Exhibit No.:	
Issues:	Revenue Requirement
Witness:	Nicholas L. Phillips
Type of Exhibit:	Direct Testimony
Sponsoring Parties:	Ag Processing Inc; Federal Executive Agencies; Midwest Energy Consumer's Group; Midwest Energy Users' Association; and Missouri Industrial Energy Consumers
Case No.:	ER-2012-0175
Date Testimony Prepared:	August 9, 2012

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of KCP&L Greater Missouri Operations Company's Request for Authority to Implement a General Rate Increase for Electric Service	**Case No. ER-2012-0175** Tracking No. YE-2012-0405

Direct Testimony and Schedules of

Nicholas L. Phillips

On behalf of

Ag Processing Inc
Federal Executive Agencies
Midwest Energy Consumer's Group
Midwest Energy Users' Association
Missouri Industrial Energy Consumers

NON-PROPRIETARY VERSION

August 9, 2012

BRUBAKER & ASSOCIATES, INC.

MIEC/MECG Exhibit No. 429
Date 10-29-12 Reporter KF
File No. ER-2012-0175

Project 9594

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of KCP&L Greater Missouri Operations Company's Request for Authority to Implement a General Rate Increase for Electric Service	)	**Case No. ER-2012-0175** Tracking No. YE-2012-0405

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 Ag Processing Inc; Federal Executive Agencies; Midwest Energy Consumer's Group; Midwest Energy Users' Association; and Missouri Industrial Energy Consumers 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-2012-0175.

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 8th 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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In the Matter of KCP&L Greater Missouri Operations Company's Request for Authority to Implement a General Rate Increase for Electric Service	)))))	**Case No. ER-2012-0175** Tracking No. YE-2012-0405

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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 Brubaker & Associates, Inc., 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 and Kansas City Power & Light Case No. ER-2012-0174. 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 Ag Processing Inc; Federal Executive Agencies; Midwest Energy Consumer's Group; Midwest Energy Users' Association; and Missouri Industrial Energy Consumers (collective referred to as "Industrials"). These companies purchase substantial amounts of electricity from KCP&L Greater Missouri Operations Company ("GMO" or "Company") and the outcome of this proceeding will have an impact on their cost of electricity.

Q WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A My testimony addresses the level of native load fuel and purchased power expense, and off-system sales that GMO proposes to include in its base rate revenue requirement. Specifically, I address the Iatan Unit 2 forced outage rate assumption used by GMO in its fuel expense, purchased power expense, and off-system sales estimate.

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

Q PLEASE SUMMARIZE YOUR CONCLUSIONS AND RECOMMENDATIONS.

A I recommend that the Missouri Public Service Commission ("Commission") reduce GMO's proposed base rate level of fuel expense, purchased power expense, and

off-system sales by $0.581 million to correct for the unreasonable forced outage rate assumption GMO used for Iatan Unit 2.

II. FUEL EXPENSE, PURCHASED POWER EXPENSE AND OFF-SYSTEM SALES

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

A GMO's fuel expense, purchased power expense, and off-system sales consists of GMO's total fuel and purchased power costs for native load and off-system energy sales less off-system energy sales revenues, as estimated using production cost modeling.

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

A It should be set on the same basis as the remainder of GMO's revenue requirement. Specifically, it should be set in this proceeding based on GMO'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 GMO'S PROPOSED LEVEL OF NATIVE LOAD FUEL AND PURCHASED POWER EXPENSE.

A I reviewed the direct testimony and schedules of GMO witnesses Crawford and Blunk concerning GMO's proposed fuel expense, purchased power expense, and

off-system sales. I also reviewed GMO'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 GMO 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 fuel expense, purchase power expense, and off-system sales from updating and correcting the inputs GMO used in its own MIDAS production cost model. Finally, I applied my experience to the information available in considering the reasonableness of GMO's proposed level of fuel expense, and purchased power expense, and off-system sales.

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 GMO. 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 GMO's last two general electric rate proceedings in order to examine the reasonableness of GMO's projections for its fuel expense and purchased power expense.

I have used the RealTime software in this proceeding to estimate how GMO's proposed level of fuel expense, purchased power expense, and off-system sales will

change when I update and correct certain assumptions made by GMO. It is my understanding that the Commission Staff is again intending to use the RealTime software in this proceeding.

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 GMO used in its MIDAS model runs to determine normalized test year fuel expense, purchased power expense and off-system sales. This RealTime case, which I will refer to as the "BAI Benchmark Case," projected a native load fuel and purchased power expense within $0.446 million of the fuel and purchased power expense projected by GMO 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 Benchmark Case and how its estimate of fuel expense, purchased power expense, and off-system sales compare to that of GMO's MIDAS run for the normalized test year.

Q HAVE YOU IDENTIFIED ANY INPUTS IN GMO'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, GMO'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

[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.

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 $0.581 million decrease in GMO's proposed native load fuel and purchased power expense. This is documented in my Schedule NLP-1. Please refer to the direct testimony of my colleague, Greg R. Meyer, for an allocation of this adjustment between the two operating jurisdictions of GMO.

III. CONCLUSIONS AND RECOMMENDATIONS

Q PLEASE SUMMARIZE YOUR CONCLUSIONS AND RECOMMENDATIONS.

A I recommend that the Commission reduce GMO's proposed base rate level of fuel expense, purchased power expense, and off-system sales by $0.581 million to correct for the unreasonable forced outage rate assumption GMO used for Iatan Unit 2.

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

degree requirements. 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 GMO used in its production cost model. We then used these inputs to create a database to as closely as possible match the inputs that GMO 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 GMO?

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 *** *** fuel expense, purchased power expense, and off-system sales yielded from the GMO normalized test year MIDAS production cost simulation model run. Thus, in aggregate, the BAI Benchmark Case results are within approximately $446,000 or 0.24% of the GMO normalized test year MIDAS run. In addition, as also detailed in Schedule NLP-2, the annual MWh of energy production at GMO's coal stations in the BAI Benchmark Case is within ±0.4% of the levels that are in GMO's normalized test year MIDAS run. Furthermore, annual MWh generated by gas-fired generation is within 1.1%, annual volumes of non-firm energy purchases are within

1.4% and annual volumes of non-firm energy sales are within 2.4%. However, this difference does not have a significant impact on predicting fuel expense, purchased power expense, and off-system sales since fuel expense, purchased power expense and off-system sales, in the aggregate, is within ±0.24% and coal station MWh production is all within ±0.4%.

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

Non-Proprietary

Kansas City Power & Light - Greater Missouri Operations
Case No. ER-2012-0175
Production Cost Modeling (Fuel Expense, Purchased Power Expense, and Off-System Sales) Adjustments Proposed by Industrials

	Increase/(Decrease) vs. BAI Benchmark	Net Fuel Cost	Gross Fuel Cost	OSS Revenues	Coal Fuel Cost	Natural Gas and Oil Cost	Purchased Power Cost
GMO MIDAS Case-in-Chief	($445,618)						
BAI Benchmark	$ -						
BAI Adjustment 1 - Iatan 2 EFOR	($581,360)						

	Native Load MWh	Gross MWh	OSS MWh	Coal MWh	CT and GT MWh	Purchased Power MWh
GMO MIDAS Case-in-Chief						
BAI Benchmark						
BAI Adjustment 1 - Iatan 2 EFOR						

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

Non-Proprietary

Kansas City Power & Light - Greater Missouri Operations

Case No. ER-2012-0175

Comparison of BAI Benchmark Case to GMO 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
Jeffery Energy Center	MIDAS														-3.0%
	BAI														
	MIDAS-BAI														
Sibley	MIDAS														0.1%
	BAI														
	MIDAS-BAI														
Iatan	MIDAS														0.1%
	BAI														
	MIDAS-BAI														
Lake Road 4	MIDAS														1.2%
	BAI														
	MIDAS-BAI														
Oil CT	MIDAS														0.0%
	BAI														
	MIDAS-BAI														
Natural Gas - Steam & CT	MIDAS														-1.1%
	BAI														
	MIDAS-BAI														
Coal	MIDAS														-0.4%
	BAI														
	MIDAS-BAI														
Sales	MIDAS														-2.2%
	BAI														
	MIDAS-BAI														
Purchases	MIDAS														0.9%
	BAI														
	MIDAS-BAI														
GMO Generation	MIDAS														-0.4%
	BAI														
	MIDAS-BAI														
Net	MIDAS														0.0%
	BAI														
	MIDAS-BAI														

Source:
MIDAS data revcieved as workpaper to Burton Crawford's Direct Testimony in Case No. ER-2012-0175. Filename "GMO TestYear COS FI - HC.xlsx"