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MISSOURI PUBLIC SERVICE COMMISSION

CASE NO. ER-2007-0002

REBUTTAL TESTIMONY

OF

PHILIP Q. HANSER

ON

BEHALF OF

UNION ELECTRIC COMPANY
d/b/a AmerenUE

St. Louis, Missouri
February, 2007

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OF

PHILIP Q HANSER

CASE NO. ER-2007-0002

I. INTRODUCTION AND SUMMARY

Q. Please state your name, position, and business address.

A. My name is Philip Q Hanser. I am a Principal of The Brattle Group, an economic and management consulting firm with offices in Cambridge, MA, Washington DC, San Francisco, CA, London, England, and Brussels, Belgium. My business address is 44 Brattle Street, Cambridge, MA 02138.

Q. Are you the same Philip Q Hanser who submitted direct testimony in this case on July 7, 2006.

A. Yes. My qualifications were described in that previous submission, which addressed rate design issues.

Q. What is the purpose of your rebuttal testimony?

A. My rebuttal testimony reviews and responds to arguments made by witnesses Maurice Brubaker and Kevin Higgins in response to AmerenUE's proposal to cap its proposed increase to residential customers at 10 percent. I also respond to witness Robert Quinn's recommendation that AmerenUE establish an "essential service rate" rate that would apply to all residential customers. In addition, I respond to witness Billie Sue LaConte's recommended changes to AmerenUE's proposed industrial demand response pilot program.

Q. Please summarize your conclusions.

A. I believe that the Missouri Public Service Commission ("Commission") should reject the recommendations of Mr. Brubaker and Mr. Higgins to increase residential rates by substantially more than 10 percent. Neither of these witnesses provides a compelling rationale for rejecting AmerenUE's proposal to cap the residential rate increase at 10 percent. Nor have these witnesses undercut my contention that non-residential customers, on average, are better able to absorb electricity cost increases than residential customers.

In addition, if the Commission ultimately approves a rate increase in an amount that does not require a 10% cap for residential customers, my understanding is that AmerenUE does agree it is appropriate to set rates closer to those supported by the Class Cost of Service Study (CCOS) presented by Company witness William Warwick.

I also conclude that the Commission should reject Mr. Quinn's proposal to establish an essential services rate for residential customers. There are several problems with Mr. Quinn's proposal. First, he relies on assertions to demonstrate that additional low-income assistance is needed, without acknowledging the low-income programs already in place. Second, the absence of an income test means that high-income customers would receive an unnecessary benefit. Third, the inverted block rate resulting from Mr. Quinn's proposal would reduce retail customers' incentive to invest in energy efficiency (*e.g.*, insulation, efficienct appliances) and would penalize low-income customers with high levels of electricity consumption.

Finally, I conclude that the Commission should reject Ms. LaConte's proposed changes to the industrial demand response pilot program. In particular, Ms. LaConte's proposed increase in the credit provided to interruptible customers is not justified,

given the level of reliability and value to AmerenUE's system that will be provided by interruptible load.

II. TEN PERCENT RESIDENTIAL RATE CAP

Q. What does Mr. Brubaker propose with respect to the residential rate increase?

A. Mr. Brubaker does not propose a specific rate increase for the residential class but is critical of AmerenUE's proposal to cap the residential rate increase at 10 percent. According to Mr. Brubaker, AmerenUE's own cost-of-service study suggests that a 27 percent increase for residential customers would be appropriate if the Company's overall rate increase of 18 percent were granted.

Q. What is your response to this?

A. Mr. William Warwick sponsors AmerenUE's cost of service study, and is available to discuss issues related to it. Notwithstanding the specific results of any cost of service analysis, there are mitigating factors that influence rate design, with the end result that often the rates that are finally adopted differ significantly from the cost of service results. Rate structures are often a complex mixture of cost of service and value of service considerations.

Q. How do you respond to Mr. Brubaker's assertion that your rationales in support of the 10 percent residential rate increase are not generally accepted in the industry as the basis for rate design?

A. Such considerations are widely recognized as affecting utilities' customer programs for energy efficiency, demand-side management and so on, and public utility commissions have taken such considerations into account in approving such programs. In its

Direct Testimony, Staff recommends varying from the CCOS because of the customer impact. "Because of the relative rate impacts, the Staff is not recommending a movement all the way to each class' cost of service." Direct Testimony of James A. Busch, December 29, 2006, P.3, L. 19. I believe that customer impact may be one of the most important considerations typically utilized by Commissions as they balance the various interests in ratemaking proceedings.

Q. What does Mr. Higgins propose with respect to the class revenue requirements and the residential rate cap?

A. Mr. Higgins recommends that the Commission reject AmerenUE's proposed 10 percent residential rate cap, claiming that it would result in large subsidies paid by the non-residential customer classes. Mr. Higgins proposes that revenue be apportioned such that, for any rate increase, the Residential class is moved midway between the jurisdictional average percentage increase and Residential cost-of-service based percentage increase. The remaining revenue shortfall would be made up by applying an equal percentage increase above cost-of-service to the remaining customer classes.

Q. What is your response to Mr. Higgins' proposal?

A. Mr. Higgins has not provided a rationale as to why this represents an appropriate rate increase for residential customers. He ignores the impact his rate design would have upon the residential class. However, as stated above, if the Commission grants a rate increase in a lower amount than the Company has requested, there may be less need to shield residential customers from the rate impact.

Q. Please respond to Mr. Higgins' assertion that your revenue apportionment argument is "highly unorthodox."

A. Mr. Higgins claims that I would take ratemaking in a new direction by setting rates based on criteria unrelated to cost, efficiency, or stability. To the contrary, my proposal takes account of customers' ability to pay and their capability to make energy efficiency investments in response to rate increases, including fuel-switching.

III. ESSENTIAL SERVICES RATE

Q. Please describe Mr. Quinn's proposal to create an "essential services rate."

A. Using national energy consumption data collected by EIA, Mr. Quinn finds that, in 2001, the typical low-income household (persons whose income is below the federal poverty line) used 8,152 kilowatt-hours ("kWh") of electricity annually, or approximately 680 kWh per month. Mr. Quinn further assumes, based on EIA data, that 88 percent or approximately 600 kWh out of the 680 kWh per month consumed by low-income households is used to provide essential services such as heating and cooling, refrigeration, and laundry. So the first 600 kWh consumed by any AmerenUE residential customer would be under the essential services rate. Mr. Quinn acknowledges that the 600 kWh estimate is based on national data and is amenable to adjusting this figure based on modeling or analysis of the consumption of low-income customers in AmerenUE service area. In addition, Mr. Quinn suggests that the consumption subject to the essential services rate be adjusted on a seasonal basis to account for the summer cooling months.

Q. What discount would Mr. Quinn provide under the essential services rate?

A. Mr. Quinn proposes that, if AmerenUE's rates are reduced as a result of this case, the *entire* reduction would be realized in the essential services rate, so that the savings would fall entirely on the first 600 kWh consumed by each residential customer per month (or whatever level is ultimately set). If AmerenUE's rates increase as a result of this case, all residential customers would be fully exempted from the increase for their first 600 kWh of consumption per month; *i.e.*, the rate increase, insofar as residential rates are concerned, would fall entirely on kWh consumed above the first 600 each month for each residential customer.

Q. Would the essential services rate be exempt from AmerenUE's proposed fuel adjustment clause?

A. Yes. The first 600 kWh of consumption would be exempt from prospective rate adjustments for changed fuel costs. Thus, under Mr. Quinn's proposal, residential rates would be frozen at their existing level (assuming that AmerenUE is granted a rate increase by the Commission), at least until the next rate case, for consumption subject to the essential services rate.

Q. Would the essential services rate be applied to all customers or just to low-income customers?

A. Mr. Quinn proposes to apply the essential services rate to *all* residential customers. He opposes a program targeted to low-income customers for two reasons. First, he claims that a targeted program would be administratively burdensome for AmerenUE and for low-income customers, who would have to document their income. Second, he asserts

that the income cut-off would be arbitrary and would exclude families of modest means who would not qualify for the special rate but nonetheless would struggle to pay their monthly bills.

Q. Do you believe that the Commission should adopt the essential services rate proposed by Mr. Quinn?

A. No. I have several concerns with the proposed essential services rate and believe that it should be rejected by the Commission.

Q. What is your first concern with regard to Mr. Quinn's proposal?

A. Mr. Quinn fails to substantiate the need for an essential services rate in AmerenUE's service area. His testimony includes no analysis of the number of customers in AmerenUE's service area who are unable to pay their electric bill (or have severe difficulty doing so) because of financial hardship. Moreover, Mr. Quinn entirely ignores the programs sponsored by the government and by AmerenUE that provide financial assistance to low-income persons to help them pay their energy bills.

Q. What federal government program provides financial assistance to low-income residents to help them pay their energy bills?

A. The federal government makes financial assistance available through the low-income heating and energy assistance program ("LIHEAP"). This program provides heating and cooling assistance to approximately 5 million low-income households across the U.S. In fiscal year 2003 (the last year for which data was available) $40.7 million was appropriated to Missouri under the LIHEAP program. Almost 160,000 low-come households in Missouri received an average LIHEAP payment of $188/year to help them pay their home heating costs. In Missouri, LIHEAP funding is administered by the Missouri Department of Public

Services, through the Energy Assistance/Regular Heating Program and the Energy Crisis Assistance Program.

Q. What programs does AmerenUE offer to assist low-income customers?

A. AmerenUE offers several programs, some in conjunction with other utilities and local agencies, which provide cash or other assistance to low-income residents to help them pay their electricity bills. One example is the "Dollar More" program, which provides low-income households cash payments toward their electricity, natural gas or other energy bills. AmerenUE also has weatherization and other programs designed to improve the energy efficiency of low-income households. In one such program, AmerenUE provides air conditioning units and minor weatherization under the auspices of Operation Weather Survival, a coalition of St. Louis city and county agencies, utilities, social service agencies and health organizations.

Q. Is AmerenUE's ability to disconnect a residential customer's service during the winter restricted?

A. Yes. During the winter months (November 1 through March 31) the PSC Cold Weather Rule is in effect and electric service cannot be disconnected when the temperature is forecasted to drop below 32 degrees. So a low-income household (or any household, for that matter) will not lose their electric service during the winter because of a failure to pay their electric bill.

Q. Are you claiming that the LIHEAP program, in combination with the programs offered by AmerenUE and local agencies, fully meet the energy assistance needs of low-income households in AmerenUE's service area?

A. No. Since I have not studied this issue, I cannot conclude that the existing array of government and utility programs fully meets the energy assistance needs of low-income households in the AmerenUE service area. However, the cash and other assistance available through these programs clearly must be taken into account when assessing the need for the essential services rate proposed by Mr. Quinn. The essential services rate would be an addition to the array of programs already in place to assist low-income households.

Q. What is your second concern with Mr. Quinn's proposal?

A. My second concern with Mr. Quinn's proposal is that it is not well targeted, in that natural gas is the primary fuel used by households for space heating in AmerenUE's service area. Only 21 percent of the homes in AmerenUE's service area are heated by electricity. Mr. Quinn implicitly recognizes that electricity is not widely used for space heating by AmerenUE customers when he suggests that the baseline kWh for the essential services rate be adjusted upward during the summer months, to account for the cooling season, but does not propose a similar adjustment for the winter. Thus, the essential services rate proposed by Mr. Quinn would not help most low-income customers with their heating bills. Heating bills significantly exceed electricity bills during the winter months (for customers with non-electric space heating), making the essential services rate a poorly targeted form of financial assistance.

Q. What is your third concern with Mr. Quinn's proposal?

My third concern is that it subsidizes all residential customers, not just those in need. Under Mr. Quinn's proposal, affluent customers and other customers fully capable of paying their electricity bills would receive a subsidy on the first 600 kWh of electricity consumed per month. Subsidizing the electricity consumption of affluent customers is both unnecessary and poor policy because it reduces customers' incentive to invest in energy efficiency (*e.g.*, insulation, efficient appliances). Affluent customers, more than other customers, have the financial means to purchase energy-efficienct appliances and equipment with higher initial costs but lower life-cycle costs (because of the energy savings). Such customers should not be dissuaded from making cost-effective energy investments.

Q. What is your fourth concern with Mr. Quinn's proposal?

A. Mr. Quinn's proposed essential service rate would lead to what is known in ratemaking as an inverted block rate—a rate structure in which the rate increases as consumption increases. A primary justification for an inverted block rate is that the cost of energy production increases as consumption goes up. Accordingly, pricing an initial block of consumption lower than the tail block arguably follows the system economics of a utility, setting low-income interests aside. While there is some merit to this view, the time pattern of consumption has a profound effect on the utility's cost of production. The cost of meeting incremental consumption during on-peak and even shoulder-peak hours can be much higher than the cost of meeting incremental production during off-peak hours. So the cost of energy production does not necessarily increase as consumption goes up.

Q. What is the primary drawback of an inverted block rate with respect to Mr. Quinn's goal of assisting low-income customers?

A. The primary drawback of an inverted block rate is that it could particularly hurt some of the households that Mr. Quinn wishes to help. Once consumption exceeds the threshold level, higher prices will apply, regardless of the customer's income level or the cause of the higher usage. While Mr. Quinn cites EIA data showing that low-income customers *on average* consume less than the residential population as a whole, there are low-income households with high consumption who will be hurt be inverted block rates. Low-income families with larger families and higher consumption, low-income households who live in all-electric and/or inefficient dwelling units will, for example, be hurt by inverted block rates. Indeed, some low-income households are likely to see their bills go up, not down, as a result of inverted block rates.

Since the first 600 kWh of electricity would be sold at a reduced price to all residential customers, including affluent customers, the tail block could have a much higher rate than the initial block, depending on the results of this rate case. Thus, low-income customers with high levels of consumption would effectively be cross-subsidizing affluent residential customers with modest consumption (*e.g.*, consumption at a vacation home). This reinforces my conclusion that the proposed essential service rate is a poorly-targeted means of assisting low-income assistance.

IV. INDUSTRIAL DEMAND RESPONSE PILOT

Q. What concerns does Missouri Energy Group Witness LaConte raise with respect to AmerenUE's proposed industrial demand response pilot program?

A. Ms. LaConte raises three concerns with respect to this program. First, she argues that the credit should be larger. Second, she asserts that the proposed limit should be raised from 100 MW to 800 MW. Third, Ms. LaConte contends that the period for the pilot program is too short.

Q. What is Ms. LaConte's proposed credit for interruptible load?

A. Ms. LaConte argues that the credit for interruptible load should be in the range of $3.15-$3.55/kW/month, as opposed to AmerenUE's proposed credit of $2/kW month.

Q. What rationale does Ms. LaConte offer in support of her proposed credit?

A. Ms. LaConte contends that the credit should be based on the cost of peaking capacity. Her proposed range reflects the capacity cost of a new combustion turbine ("CT") unit, based on estimates prepared by AmerenUE and other parties.

Q. What is your response to Ms. LaConte's contention that the credit should be based on the cost of peak generating capacity?

A. I agree, in principle, that the credit for interruptible load should be *based* on the cost of avoided peaking capacity, but I do not believe that—in the case of AmerenUE's pilot program—the credit should be *equal* to the estimated cost of a new CT. This is because interruptible demand, at least as defined in AmerenUE's proposed pilot program, does not provide the same level of reliability and security as a CT. One reason for this is that interruptible customers have the right to not reduce demand when requested to do so by

AmerenUE. In addition, there is a one-hour notice provision provided to interruptible customers. CTs, by contrast, can be up and running at full capacity within 10-30 minutes, depending on the technology. Also, customers only can be interrupted for a maximum of 200 hours, whereas a CT could generate electricity during most of the year (if that were necessary). An interruptible rate program with no notice, no restrictions upon hours of interruption per incident, and ample ability to interrupt load frequently during peaking periods arguably would provide the equivalent reliability and security as a CT, but AmerenUE's proposed pilot program will not provide this type of service or value to its system. As a result, it is appropriate to set the credit equal to a percentage of a CT's capacity cost, rather than its full capacity cost.

Q. What is your response to Ms. LaConte's proposal to raise the program limit from 100 MW to 800 MW?

A. My understanding is that in AmerenUE's former interruptible load program, known as the Interruptible Power Rate (10M), only four customers with a total non-firm load of 47 MW were participating when the program was terminated in 1999. Given this, 100 MW seems to be a reasonable limit for the purpose of a pilot program, though I have not studied the potential amount of curtailable load in AmerenUE's service area.

Q. What is your response to Ms. LaConte's contention that the proposed pilot program is too short to justify any significant investment by customers?

A. Ms. LaConte provides no evidence whatsoever to support her contention, so I cannot assess the validity of this claim. However, I think her concern likely is overstated for this reason: retail rate structures and tariffs are subject to the approval of the Commission. Apart from approved settlements, there are no "guarantees" with regard to rate levels or rate

structures—they can and do change over time. Industrial customers take these "risks" into account all the time when considering energy-related investments. For example, a customer's decision to invest in energy-saving equipment will be based, in large part, on projections of future energy prices.

At the same time, industrial customers undoubtedly recognize that regulators across the U.S. have indicated interest in improving demand responsiveness in the electric power industry. Given the strong interest in improved demand responsiveness, I find it unlikely that the Commission would be unreceptive to making an interruptible demand program permanent if the results of the pilot are encouraging.

Q. Does this conclude your testimony?

A. Yes.

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Union Electric Company d/b/a AmerenUE for Authority to File Tariffs Increasing Rates for Electric Service Provided to Customers in the Company's Missouri Service Area.	)))))	Case No. ER-2007-0002

AFFIDAVIT OF PHILIP Q. HANSER

COMMONWEALTH OF MASSACHUSETTS)
) **ss**
COUNTY OF MIDDLESEX)

Philip Hanser, being first duly sworn on his oath, states:

1. My name is Philip Q Hanser. I work in the City of Cambridge, Massachusetts, and I am employed by The Brattle Group.

2. Attached hereto and made a part hereof for all purposes is my Rebuttal Testimony on behalf of Union Electric Company d/b/a AmerenUE, all of which has 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.

Philip Q Hanser

Subscribed and sworn to before me this 5th day of February, 2007.

Notary Public

My commission expires: November 15, 2007

MARJORIE J. FISCHER
Notary Public
Commonwealth of Massachusetts
My Commission Expires Nov 15, 2007