Exhibit No.:	
Issues:	Revenue Requirement
Witness:	Nicholas L. Phillips
Type of Exhibit:	Direct Testimony
Sponsoring Party:	Missouri Industrial Energy Consumers and Midwest Energy Consumers Group
Case No.:	ER-2012-0174
Date Testimony Prepared:	August 2, 2012

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Kansas City Power & Light Company's Request for Authority to Implement a General Rate Increase for Electric Service	))))))	**Case No. ER-2012-0174** Tracking No. YE-2012-0404

Direct Testimony and Schedules of

Nicholas L. Phillips

Revenue Requirement

On behalf of

Missouri Industrial Energy Consumers
and
Midwest Energy Consumers Group

NON-PROPRIETARY VERSION

August 2, 2012

BRUBAKER & ASSOCIATES, INC.

Project 9593

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Kansas City Power & Light Company's Request for Authority to Implement a General Rate Increase for Electric Service	)	**Case No. ER-2012-0174** Tracking No. YE-2012-0404

STATE OF MISSOURI)
) SS
COUNTY OF ST. LOUIS)

Affidavit of Nicholas L. Phillips

Nicholas L. Phillips, being first duly sworn, on his oath states:

1. My name is Nicholas L. Phillips. I am a consultant with Brubaker & Associates, Inc., having its principal place of business at 16690 Swingley Ridge Road, Suite 140, Chesterfield, Missouri 63017. We have been retained by Missouri Industrial Energy Consumers and Midwest Energy Consumers Group in this proceeding on their behalf.

2. Attached hereto and made a part hereof for all purposes are my direct testimony and schedules which were prepared in written form for introduction into evidence in Missouri Public Service Commission Case No. ER-2012-0174.

3. I hereby swear and affirm that the testimony and schedules are true and correct and that they show the matters and things that they purport to show.

Nicholas L. Phillips

Subscribed and sworn to before me this 1st day of August, 2012.

MARIA E. DECKER
Notary Public - Notary Seal
STATE OF MISSOURI
St. Louis City
My Commission Expires: May 5, 2013
Commission # 09706793

Notary Public

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Direct Testimony of Nicholas L. Phillips

I. INTRODUCTION

Q PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A Nicholas L. Phillips. My business address is 16690 Swingley Ridge Road, Suite 140, Chesterfield, MO 63017.

Q WHAT IS YOUR OCCUPATION?

A I am an Associate Consultant with the firm of Brubaker & Associates, Inc. ("BAI"), energy, economic and regulatory consultants.

Q PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND EXPERIENCE.

A This information is included in Appendix A to this testimony.

Q HAVE YOU PREVIOUSLY FILED TESTIMONY BEFORE THE MISSOURI PUBLIC SERVICE COMMISSION ("COMMISSION")?

A Yes. I have filed direct testimony with the Commission concerning electric utility fuel costs and off-system sales ("OSS") revenues in Ameren Missouri Case No. ER-2012-0166. I have also previously performed analysis of electric utility fuel

costs and OSS revenues under the direction and supervision of my colleague, James R. Dauphinais, for his testimony in Ameren Missouri Case Nos. ER-2011-0028 and ER-2010-0036.

Q ON WHOSE BEHALF ARE YOU APPEARING IN THIS PROCEEDING?

A This testimony is presented on behalf of Missouri Industrial Energy Consumers ("MIEC") and Midwest Energy Consumers Group ("MECG").

Q WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A My testimony addresses the level of native load fuel and purchased power expense, and OSS margins that Kansas City Power & Light Company ("KCPL" or "Company") proposes to include in its base rate revenue requirement. Specifically, I address the Iatan Unit 2 forced outage rate assumption used by KCPL in its native load fuel and purchased power expense estimate and the various assumptions used by the Company in its calculation of OSS margins. Unless noted as a Missouri jurisdictional value, the numbers presented in this testimony represent total KCPL.

The fact that I do not address a particular issue should not be construed as an approval of any position taken by KCPL.

Q PLEASE SUMMARIZE YOUR CONCLUSIONS AND RECOMMENDATIONS.

A I recommend that the Missouri Public Service Commission ("Commission") reduce KCPL's proposed base rate level of native load fuel and purchased power expense by *** *** (Missouri jurisdictional *** ***) to correct for the unreasonable forced outage rate assumption KCPL used for Iatan Unit 2.

I also recommend that KCPL's proposed base rate level of OSS margins be increased by *** *** (Missouri Jurisdictional *** ***) to correct for the inappropriate use by the Company of inputs to its OSS model that do not reflect the normalized test year. Taken together, these two adjustments reduce the Company's proposed base rate revenue requirement by *** *** (Missouri jurisdictional *** ***).

II. NATIVE LOAD FUEL AND PURCHASED POWER EXPENSE

Q PLEASE EXPLAIN THE TERM NATIVE LOAD FUEL AND PURCHASED POWER EXPENSE.

A KCPL's fuel and purchased power expense for native load is KCPL's total fuel and purchased power cost incurred to serve the combination of its retail customer load and its long-term (i.e., municipal customer) wholesale contract obligations.

Q HOW SHOULD THE COMMISSION SET THE FUEL AND PURCHASED POWER EXPENSE COMPONENT OF KCPL'S REVENUE REQUIREMENT?

A It should be set on the same basis as the remainder of KCPL's revenue requirement. Specifically, it should be set in this proceeding based on KCPL's actual costs during the historic test year ending September 30, 2011 adjusted as necessary for known and measurable changes from the true-up period that ends August 31, 2012 and normalized to address abnormalities such as annual swings in weather and commodity market prices.

Q PLEASE DESCRIBE YOUR REVIEW OF KCPL'S PROPOSED LEVEL OF NATIVE LOAD FUEL AND PURCHASED POWER EXPENSE.

A I reviewed the direct testimony and schedules of KCPL witnesses Crawford and Blunk concerning KCPL's proposed native load fuel and purchased power expense. I also reviewed KCPL's response to data requests in this proceeding that relate to the issue. As discussed in Appendix B of this testimony, BAI developed a production cost model database for the KCPL system using the RealTime production cost software of The Emelar Group. This production cost model database allowed BAI to use the RealTime production cost software to calculate the estimated impact on Native Load Fuel Cost from updating and correcting the inputs KCPL used in its own MIDAS production cost model. Finally, I applied my experience to the information available in considering the reasonableness of KCPL's proposed level of native load fuel and purchased power expense.

Q PLEASE DESCRIBE THE REALTIME PRODUCTION COST MODEL AND HOW YOU HAVE USED IT IN THIS PROCEEDING.

A RealTime is a production cost software package similar in purpose and application to the MIDAS production cost software package used by KCPL. It is a product of The Emelar Group. Both RealTime and MIDAS are competent models for estimating utility production cost

The Commission Staff has been using the RealTime software for over 10 years for electrical corporations over which the Commission has ratemaking jurisdiction. It is my understanding that the Commission Staff used the RealTime software in KCPL's last four general electric rate proceedings in order to examine the reasonableness of KCPL's projections for its fuel and purchased power expense.

I have used the RealTime software in this proceeding to estimate how KCPL's proposed level of native load fuel and purchased power expense will change when I update and correct certain assumptions made by KCPL. It is my understanding that the Commission Staff is again intending to use the RealTime software for a similar purpose in this proceeding.

Q HAS KCPL PREVIOUSLY RECOGNIZED THE ACCURACY OF THE RESULTS PROVIDED BY THE REALTIME MODEL?

A Yes. In Case No. ER-2012-0355, KCPL relied upon the MIDAS model for calculating fuel and purchased power expense. In that same case, Staff relied upon the RealTime model. In the true-up portion of the case, KCPL abandoned the results of the MIDAS model and expressly adopted the results provided by the Staff's RealTime model.

Q WHAT HAS BEEN DONE IN THIS PROCEEDING TO ENSURE THE REALTIME MODEL PROVIDES RESULTS SIMILAR TO THOSE THAT WOULD BE PROVIDED BY THE MIDAS MODEL?

A We implemented a RealTime model database for this proceeding using the same inputs that KCPL used in its MIDAS model runs to determine normalized test year native load fuel and purchased power expense. This RealTime case, which I will refer to as the "BAI Native Load Benchmark Case," projected a native load fuel and purchased power expense within *** *** of the fuel and purchased power expense projected by KCPL in its MIDAS run for the normalized test year in this proceeding. Appendix B to this testimony provides a more detailed discussion on the development of the BAI Native Load Benchmark Case and how its estimate of native

load fuel and purchased power expense compares to that of KCPL's MIDAS run for the normalized test year.

Q HAVE YOU ALSO PERFORMED A CALIBRATION TO DEMONSTRATE THE ABILITY OF THE REALTIME SOFTWARE TO REASONABLY MODEL THE ACTUAL HISTORICAL OPERATION OF KCPL'S GENERATION FACILITIES?

A Yes. I performed two calibrations. Both cases demonstrate that the RealTime production cost software can reasonably model the actual historical operation of KCPL's generation facilities. I will refer to these cases as "BAI Calibration Case 1" and "BAI Calibration Case 2." Appendix B contains additional information regarding these calibration cases.

Q CAN YOU PLEASE DESCRIBE BAI CALIBRATION CASE 1?

A Yes. In response to MECG Data Request 2.1, KCPL provided a comparison of a MIDAS simulation of the operation of its generation facilities for an historical three-month period ending March 31, 2012 to actual generation operation during that same period. This was a simulation of KCPL's generation operations to support both its native load sales and off-system energy sales during the three-month period. The MIDAS simulation appears to accurately reflect how KCPL's system was actually operated during this three-month period.

Starting with the BAI Native Load Benchmark Case, we modified our input assumptions to reflect those received in the Company's response to MECG Data Request 2.1 in order to create the BAI Calibration Case 1 RealTime production cost run. The results of BAI Calibration Case 1 RealTime production cost run were almost identical to both the KCPL MIDAS run for the historic period and KCPL's actual

generation operation for that period. The difference is within 0.5% when compared to KCPL's actual generation operations for this period. A detailed comparison is presented in Appendix B.

Q IS IT SIGNIFICANT THAT KCPL MODELED OFF-SYSTEM ENERGY SALES IN ITS MIDAS CALIBRATION RUN?

A Yes. It is important to note that KCPL modeled off-system energy sales in its MIDAS calibration run because it demonstrates the necessity of modeling off-system energy sales in order to accurately replicate KCPL's actual generation operations.

Q DESPITE MIDAS' ABILITY TO MODEL OSS REVENUES AND COSTS, DID KCPL RELY ON THIS PORTION OF ITS MIDAS MODEL?

A No, it did not. KCPL's estimate of its fuel and purchased power expense was conducted separately from its estimate of the margins derived from off-system energy sales. As discussed on page 10, KCPL using MIDAS for fuel and purchased power expense, but relying on a different model and inputs for off-system energy sales margins, is problematic.

Q PLEASE DESCRIBE BAI CALIBRATION CASE 2.

A Similar to BAI Calibration Case 1, I started with the BAI Native Load Benchmark Case and modified the input assumptions to reflect those provided by the Company for the historical six month period from October 1, 2010 to March 31, 2011. I then compared the output to KCPL's actual generation levels for this period. The results of this calibration demonstrate a degree of accuracy within 1.3% of the historical KCPL generation levels for this period. A detailed comparison is presented in Appendix B.

Q BASED ON YOUR CALIBRATION RUNS, DO YOU BELIEVE THAT REALTIME REASONABLY REPLICATES HISTORICAL KCPL OPERATIONS?

A Yes, I do.

Q HAVE YOU IDENTIFIED ANY INPUTS IN KCPL'S MIDAS MODEL OF NATIVE LOAD FUEL AND PURCHASED POWER EXPENSE THAT YOU BELIEVE ARE UNREASONABLE?

A While I continue to review these inputs and will review the direct testimony of other parties in this proceeding with regard to this issue, I have so far identified one concern. Specifically, KCPL's Equivalent Forced Outage Rate ("EFOR") assumption for the Iatan Unit 2 generation facility is unreasonably high. This understates the generating unit's historical availability when not down for scheduled outages.

Q WHAT IS MEANT BY EFOR ASSUMPTION?

A EFOR is the hours of unit failure (unplanned outage hours and equivalent unplanned derated hours) given as a percentage of the total hours of the availability of that unit (unplanned outage, unplanned derated, and service hours). These rates are then used as an input to a production cost model which will simulate random outages for each unit to determine the target number of hours a generating unit will be forced out of service.

Q WHAT FORCED OUTAGE RATE DO YOU RECOMMEND USING AT IATAN UNIT 2?

A I recommend using a forced outage rate of 5.5% as opposed to the 10.5% rate assumed by the Company.

Q PLEASE EXPLAIN HOW YOU DEVELOPED THE EFOR RECOMMENDATION FOR IATAN UNIT 2.

A Using NERC GADS[1] data, I calculated the EFOR for Iatan Unit 2 with data beginning on January 1, 2011 through December 31, 2011, which is the first calendar year of operation for Iatan Unit 2. In 2011, Iatan Unit 2 experienced an EFOR of 5.5%. I then compared the calculated value to the 2006-2010 five-year average of similarly sized (800-999 MW) coal-fired generators reporting into the NERC GADS of 4.53% and conservatively selected the higher of the two values. I would note that the 2006-2010 average is the most current data published on the NERC website at the time of writing this testimony.

Q HAVE YOU RERUN YOUR PRODUCTION COST MODEL FOR THE NORMALIZED TEST YEAR USING THE UPDATED FORCED OUTAGE RATE YOU HAVE RECOMMENDED?

A Yes. The result is a net *** *** (Missouri jurisdictional *** ***) decrease in KCPL's proposed native load fuel and purchased power expense. This is documented in my Schedule NLP-1.

III. OSS MARGINS

Q HAVE YOU REVIEWED THE LEVEL OF OSS MARGINS THE COMPANY PROPOSES TO INCLUDE IN ITS REVENUE REQUIREMENT?

A Yes. While I continue to review KCPL's proposed level of OSS margins, and will review the direct testimony of other parties concerning these margins, as of the date

[1]NERC GADS is the main source of power station outage data in North America and is used by analysts industry-wide in numerous applications.

of this testimony, I have found a number of issues with the level of OSS margins the Company's proposes to include in its base rate revenue requirement. In this testimony, I will provide the Commission with two different quantifications of OSS margins. First, I will provide a quantification that is based upon the use of the RealTime software and, therefore, uses inputs consistent with those used to calculate native load fuel and purchased power expense. Second, I will provide a quantification that is based upon the Northbridge Group, Inc. ("Northbridge") model used by KCPL, but corrected to account for improper inputs.

A. REALTIME CALCULATION OF OSS MARGINS

Q HAVE YOU EXPANDED THE BAI NATIVE LOAD BENCHMARK REALTIME CASE, WITH THE IATAN UNIT 2 EFOR CORRECTED, TO CALCULATE A NORMALIZED LEVEL OF OFF-SYSTEM ENERGY SALES MARGINS?

A Yes. Both MIDAS and RealTime are capable of making a reasonable estimate of OSS margins and native load fuel and purchased power expense under a set of consistent input conditions. Unlike KCPL, which failed to use a unified approach to calculating fuel and OSS margins, I utilized the BAI Native Load Benchmark Case database, with the Iatan Unit 2 EFOR corrected, to model normalized operations of KCPL including off-system energy sales. In addition, I utilized a hurdle rate to account for the lack of a centralized day-ahead and real-time spot energy market in the SPP market area.

Q WHAT IS A HURDLE RATE?

A Generically speaking, a hurdle rate is a minimum condition that must be satisfied in order for a transaction to occur. Specifically, I am using a hurdle rate in this case to

reflect some of the uncertainty and risk associated with KCPL's OSS and as a mechanism to approximate the impact of inefficiencies in the wholesale electricity market.

Q WHY WAS IT NECESSARY TO MODEL A HURDLE RATE FOR OFF-SYSTEM ENERGY SALES?

A In SPP, outside of the energy imbalance market, wholesale transactions are accomplished through bilateral contracts. As such, these transactions are entered into through communications between each buyer and seller of energy. This contrasts with market areas with a centralized day-ahead and real-time spot market for energy, such as found in the MISO region, where the majority of spot power sales and purchases are accomplished through that centralized market. Given the lack of such a centralized market in the SPP region, and the time it takes to communicate and implement a transaction, certain transactions that would have otherwise been economic will be missed.

When modeling the non-firm energy markets, the computer simulation models a perfect dispatch in an hourly market. However, due to the lack of centralized day-ahead and real-time spot energy markets in the SPP market area, the actual operations within the market are not perfect and it is not likely KCPL will actually receive the SPP-North marginal price for energy in each hour for all of its bilateral transactions. The hurdle rate recognizes these inefficiencies and attempts to account for them. The hurdle rate was subtracted from the hourly market price of the OSS market so that the price seen by KCPL's generators for purposes of determining when to sell was less than the actual settlement price of energy.

Q HOW DID YOU DETERMINE A REASONABLE HURDLE RATE?

A Through an iterative process, I determined that a hurdle rate of $3.00/MWh reasonably accounts for the market inefficiencies and produces an accurate calibration to actual historical generation.

Q WHAT IS AN ITERATIVE PROCESS?

A An iterative process is a process for determining a result by repeating rounds of analysis or a cycle of operations. The process used here was to iterate through production cost simulations while adjusting the hurdle rate until the result of the simulation produced an accurate calibration to actual historical generation.

Q WHAT WAS THE RESULT OF YOUR REALTIME SIMULATION OF NATIVE LOAD FUEL COST AND OSS MARGINS?

A It resulted in OSS margins of *** ***. This is documented in my Schedule NLP-1.

Q HAS THE COMMISSION EVER ACCEPTED THE REALTIME MODEL FOR PURPOSES OF DETERMINING OSS MARGINS?

A Yes. I am aware that in Case Nos. ER-2010-0036 and ER-2011-0028, the Commission relied on results from production cost simulations using RealTime for the purposes of setting the Net Fuel Cost component of Ameren Missouri's base rate revenue requirement, which includes OSS margins. It may have been used in other cases as well.

B. CORRECTED COMPANY CALCULATION OF OSS MARGINS

Q PLEASE DESCRIBE THE COMPANY'S CALCULATION OF OSS MARGINS.

A KCPL is proposing that the level of OSS margins included in its base rates be equal to the 40th percentile of its forecasted OSS margins for calendar year 2013. The inputs underlying this attempt to forecast 2013 OSS margins are a substantial departure from the inputs KCPL uses to develop its proposed level of native load fuel and purchased power expense. KCPL's proposed native load fuel and purchased power expense is based on a MIDAS production cost run for the test year, updated to reflect known and measureable changes through the end of the true-up period.

In contrast, to estimate the 40th percentile of its OSS margins, the Company hired Northbridge to perform a probabilistic analysis of KCPL's expected level of OSS margins.

Q WHAT HAVE YOU DONE IN ORDER TO ENSURE YOU HAVE A REASONABLE UNDERSTANDING OF THE METHODOLOGY USED BY NORTHBRIDGE IN ITS CALCULATION OF OSS MARGINS?

A Along with a review of Mr. Schnitzer's testimony, responses to data requests and the rest of the Company's filing, I also met with Mr. David Coleman, a Principal with Northbridge, for a demonstration and presentation regarding the software developed and utilized by Northbridge in their forecast for KCPL. In addition, Northbridge has provided a laptop with its software installed, and I am in the process of using it to review the reasonableness of the model and the inputs used in the model.

Q HAVE YOU IDENTIFIED ANY ISSUES WITH NORTHBRIDGE'S ESTIMATE OF KCPL'S OSS MARGINS?

A Yes. While I am not yet prepared to fully comment on the inputs and methodology proposed by Northbridge or make a recommendation regarding the reasonableness of its use to assess the risk and volatility associated with the Company's OSS margins, I continue to have concerns with the inputs that KCPL directed Northbridge to use in its calculations.

Q PLEASE EXPLAIN YOUR GENERAL CONCERN WITH THE INPUTS WHICH KCPL INSTRUCTED NORTHBRIDGE TO USE.

A The inputs that KCPL has instructed Northbridge to use are not the same inputs used by KCPL in its test year MIDAS production cost run for the purpose of determining its proposed fuel and purchased power expense.

Q WHAT IS YOUR CONCERN WITH USING INPUTS FOR PURPOSES OF CALCULATING OSS MARGINS THAT DO NOT REPRESENT THE NORMALIZED TEST YEAR?

A As the Company states in its response to MECG Data Request 2.8,

> "There are several differences in the Cost of Service Model and the Off-System Sales margin estimate due to the fact that they estimate different time periods. The COS model utilizes a test year for 12 months ending with a True up date of August 31, 2012."

In particular, as can be seen in Section V of Mr. Schnitzer's testimony, probability distributions of 2013 margins, the OSS margin forecast is only representative of 2013, not a normalized level of OSS margins. This is contrary to the concept of a normalized test year and actually attempts to extend and include information beyond the end of the true-up period in this proceeding.

Q WHAT ARE SOME OF THE DIFFERENCES BETWEEN THE INPUTS USED IN THE NORMALIZED TEST YEAR PRODUCTION COST RUN FOR NATIVE LOAD FUEL AND PURCHASED POWER EXPENSE AND THE INPUTS USED IN THE OSS MODEL?

A As indicated in the Company's response to MECG 2.8:

> "Commodity information is different due to the difference in prices from the test year to the forecast for 2013 prices. Electric demand is different from the normalized estimate of the test year period to the forecasted system load of 2013. Generator availability is different due to a difference in the normalized set of maintenance outages in the COS and the forecasted 2013 outage schedule used in the OSS model."

Q ARE THESE THE ONLY DIFFERENCES?

A No. In addition to the items identified by the Company in response to MECG Data Request 2.8, the wind profiles, forced outage rates and planned generator deratings are also different from the corresponding values used in the normalized test year native load production cost run.

Q CAN YOU PLEASE ELABORATE ON THE PLANNED DERATINGS USED BY THE COMPANY IN THEIR CALCULATION OF OSS MARGINS?

A Yes. KCPL directed Northbridge to include planned generator deratings as an input in its OSS margin calculation. Specifically, 451 MWs of coal-fired generation capacity was inexplicably made unavailable for all weekday hours from 10pm to 6am, of which a combined 273 MWs was removed from the Iatan generating units. In other words, KCPL has directed Northbridge to exclude slightly over 16% of KCPL's owned share of coal-fired generating resources from approximately 25% of all hours in a year. This assumption was not modeled by KCPL in its normalized test year native load fuel

and purchased power expense production cost simulation. It should also not be modeled in simulations performed to estimate OSS margins.

Q HOW DOES THIS ASSUMPTION AFFECT THE AMOUNT OF OSS THAT COULD BE MADE?

A It removes up to 1 million MWhs of generation that potentially could have been sold off-system.

Q WHAT INPUTS DO YOU RECOMMEND USING?

A I recommend using the same inputs that I have used in the BAI Benchmark Case with the Iatan Unit 2 equivalent force outage rate assumption corrected. This will ensure that the relationship between expenses, revenues and rate base will be kept in synchronism in order to prevent the Company from over-recovering its costs.

Q HAVE YOU BEEN ABLE TO REPRODUCE THE RESULTS OF THE PROBABILISTIC OSS MARGIN ANALYSIS PRESENTED BY MR. SCHNITZER IN THIS PROCEEDING?

A Yes. While it is not an exact replication because of the random seeds I used to initialize the simulations being unavoidably different from the ones used by Northbridge, I have benchmarked to Northbridge's calculations with a mean average percent error of 0% for the 1,000 scenarios simulated by Northbridge. The final results, once a probability distribution was fit, were virtually identical to those presented by Northbridge, as can be seen on Figure NLP-1 below.

Figure NLP-1

OFF-SYSTEM SALES MARGINS
(Calendar Year 2013)

NON-PROPRIETARY

Q HAVE YOU RERUN THE NORTHBRIDGE MODEL TO ACCOUNT FOR THE IMPROPER INPUTS PROVIDED BY KCPL?

A Yes. While I would note that my results are still preliminary, after incorporating appropriate inputs, the results of the Northbridge model are *** *** at the 40th percentile, *** *** at the 50th percentile (median) and *** *** at the 60th percentile, which is where the Company has proposed a new sharing mechanism. I would also note that the 50th percentile, or median value, represents a level of OSS margins that the simulation is predicting that KCPL has an equal probability of experiencing outcomes above or below. The results of this simulation are presented in Figure NLP-2 below.

Figure NLP-2

OFF-SYSTEM SALES MARGINS
(Normalized Test Year)

NON-PROPRIETARY

C. OSS MARGINS RECOMMENDATION

Q CAN YOU PLEASE SUMMARIZE YOUR CONCLUSION REGARDING THE APPROPRIATE LEVEL OF OSS MARGINS?

A Yes. I recommend that the Commission establish a level of OSS margins of *** *** (Missouri jurisdictional *** ***). This *** *** (Missouri jurisdictional *** ***) recommendation is chosen as the estimate of normalized OSS margins predicted by the results of the RealTime production cost run with OSS. Should the Commission decide not to follow my primary recommendation, I recommend using the 50th percentile (median) value of *** *** (Missouri jurisdictional *** ***) that results from my re-run

of the Northbridge OSS model, updated using inputs consistent with my RealTime calculation of KCPL's fuel and purchased power expense. The 50th percentile level was chosen for OSS margins for the reasons discussed in the testimony of my colleague, Mr. Greg Meyer.

IV. CONCLUSIONS AND RECOMMENDATIONS

Q PLEASE SUMMARIZE YOUR CONCLUSIONS AND RECOMMENDATIONS.

A I recommend the Commission reduce KCPL's revenue requirement by *** *** (Missouri jurisdictional *** ***). This net *** *** (Missouri jurisdictional *** ***) reduction includes: (i) a *** *** (Missouri jurisdictional *** ***) decrease in KCPL's proposed fuel and purchased power expense for native load from correcting the unreasonable forced outage rate assessed for Iatan Unit 2 and (ii) a *** *** (Missouri jurisdictional *** ***) increase in projected OSS margins over the level proposed by KCPL.

In total, I am recommending KCPL's proposed base rate revenue requirement be reduced by *** *** (Missouri jurisdictional *** ***).

Q DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A Yes.

Qualifications of Nicholas L. Phillips

Q PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A Nicholas L. Phillips. My business address is 16690 Swingley Ridge Road, Suite 140, Chesterfield, MO 63017.

Q PLEASE STATE YOUR OCCUPATION.

A I am an Associate Consultant with the firm of Brubaker & Associates, Inc. ("BAI"), energy, economic and regulatory consultants.

Q PLEASE STATE YOUR EDUCATIONAL BACKGROUND AND PROFESSIONAL EMPLOYMENT EXPERIENCE.

A I graduated from the Washington University in St. Louis/University of Missouri-St. Louis joint engineering program in 2010 where I received a Bachelor of Science degree in Electrical Engineering. I joined BAI as an intern in 2009 and upon graduation, I accepted a position with BAI as an Associate Engineer. In January of 2012, I was promoted to the position of Associate Consultant. At BAI, I have been involved with numerous regulated and competitive electric service issues. These have included transmission planning, resource planning, electric price forecasting, load forecasting, cost of service, combined heat and power steam costs and power procurement. This has involved the performance of power flow, production cost, transmission line routing, cost of service and other analysis to address these issues. I am currently working toward a Master of Engineering in Electrical Engineering (with an emphasis in Power Systems Engineering) through Iowa State University's Engineering Distance Education Program. At this time I have completed 80% of my

coursework. My completed coursework includes classes in Power & Energy System Planning, Power System Operation & Control (Steady State Analysis), Economic Systems for Electric Power Planning, Power System Dynamics, Electromechanical Wind Energy Conversion & Grid Integration, Nuclear Engineering & Radiation Theory, Reliability, and Linear System Theory.

Topics covered by these classes include but are not limited to Economic Dispatch, Unit Commitment, Production Cost Modeling, Capacity Expansion Planning, Transmission Planning, Power Flow Analysis, Security Constrained Optimal Power Flow, Transient and Dynamic Stability, Wholesale Electricity Markets, Nuclear Energy, Reliability Studies as well as experience with PLEXOS, an industry leading combined production cost and capacity/transmission expansion model. Additionally, MISO professionals presented a series of nine lectures discussing their approach to the planning process and use of production costing, capacity/transmission expansion planning, and other software including PSS/E, PROMOD IV, Strategist, MARS, and EGEAS. I am a member of the Institute of Electrical and Electronics Engineers. Prior to joining BAI, through the department of Electrical and Computer Engineering and the Medical School at Washington University in St. Louis, I aided in preliminary research focusing on the use of ultrasound as a mechanism for in vitro localized thermometry.

BAI was formed in April 1995. BAI and its predecessor firm have participated in more than 700 regulatory proceedings in 40 states and Canada.

BAI provides consulting services in the economic, technical, accounting, and financial aspects of public utility rates and in the acquisition of utility and energy services through RFPs and negotiations, in both regulated and unregulated markets. Our clients include large industrial and institutional customers, some utilities and, on

occasion, state regulatory agencies. We also prepare special studies and reports, forecasts, surveys and siting studies, and present seminars on utility-related issues.

In general, we are engaged in energy and regulatory consulting, economic analysis and contract negotiation. In addition to our main office in St. Louis, the firm also has branch offices in Phoenix, Arizona and Corpus Christi, Texas.

Appendix B

Benchmarking RealTime to the Kansas City Power & Light MIDAS Production Cost Model

Q PLEASE EXPLAIN HOW BAI DEVELOPED ITS "BAI BENCHMARK CASE" THAT WAS USED TO COMPARE THE RESULTS OF THE EMELAR GROUP REALTIME PRODUCTION COST SIMULATION MODEL TO THE RESULTS OF THE MIDAS PRODUCTION COST SIMULATION MODEL.

A We started with the inputs KCPL used in its production cost model. We then used these inputs to create a database to as closely as possible match the inputs that KCPL used in its direct testimony normalized test year MIDAS run.

Q CAN YOU PLEASE DETAIL HOW THE RESULTS OF THE BAI BENCHMARK CASE COMPARES TO THE MIDAS PRODUCTION COST MODEL RUN PERFORMED BY KCPL?

A Yes. As detailed in Schedule NLP-1, the results of the BAI Benchmark Case yielded a native load fuel and purchased power expense of *** *** versus the *** *** native load fuel and purchased power expense yielded from the KCPL normalized test year MIDAS production cost simulation model run. Thus, in aggregate, the BAI Benchmark Case results are within approximately *** *** or 0.08% of the KCPL normalized test year MIDAS run. In addition, as also detailed in Schedule NLP-2, the annual MWh of energy production at KCPL's nuclear and coal stations in the BAI Benchmark Case is within ±0.3% of the levels that are in KCPL's normalized test year MIDAS run. The only significant difference between the BAI Benchmark Case and KCPL normalized test year MIDAS run relate to gas and oil

fired generation. The BAI Benchmark Case has *** *** or approximately 28% less gas and oil fired energy production than the KCPL normalized test year MIDAS run. However, this difference does not have a significant impact on predicting native load fuel and purchased power expense since native load fuel and purchased power expense, in the aggregate, is within ±0.08% and nuclear and coal station MWh production is all within ±0.3%.

Q HAVE YOU ALSO BENCHMARKED THE REALTIME MODEL AGAINST KCPL'S CALIBRATION MIDAS RUN?

A Yes. I will refer to this as the "BAI Calibration Case 1." For the BAI Calibration Case 1, we modified the BAI Benchmark Case to use the inputs used by KCPL for its calibration MIDAS run. In the BAI Calibration Case 1, the annual energy production for KCPL's nuclear and coal generation was within ±1.0% of the KCPL calibration MIDAS run and within ±0.5% of KCPL's actual nuclear and coal energy production. KCPL did not provide any further comparisons regarding its calibration. However, the BAI calibration case MWh for these two categories were closer to KCPL's actual amounts than KCPL's calibration run. Schedule NLP-3 provides more detail on these comparisons.

Q HAVE YOU ALSO PERFORMED A CALIBRATION TO ANOTHER HISTORICAL PERIOD?

A Yes. I will refer to this as the "BAI Calibration Case 2." For the BAI Calibration Case 2, we modified the BAI Benchmark Case to use the inputs reflecting KCPL's actual operations from 10/1/2010 through 3/31/2011. This period reflects a six month span when Iatan Unit 2 was in service but prior to the floods that disrupted KCPL's normal

operations during the summer of 2011. In the BAI Calibration Case 2, the annual energy production for KCPL's nuclear and coal generation was within ±1.3% of actual KCPL nuclear and coal energy production. Furthermore, total sales volumes were within ±0.6% of actual KCPL sales volumes during this period. Schedule NLP-4 provides more detail on these comparisons.

Q WHAT DO YOU CONCLUDE REGARDING THE BENCHMARKING ANALYSIS OF REALTIME PERFORMED BY BAI UNDER YOUR DIRECTION AND SUPERVISION?

A When utilizing the same inputs as KCPL, the RealTime program provides native load fuel and purchased power expense results nearly identical to those of the MIDAS program used by KCPL. As such, RealTime can be reasonably utilized to calculate the impact that changes to the input assumptions used by KCPL will have on KCPL's native load fuel and purchased power expense.

Non-Proprietary

Kansas City Power & Light
Case No. ER-2012-0174
Production Cost Modeling (Fuel and Purchased Power Cost and Off-System Sales Margins Adjustments Proposed by MECG

	Increase/(Decrease) vs. BAI Benchmark	Net Fuel Cost	Gross Fuel Cost	OSS Revenues	Coal Fuel Cost	Nuclear Fuel Cost	CCGT and CGT Cost	Purchased Power Cost	Contract Demand Cost
KCP&L MIDAS Case-in-Chief	$186,994								
BAI Benchmark	$ -								
BAI Adjustment 1 - Iatan 2 EFOR	($1,426,612)								
BAI Fuel Run With Sales	($71,304,092)								

	Native Load MWh	Gross MWh	OSS MWh	Coal MWh	Nuclear MWh	CCGT and CGT MWh	Purchased Power MWh	Renewables MWh
KCP&L MIDAS Case-in-Chief								
BAI Benchmark								
BAI Adjustment 1 - Iatan 1 EFOR								
BAI Fuel Run With Sales								

Notes:
Gross is summation of all coal, nuclear, gas, oil, renewables, and purchased power (both spot and firm)
Net is the difference of gross and off system sales

Non-Proprietary

Kansas City Power & Light
Case No. ER-2012-0174
Comparison of BAI Benchmark Case to KCP&L Normalized Test Year Production Cost Run
All Numbers in MWh

		January	February	March	April	May	June	July	August	September	October	November	December	Total	Percent Difference BAI vs. MIDAS
Wolf Creek	MIDAS														0.7%
	BAI														
	MIDAS-BAI														
Iatan	MIDAS														0.8%
	BAI														
	MIDAS-BAI														
Lacygne	MIDAS														1.5%
	BAI														
	MIDAS-BAI														
Montrose	MIDAS														-22.1%
	BAI														
	MIDAS-BAI														
Hawthorn 5	MIDAS														0.0%
	BAI														
	MIDAS-BAI														
CCGT	MIDAS														-55.2%
	BAI														
	MIDAS-BAI														
Gas CT	MIDAS														8.0%
	BAI														
	MIDAS-BAI														
Oil CT	MIDAS														-100.0%
	BAI														
	MIDAS-BAI														
Wind	MIDAS														0.0%
	BAI														
	MIDAS-BAI														
Purchases	MIDAS														2.9%
	BAI														
	MIDAS-BAI														
Sales	MIDAS														0.1%
	BAI														
	MIDAS-BAI														
Nuclear	MIDAS														0.7%
	BAI														
	MIDAS-BAI														
Coal	MIDAS														-0.6%
	BAI														
	MIDAS-BAI														
KCP&L Gen	MIDAS														-0.3%
	BAI														
	MIDAS-BAI														
Net	MIDAS														0.0%
	BAI														
	MIDAS-BAI														

Source:
MIDAS data revcieved in response to MPSC data request 42. Filename MPSC_20120227-0042-Att-MPSC0042_HC--COS--KCPL - August 2012 - MO Fuel Operations - 20120127 - DETAIL.xlsx

Schedule NLP-2

Non-Proprietary

Kansas City Power & Light
Case No. ER-2012-0174
BAI Calibration Case 1 - January 2012 Through March 2012
All Numbers in MWh

		Jan-12	Feb-12	Mar-12	Total	Percent Difference BAI vs. Actual
Wolf Creek	Actual					7.5%
	BAI					
	Actual-BAI					
Iatan	Actual					7.5%
	BAI					
	Actual-BAI					
Lacygne	Actual					3.4%
	BAI					
	Actual-BAI					
Montrose	Actual					-36.2%
	BAI					
	Actual-BAI					
Hawthorn 5	Actual					3.5%
	BAI					
	Actual-BAI					
CCGT	Actual					-100.0%
	BAI					
	Actual-BAI					
Gas CT	Actual					-100.0%
	BAI					
	Actual-BAI					
Oil CT	Actual					-100.0%
	BAI					
	Actual-BAI					
Wind	Actual					0.0%
	BAI					
	Actual-BAI					
Purchases	Actual					141.9%
	BAI					
	Actual-BAI					
Sales	Actual					6.4%
	BAI					
	Actual-BAI					
Nuclear	Actual					7.5%
	BAI					
	Actual-BAI					
Coal	Actual					0.0%
	BAI					
	Actual-BAI					
KCP&L Gen	Actual					0.5%
	BAI					
	Actual-BAI					
Nuclear	Actual					7.9%
	MIDAS					
	Actual-MIDAS					
Coal	Actual					-0.9%
	MIDAS					
	Actual-MIDAS					

Note:
Company response to MECG data request 2.31 contained incomplete information for March 2012.
Percent differences calculated for sales and purchases do not include March 2012.
Sources:
Acutal historical data received in response to MECG data request 2.31.
MIDAS comparison data received in response to MECG data request 2.1

Non-Proprietary

Kansas City Power & Light
Case No. ER-2012-0174
BAI Calibration Case 2 October 2010 Through March 2011
All Numbers in MWh

		Oct-10	Nov-10	Dec-10	Jan-11	Feb-11	Mar-11	Total	Percent Difference BAI vs. Actual
Wolf Creek	Actual								3.5%
	BAI								
	Actual-BAI								
Iatan	Actual								4.5%
	BAI								
	Actual-BAI								
Lacygne	Actual								3.1%
	BAI								
	Actual-BAI								
Montrose	Actual								-9.6%
	BAI								
	Actual-BAI								
Hawthorn 5	Actual								0.6%
	BAI								
	Actual-BAI								
CCGT	Actual								-166.9%
	BAI								
	Actual-BAI								
Gas CT	Actual								7.4%
	BAI								
	Actual-BAI								
Oil CT	Actual								-100.0%
	BAI								
	Actual-BAI								
Wind	Actual								0.0%
	BAI								
	Actual-BAI								
Purchases	Actual								52.8%
	BAI								
	Actual-BAI								
Sales	Actual								0.6%
	BAI								
	Actual-BAI								
Nuclear	Actual								3.5%
	BAI								
	Actual-BAI								
Coal	Actual								0.7%
	BAI								
	Actual-BAI								
KCP&L Gen	Actual								1.3%
	BAI								
	Actual-BAI								

Sources:

Acutal historical data received in response to MECG data request 2.31.