment's omission.

¹⁸ Again, the revised minimum charge provisions could either be inserted in the SPS or LPS tariff sheet, or in a revised Rider E.

1 the charge for backup power actually used exceeded this minimum (in which case the
2 latter would apply).

3 **Q. Does this conclude your surrebuttal testimony in this case?**

4 **A. Yes.**