

Exhibit No.:
Issue(s):
Witness: Richard A. Voytas
Type of Exhibit: Rebuttal Testimony to
Non-Utility Stipulation
Sponsoring Party: Union Electric Company
File No.: EO-2015-0055
Date Testimony Prepared: July 15, 2015

MISSOURI PUBLIC SERVICE COMMISSION

FILE NO. EO-2015-0055

REBUTTAL TESTIMONY TO NON-UTILITY STIPULATION

OF

RICHARD A. VOYTAS

ON

BEHALF OF

**UNION ELECTRIC COMPANY
d/b/a Ameren Missouri**

**St. Louis, Missouri
July 2015**

TABLE OF CONTENTS

I.	INTRODUCTION	1
II.	PROPOSED PERFORMANCE INCENTIVE MECHANISM	2
III.	NET SHARED BENEFITS PERFORMANCE INCENTIVE	4
IV.	ENERGY EFFICIENCY IS ENERGY SAVINGS. DEMAND RESPONSE IS DEMAND SAVINGS.....	6
V.	ENVIRONMENTAL IMPLICATIONS WITH THE USE OF A FINANCIAL PERFORMANCE INCENTIVE BASED ON SYSTEM PEAK DEMAND REDUCTIONS	11
VI.	CONCLUSIONS.....	12

REBUTTAL TESTIMONY
TO NON-UTILITY STIPULATION
OF
RICHARD A. VOYTAS
FILE NO. EO-2015-0055

I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Richard A. Voytas. My business address is One Ameren Plaza, 1901 Chouteau Avenue, St. Louis, Missouri 63103.

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

A. I am employed by Ameren Services Company (“Ameren Services” or “Company”) as Director of Energy Efficiency/Demand Response. Ameren Services provides various technical and corporate support services for Ameren Missouri and its sister companies in a number of functions, including the area of energy efficiency and demand response.

Q. Are you the same Richard A. Voytas who filed Surrebuttal Testimony previously in this case?

A. Yes, I am.

Q. What is the purpose of your rebuttal to non-utility stipulation testimony in this proceeding?

A. The purpose of my testimony is to address provisions in the Non-Unanimous Stipulation and Agreement regarding the Company’s Missouri Energy Efficiency Investment Act (“MEEIA”) Cycle 2 (“Non-Utility Stipulation”)¹ that would

¹ Now “Non-Utility Joint Position.”

1 result in customers receiving far less net benefits from investments in energy efficiency
2 than they would otherwise have under the Non-Unanimous Stipulation and Agreement
3 proposed by the Company, the Missouri Department of Economic Development -
4 Division of Energy, Natural Resources Defense Council, United for Missouri, Kansas
5 City Power and Light and KCP&L Greater Missouri Operations Company (“June 30
6 Stipulation”)². In fact, the design of the Non-Utility Stipulation actually encourages the
7 Company to be indifferent to net benefits that may accrue to customers in the
8 implementation of its MEEIA 2016-2018 portfolio of programs. For this reason alone, I
9 recommend the Commission reject the Non-Utility Stipulation.

10 **II. PROPOSED PERFORMANCE INCENTIVE MECHANISM**

11 **Q. Specifically what is the provision in the Non-Utility Stipulation that**
12 **encourages the Company to be indifferent towards any net benefits that may accrue**
13 **to customers from Ameren Missouri energy efficiency programs?**

14 A. The provision is the drastic change proposed for the Company financial
15 performance incentive metric whereby performance of energy efficiency programs is to
16 be based on demand savings at the time of system peak rather than on a combination of
17 energy savings and associated net benefits, as was established in Ameren Missouri’s
18 MEEIA 2013-2015. This is also called out in the MEEIA rules in **4 CSR 240-20.093**
19 **(1)(Q)**: DSIM utility incentive revenue requirement means the revenue requirement
20 approved by the commission to provide the utility with a portion of annual net shared
21 benefits based on the approved utility incentive component of a DSIM.

² Now “June 30 Joint Position.”

1 **Q. Why does this change encourage Ameren Missouri to be indifferent**
2 **towards net benefits?**

3 A. If cost-effective energy efficiency is the goal, then this performance
4 incentive does not align with that goal. The Non-Utility Stipulation would incent
5 Ameren Missouri to achieve demand savings from energy efficiency programs without
6 regard to the net benefits associated with such savings. It states that if the Company
7 achieves 121,100 kilowatt (“kW”) coincident peak demand savings, the Company will
8 receive a performance incentive of \$37/kW for every kW saved – and that is regardless of
9 cost or benefit to customers. Therefore, in order to align its MEEIA 2016-2018 business
10 implementation model with the financial performance incentive under the Non-Utility
11 Stipulation, the Company would have to be laser focused on energy efficiency measures
12 with the highest kW savings during peak usage periods. It would make no difference if
13 the measure is either marginally cost-effective or significantly cost-effective as long as it
14 has a meaningful peak demand reduction component. The design of this performance
15 incentive mechanism specifically incents the Company to produce peak demand
16 reductions at the time of the system peak rather than to achieve cost-effective energy
17 efficiency savings

18 **Q. What does basing a performance incentive on peak demand**
19 **reductions for energy efficiency programs mean in terms of the objectives for which**
20 **the Company designed the MEEIA 2016-2018 portfolio of energy efficiency**
21 **programs?**

22 A. It would change the objective of Ameren Missouri’s proposed portfolio
23 from maximization of the net benefits of energy efficiency to the maximization of the

1 portfolio of peak demand reductions at the time of the system peak. Consequently, the
2 entire makeup of the portfolio would change.

3 **Q. Please provide an example of a significant portfolio design change**
4 **brought about by making the primary objective maximization of peak demand**
5 **reductions.**

6 A. The Residential Lighting Program would be minimized, if not eliminated,
7 from the portfolio. Since residential lighting is used primarily in the evening hours after
8 the Company system peak demand has occurred, lighting has a de minimis peak demand
9 reduction component. If Ameren Missouri is financially incented to perform to achieve
10 peak demand reductions at the time of the system peak, it would be irresponsible to
11 continue to pursue residential lighting programs. The same would be true for all of the
12 Company's current residential programs with the exception of the residential heating,
13 ventilation and air conditioning ("HVAC") program.

14 **III. NET SHARED BENEFITS PERFORMANCE INCENTIVE**

15 **Q. Please compare and contrast the performance incentive model for the**
16 **Company's MEEIA 2013-2015 programs as compared to the proposal in the**
17 **Non-Utility Stipulation.**

18 A. MEEIA 2013-2015 uses a net shared benefits business model to address
19 the financial performance incentive opportunity for the Company. The net shared
20 benefits business model is a win/win model for both customers and the Company as it
21 encourages the Company to maximize energy efficiency savings while minimizing costs
22 in an attempt to maximize net benefits from energy efficiency programs. Those net
23 benefits are then shared between customers and the Company, with customers receiving

1 the majority of the net benefits. Under the net shared benefits model in order for the
2 Company to be eligible to earn the opportunity for a financial performance incentive, it
3 must meet two criteria. First, it must achieve a threshold level of energy reductions from
4 its energy efficiency programs. Second, it must generate sufficient net benefits from the
5 programs to be able to receive a portion of the benefit pool in the form of a financial
6 performance incentive.

7 In stark contrast, the Non-Utility Stipulation performance incentive provision
8 breaks the win/win proposition for customers. The Non-Utility Stipulation incents the
9 Company to achieve kW reduction at the time of the system peak from energy efficiency
10 programs without regard to the magnitude of net benefits accrued to customers.

11 **Q. The Non-Utility Stipulation also calls for a second performance**
12 **incentive component based on customer participation; is that true?**

13 A. It calls for the performance incentive to have two components: the
14 demand reduction component and a customer participation component. But the
15 designation of the second component as a customer participation component is a
16 misnomer. The Non-Utility Stipulation provides that if the Company spends the full
17 budget of \$10,750,000 on the Multi-Family Low Income (“MFLI”) program, it is eligible
18 to receive 5%, or \$537,500, as a financial performance incentive. A more accurate
19 description of this component of the proposed financial performance incentive would be
20 based on spending 100% of the budget as opposed to being based on customer
21 participation. The most glaring omission here, again, is that both of these mechanisms
22 are devoid of any consideration of the magnitude of net benefits to customers from this
23 program.

1 **Q. The Non-Utility Stipulation also offers an optional performance**
2 **incentive provision that is energy-related. Please discuss.**

3 A. This optional component of the proposed financial performance incentive
4 is unclear and confusing. It appears the concept is that some type of mediator will
5 determine if additional incremental energy savings are to be added to the MEEIA
6 portfolio for 2017 and 2018 only. If the mediator adds additional megawatt-hours
7 (“MWh”) and additional budget to the MEEIA portfolio in 2017 and 2018, and assuming
8 the Commission approves it, then I believe the Non-Utility Stipulation allows for the
9 Company to achieve a possible additional financial performance incentive if it achieves
10 more incremental MWh savings than that identified by the mediator.

11 Without knowing the make-up of the potential incremental MWh and
12 associated budget, it is not possible to examine this proposal in more detail. Glaringly
13 obvious, however, are the conflicting objectives to base financial performance incentives
14 on system peak demand reductions for one part of the MEEIA energy efficiency portfolio
15 and on energy efficiency reductions for the other.

16 **IV. ENERGY EFFICIENCY IS ENERGY SAVINGS.**
17 **DEMAND RESPONSE IS DEMAND SAVINGS**

18 **Q. Discuss how disjointed it would be to design energy efficiency**
19 **programs to achieve demand reductions rather than energy efficiency reductions.**

20 A. Energy efficiency, as the name implies and as it is defined in MEEIA, is
21 about energy with ancillary demand reduction benefits. When the Company conducts a
22 Demand Side Management (“DSM”) Potential study, there are at least two distinct and
23 separate studies – energy efficiency potential and demand response potential. Because
24 energy efficiency measures can reduce energy consumption over all 8,760 hours in a

1 year, there may be a handful of hours at the time of system peak when demand is also
2 reduced. However, with energy efficiency, there is no calculated attempt to reduce
3 demand at the time of system peak. It just happens due to the nature of the potential to
4 reduce load over an 8,760 hour time period or some fraction thereof. It may not happen
5 at all in the case of some lighting applications, programmable thermostat applications,
6 some HVAC technology applications, etc., that have little, if any, demand reductions at
7 the time of the system peak. It could be that some energy efficiency measures that
8 attempt to minimize electricity consumption when customers are not home but re-gain a
9 portion of that energy and then, when some customers are home, actually increase system
10 peak demands, even though they save energy.

11 **Q. Do Evaluation, Measurement and Verification (“EM&V”) contractors**
12 **even attempt to measure system peak demand reductions from energy efficiency**
13 **measures?**

14 A. No. EM&V contractors focus on measuring energy savings from energy
15 efficiency programs. Estimating demand reductions is a mathematical exercise applied to
16 energy savings in most EM&V work. For example, the average demand reduction may
17 be estimated dividing energy saved in a year by hours of operation in a year. Peak
18 demands may be estimated by applying an estimated coincidence factor to energy savings
19 for a given program. Coincidence factor is usually defined as the fraction of peak
20 demand of a population that is on at the time of system peak. Finally, if the Demand Side
21 Management Option Risk Evaluator (“DSMore”) cost effectiveness model is used to
22 estimate system peak demand savings for a specific energy efficiency measure, there are
23 a set of embedded individual energy efficiency measure hourly loadshapes from

1 secondary and tertiary sources derived in the early 1990s that the model uses to estimate
2 demand reductions at the time of system peak. In addition, the DSMore model predicts a
3 future system coincident peak day and time and does not use the actual historical system
4 coincident peak date and time.

5 **Q. Are all individual energy efficiency measure-related demand**
6 **reductions sustainable for the full, effective useful lives of measures?**

7 A. No. It depends upon federal and/or state building code and appliance
8 efficiency standards changes for the baseline against which incremental kWh and kW
9 savings are estimated. For example, the Energy Independence and Security Act sets the
10 energy consumption baseline for most residential lighting technology in 2020 equivalent
11 to that of compact fluorescent lighting (“CFL”). Therefore, while CFLs may have a
12 small kW incremental savings component in MEEIA 2013-2015, beginning in 2020,
13 those same CFLs installed in MEEIA 2013-2015 will have no incremental kW savings
14 when the new baseline takes effect. This example illustrates again why the residential
15 lighting program has value primarily based on the incremental energy savings it produces
16 rather than any ancillary, and perhaps temporary, incremental system peak demand
17 savings.

18 **Q. It appears that the Non-Utility Stipulation proposes a financial**
19 **performance incentive metric that if the Company achieved 121,000 kW demand**
20 **savings at the system peak hour, then the Company could earn \$37/kW, or**
21 **\$4,477,000, financial performance incentive. Would that be prudent or in the best**
22 **interest of customers?**

1 A. No. The Company would earn this performance incentive regardless of
2 the magnitude of benefits to customers.

3 Energy efficiency programs are designed and managed to reduce energy
4 consumption and not system peak demand reduction. Similarly, energy efficiency
5 programs are evaluated to measure the magnitude of energy savings and are specifically
6 not evaluated to measure demand reductions at the time of the system peak. The focus of
7 energy efficiency programs should be to provide means for customers to reduce usage
8 irrespective of when that usage occurs. That focus, not the demand reduction proposed in
9 the Non-Utility Stipulation, provides the greatest benefits to customers.

10 **Q. What is a demand response program?**

11 A. Unlike energy efficiency, demand response is about reducing demand for
12 a handful of hours each year, usually at system peak periods, rather than during any of the
13 8,760 hours that occur during a year. Demand response serves primarily a generation
14 reliability function rather than an energy savings function. Demand response is a distinct
15 and separate product from energy efficiency.

16 **Q. Can demand response load reductions be measured with statistical**
17 **accuracy and precision?**

18 A. Yes. Fifteen-minute interval meters recording the fifteen minute loads for
19 homes and businesses that participate in demand response programs and the load
20 reductions attributable to customer responses to demand response events can be
21 measured.

22 **Q. Would it be appropriate for the Company to have a demand response**
23 **financial performance incentive component in addition to an energy efficiency**

1 **component if cost-effective demand response programs were part of the MEEIA**
2 **2016-2018 portfolio?**

3 A. Yes. However, demand response programs are not cost-effective for the
4 Company for MEEIA 2016-2018. The Company has sufficient capacity such that there
5 are no known generation reliability issues for MEEIA 2016-2018.

6 **Q. For the reasons discussed in the prior responses, it appears that a**
7 **system peak demand metric has little, if any, relevance to the MEEIA 2016-2018**
8 **filing. Please comment.**

9 A. That is correct. If the Commission places highest priority on system peak
10 demand reductions rather than reductions in energy usage, the Company should re-design
11 the MEEIA 2016-2018 portfolio to be heavy on demand response programs and
12 de-emphasize energy efficiency programs – at least those that do not meaningfully
13 contribute to reduce demand at the time of the system peak.

14 **Q. How could the Company re-design the MEEIA 2016-2018 portfolio to**
15 **be heavy on demand response if demand response is not cost-effective?**

16 A. The Company would have to work with stakeholders to propose to the
17 Commission higher-avoided capacity costs and longer effective useful lives for demand
18 response programs to artificially make them appear cost-effective. I do not recommend
19 such an approach for many reasons including that it would not be in the best interest of
20 customers.

1 **V. ENVIRONMENTAL IMPLICATIONS WITH THE USE**
2 **OF A FINANCIAL PERFORMANCE INCENTIVE**
3 **BASED ON SYSTEM PEAK DEMAND REDUCTIONS**

4 **Q. What are potential environmental issues if the Commission ordered**
5 **the Company to implement an energy efficiency portfolio for which financial**
6 **performance is based on the magnitude of system peak demand reduction rather**
7 **than reductions in energy usage?**

8 A. Notwithstanding the knowledge that it is virtually impossible to design an
9 energy efficiency portfolio to maximize system peak demand reductions, doing so would
10 force the Company to focus on energy efficiency measures that have the highest system
11 peak demand reduction potential and either de-emphasize or even remove energy
12 efficiency measures that have little, if any, system peak demand reduction component.
13 Since the emphasis would be on the maximization of system peak demand reduction, the
14 energy usage reduction from the portfolio would drop meaningfully from the levels
15 proposed in the Company’s MEEIA 2016-2018 implementation plan. It follows that if
16 the portfolio achieves lower annual energy related load reductions, it will also achieve
17 lower greenhouse gas emission reductions.

18 **Q. Since the Non-Utility Stipulation proposes to base the financial**
19 **performance incentive on system peak demand reductions that would necessarily**
20 **result in lower greenhouse gas emissions than if the Company was incented to**
21 **pursue energy efficiency savings as its primary metric, would that hinder the state**
22 **of Missouri’s ability to comply with the Environmental Protection Agency’s**
23 **proposed Clean Power Plan (“CPP”)?**

24 A. Yes.

1 **Q. If the Company focused on developing a portfolio of energy efficiency**
2 **programs with the primary objective of system peak demand reduction, would the**
3 **resulting reduction in greenhouse gas emissions be as great as if the primary**
4 **objective was to maximize net benefits to customers?**

5 A. No. The magnitude of greenhouse gas emissions is a function of the type
6 of fossil-fueled generation supply that is displaced by energy efficiency. For example,
7 natural gas fired generation has slightly less than 50% of the greenhouse gas emissions as
8 coal-fired generation. For the Ameren Missouri system, coal-fired generation is usually
9 the generation source used to produce the last kilowatt-hour (“kWh”) during the off-peak
10 hours. However, during times of system peaks or system/regional stresses, natural gas is
11 usually the generation source used to produce the last kWh during the on-peak hours.
12 Therefore, if the Company was ordered to assess the performance of its MEEIA energy
13 efficiency programs on the basis of reduction of system peak demand, it would focus on
14 the energy efficiency opportunities that had the largest peak demand reduction potential
15 at the time of system peaks – which is when natural gas generation is usually displaced.

16 **VI. CONCLUSIONS**

17 **Q. What are the implications of the proposed Non-Utility Stipulation’s**
18 **financial performance incentive methodology to measure success on the basis of**
19 **incremental system peak load reductions?**

20 A. It would be worse for customers financially. Environmental benefits of
21 the MEEIA 2016-2018 plan would be diminished. The proposed financial performance
22 incentive of assessing the MEEIA 2016-2018 energy efficiency portfolio primarily on the
23 basis of system peak demand reduction would result in higher costs and lower benefits to

1 customers. It would result in higher rather than lower greenhouse gas emissions from the
2 MEEIA 2016-2018 portfolio of programs. It would necessitate the re-design of the
3 MEEIA 2016-2018 portfolio to seek the primary objective of pursuing system peak
4 demand reductions from an energy efficiency portfolio. It would necessitate the design
5 of a MEEIA 2016-2018 demand response portfolio to accompany the MEEIA energy
6 efficiency portfolio. However, to make a MEEIA 2016-2018 demand response portfolio
7 cost-effective would require artificially increasing the Company's avoided capacity costs
8 and making other artificial adjustments to program cost-effectiveness parameters such as
9 effective useful life assumptions. Simply put, the Non-Utility Stipulation asking for the
10 performance of the MEEIA 2016-2018 energy efficiency portfolio to be judged primarily
11 on the basis of system peak demand reduction is ill-conceived, unworkable, and
12 unmanageable.

13 **Q. What are the implications of the Non-Utility Stipulation's proposed**
14 **financial performance incentive methodology to measure success on the basis of**
15 **customer participation in the proposed MFLI programs?**

16 A. It would be worse for customers financially. The Stipulation and
17 Agreement explicitly requires the Company to spend the \$10,750,000 MFLI budget in its
18 entirety. If the Company spends 100% of the budget, the Company shall earn an
19 additional 5%, or \$537,500, in financial performance incentives. The financial
20 performance incentive does not require an explicit count of customers participating in the
21 program. The implications are that the Company is incented to spend 100% of the MFLI
22 budget and there are no requirements to achieve a specified level of net benefits.

1 **Q. What are the implications of the Non-Utility Stipulation's proposed**
2 **financial performance incentive methodology to measure success on the basis of**
3 **incremental energy savings achieved over and above those specified in the**
4 **stipulation for program years 2017 and 2018?**

5 A. It is not possible to comment on implications to customers and the
6 environment without knowing the type of programs to be added to the portfolio, the
7 incremental budget associated with the programs, and the associated cost-effectiveness of
8 such programs. However, what is apparent are the confusing and conflicting signals to
9 the Company to manage the lion's share of its portfolio (459,400 MWh) to maximize
10 system peak reductions and then to manage any incremental additions to that portfolio on
11 the basis of incremental energy savings achieved without any regard to system peak
12 demand reductions. The situation would likely result in mass confusion on the part of the
13 implementation team, the evaluation team, trade allies and, most importantly, customers.

14 **Q. Does the Non-Utility Stipulation's proposal represent a step forward**
15 **or a step backward for energy efficiency for Ameren Missouri customers and the**
16 **environment?**

17 A. There should be no question that the proposed financial performance
18 incentive represents a significant step backward for customers, the Company, and the
19 environment. The shared net benefits model is specifically designed to be a win/win for
20 both customers and the Company. Under this business model, the Company is incented
21 to maximize energy efficiency benefits to customers at the lowest possible cost. Under
22 the Non-Utility Stipulation's approach, the Company is not incented to either maximize
23 energy efficiency benefits or to achieve energy efficiency savings at the lowest possible

1 costs. Rather, the Company is incented to make its energy efficiency portfolio do
2 something for which it was not designed. That is, achieve demand reductions at the time
3 of system peak without regard to benefits to customers. For the MFLI program, the
4 Company is incented to spend 100% of the pre-determined budget without regard to the
5 benefits to customers. Rather than pursue the goal of achieving all cost-effective energy
6 efficiency, the proposed approach incents the Company to achieve only energy efficiency
7 that has the largest impact on system peak load reductions and/or to spend
8 pre-determined budgets in their entirety.

9 **Q. Do you have any other observations on the Non-Utility Stipulation's**
10 **financial performance incentive methodology?**

11 A. Even though the proposed methodology is fundamentally flawed and
12 unworkable, a minor point that should also be noted is that Appendix A has numerous
13 errors and incorrect derivations from DSMore model runs. For example, in Appendix A,
14 units expressed in terms of gigawatts should be megawatts. Some demand reductions are
15 expressed at the Midcontinent Independent System Operator's ("MISO") transmission
16 level rather than at the customer meter level. There are a plethora of DSMore structural
17 modeling issues that would also have to be added or revised in the DSMore model itself
18 to even begin to estimate coincident system peak demand savings for energy efficiency
19 measures, if financial performance is to be based on that metric. Even if all of the major
20 obstacles I have described to the proposed financial performance incentive in the Non-
21 Utility Stipulation could be overcome, these errors would still have to be corrected for the
22 underlying analysis to be useful or meaningful in any way.

- 1 **Q. Does this conclude your rebuttal to Non-Utility Stipulation testimony?**
- 2 A. Yes, it does.

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Union Electric Company d/b/a)
Ameren Missouri's 2nd Filing to Implement) File No. EO-2015-0055
Regulatory Changes in Furtherance of Energy)
Efficiency as Allowed by MEEIA.)

AFFIDAVIT OF RICHARD A. VOYTAS

STATE OF MISSOURI)
) ss
CITY OF ST. LOUIS)

Richard A. Voytas, being first duly sworn on his oath, states:

1. My name is Richard A. Voytas. I work in the City of St. Louis, Missouri, and I am employed by Ameren Services Company as Director of Energy Efficiency/Demand Response.

2. Attached hereto and made a part hereof for all purposes is my Rebuttal Testimony to Non-Utility Stipulation on behalf of Union Electric Company d/b/a Ameren Missouri consisting of 16 pages and Schedule(s) N/A, all of which have been prepared in written form for introduction into evidence in the above-referenced docket.

3. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct.

Richard A. Voytas (signature)
Richard A. Voytas

Subscribed and sworn to before me this 15th day of July, 2015.

Beckie J. Eaves (signature)
Notary Public

My commission expires:

2-21-18

