Exhibit No.:
Issue: Need Analysis

Witness: Lena M. Mantle
Sponsoring Party: MO PSC Staff
Type of Exhibit: Rebuttal Testimony
Case No.: EA-2006-0309
Date Testimony Prepared: April 4, 2006

MISSOURI PUBLIC SERVICE COMMISSION

UTILITY OPERATIONS DIVISION

REBUTTAL TESTIMONY

OF

LENA M. MANTLE

AQUILA, INC.

CASE NO. EA-2006-0309

Jefferson City, Missouri
April 2006

REPLACEMENT
May 2006

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of the Application of Aquila, Inc. for Permission and Approval and a Certificate of Public Convenience and Necessity Authorizing it to Acquire, Construct, Install, Own, Operate, Maintain, and otherwise Control and Manage, and otherwise Control and Manage Electrical Production and Related Facilities in Unincorporated Areas of Cass County, Missouri Near the Town of Peculiar	)	Case No. EA-2006-0309

AFFIDAVIT OF LENA M. MANTLE

STATE OF MISSOURI)
) **ss**
COUNTY OF COLE)

Lena M. Mantle, of lawful age, on her oath states: that she has participated in the preparation of the following Rebuttal Testimony in question and answer form, consisting of 9 pages of Rebuttal Testimony to be presented in the above case, that the answers in the following Rebuttal Testimony were given by her; that she has knowledge of the matters set forth in such answers; and that such matters are true to the best of her knowledge and belief.

Lena M. Mantle

Lena M. Mantle

Subscribed and sworn to before me this 3rd day of April, 2006.

ROSEMARIE RIEDL
MY COMMISSION EXPIRES
June 1, 2009
NOTARY SEAL
#05509638
COLE COUNTY
NOTARY PUBLIC, STATE OF MISSOURI

Rosemarie Riedl

Notary Public

My commission expires June 1, 2009

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REBUTTAL TESTIMONY

OF

LENA M. MANTLE

AQUILA, INC.

CASE NO. EA-2006-0309

Q. Please state your name and business address.

A. My name is Lena M. Mantle and my business address is Missouri Public Service Commission, P. O. Box 360, Jefferson City, Missouri 65102.

Q. What is your present position with the Missouri Public Service Commission (Commission)?

A. I am the Manager of the Energy Department, Utility Operations Division.

Q. Would you please review your educational background and work experience?

A. I received a Bachelor of Science Degree in Industrial Engineering from the University of Missouri, at Columbia, in May 1983. I joined the Commission Staff (Staff) in August 1983. I became the Supervisor of the Engineering Section of the Energy Department in August, 2001. In July 2005, I was named the Manager of the Energy Department. I am a registered Professional Engineer in the State of Missouri.

My work here at the Commission has included the review of resource plans of investor owned electric utilities since 1984. I was actively involved in the writing of the Commission's Chapter 22, Electric Resource Planning rules (Chapter 22). I participated in the review of all of the utility filings under that rule including the filings made by

UtiliCorp United, Inc. (which served the area Aquila now serves as Aquila Networks – MPS) and St. Joseph Light and Power Company (which served the area Aquila now serves as Aquila Networks – L & P). After the Commission issued a waiver to the electric utilities from filing under Chapter 22 in 1999, I have been present at all but one of the semi-annual resource plan update meetings that UtiliCorp United, Inc./Aquila Networks – MPS (MPS) and St. Joseph Light & Power Company/Aquila Networks – L & P (L&P) has had with Staff and Office of Public Counsel (OPC).

Q. Have you previously filed testimony before this Commission?

A. Yes, I have. Please see Schedule 1 attached to this testimony for a list of cases in which I have previously filed testimony. In two of these cases, Case Nos. EF-2003-0465 and ER-2005-0436, I filed testimony regarding the resource plans of Aquila, Inc. (Aquila).

In Case No. EF-2003-0465, I testified that the forecasted needs and available capacity, as provided to the Staff, showed that MPS had a need to address the need for additional capacity through 2013. My testimony was that for Aquila to have the option to build to meet these requirements or receive the best possible terms in a purchase power contract, Aquila had a need to maintain or have access to capital investment.

In Aquila's recent rate Case No. ER-2006-0436, I testified that Aquila's optimal resource plan would have been to build not three combustion turbines such as those at South Harper to meet its needs, but five combustion turbines (CTs).

Executive Summary

Q. Would you please summarize your testimony?

A. My rebuttal testimony responds to the direct testimony in this case of Aquila witness Jerry G. Boehm and in doing so provides Staff's position on why Aquila needs the three combustion turbines that have a combined capacity of 315 MW at the South Harper site. My testimony also addresses the appropriateness of this resource addition by Aquila to serve its customers. Mr. Boehm's direct testimony provides Aquila's position on the need for the South Harper plant (page 2, line 17 through page 6, line 15).

Q. Are you testifying on whether the South Harper site is a reasonable place to locate these three turbines and the associated generation, transmission and control facilities?

A. No. Staff witness Warren Wood is providing testimony regarding the site selection. It is my testimony that Aquila needs the three combustion turbines (CTs) that it chose to build at the South Harper site. My testimony addresses Aquila's need for the capacity and energy from three CTs, not the location of the three CTs.

Need for Combustion Turbines

Q. Why does Aquila need the three CTs?

A. Aquila needs capacity to replace the purchase power agreement (PPA), which expired May 31, 2005, that it had with the Calpine Aries power plant. In that contract, Calpine supplied energy and up to 500 megawatts (MW) of capacity in the summer and 320 MW of capacity in the winter from the Aries power plant in Pleasant Hill.

In addition to the need to replace the Aries PPA, Aquila also needs capacity and energy to meet growth in its Missouri customers' electrical needs.

Resource Planning Process

Q. Was there a Staff resource planning review process when Aquila made its decision to build the three CTs?

A. At the time that Aquila made the decision to build the three CTs, the electric utilities in Missouri were meeting with the Staff and OPC twice a year to update us on its resource needs and its plans to meet those resource needs. The waiver also required the utilities to submit information to Staff and OPC when the utility made a commitment to add additional capacity, either through a purchase power agreement, the purchase of a plant, or the firm commitment to build a plant.

Since Aquila had a waiver from the resource planning rules, the only information supplied to Staff was the presentation material. Staff provided feedback based on the presentation; typically, in the form of comments during the meetings. Staff did not perform a formal or informal review of the resource planning updates presented at the meetings. When Staff believed that the situation warranted something more formal, it would send a letter to Aquila after the meeting that expressed Staff's concerns.

This process has changed since the waiver to Chapter 22 ended in December 2005. Aquila is scheduled to file its resource plan, as required by Chapter 22 in February 2007. However, Aquila has made a commitment to Staff to continue the semi-annual meetings until it files its resource plan. The most recent resource planning update meeting with Staff and OPC was held on March 9, 2006.

Q. In these meetings did Aquila identify the process that it used to determine how it would replace the Aries PPA capacity and energy?

A. Yes. Aquila began the process by issuing a Request for Proposals (RFP) in 2001 to get bids for capacity to replace the Aries contract. While it was analyzing the bids, the market changed drastically causing Aquila to take a prolonged time to do an extensive evaluation of the bids. After discussions with Staff in the update meetings regarding the problems with choosing an appropriate resource, Aquila re-issued the RFP for capacity in 2003. Reissuing the RFP reduced the time available to Aquila to pursue different options but, given the market changes, both Aquila and Staff believed that doing so was appropriate to get the most reliable and least cost power for Aquila's customers.

A. What was the result of the analysis of the responses to the 2003 RFP?

Q. The first time any of the results from the 2003 RFP were disclosed to Staff was in Aquila's semi-annual resource plan meeting with Staff and OPC on June 26, 2003. Aquila told Staff and OPC that an "undisclosed" bidder had offered it an excellent bid for a PPA for 600 MW but it could not disclose much about the bid at that time. Because this PPA would be more than enough to cover its needs, Aquila believed that it did not need to pursue any other capacity. Staff subsequently learned from Aquila that the bidder withdrew its offer to Aquila.

On January 27, 2004, Aquila again met with Staff, this time not in a resource planning meeting, but in a meeting to let Staff know about its power supply acquisition process for the next five years. In this meeting, Aquila's preferred/proposed resource plan over the short term was to build three combustion turbines and to enter into three-to-five year PPAs for the remainder of its needs based on the response to its 2003 RFP.

Aquila met with Staff on February 9, 2004 for its semi-annual resource planning update. This update, which took into consideration events over a twenty year time

horizon, showed that Aquila's preferred plan was to build three CTs in 2005, enter into a 200 MW PPA in 2005, and purchase a small amount of capacity on the market. Between 2005 and 2009, Aquila would meet its growth through purchases on the market, build a CT in 2009 and another in 2010. It also called for Aquila to pursue base load capacity for 2010.

At the next semi-annual update on July 9, 2004, Aquila told Staff that it had found a very good 75 MW PPA with Nebraska Public Power District (NPPD), but it was still pursuing the other PPAs for which it had received bids.

At subsequent resource planning update meetings, Aquila provided updates on the three CTs and Aquila's pursuit of PPAs. Other than the PPA with NPPD, Aquila has not been able to enter into a PPA with a duration of more than a few months.

Q. So is it correct to say that these three CTs are a part of Aquila's plan to replace the Aries capacity?

A. Yes, that is correct.

Staff's Position

Q. Do you agree with Aquila's analysis that supports the need for these three CTs?

A. Yes, I do agree that these three CTs are an appropriate choice to meet the resource needs of Aquila. In reaching this determination, I reviewed the information from the presentations and my notes from the Aquila resource planning meetings. I also reviewed the information and testimony provided by Aquila witness Jerry G. Boehm.

Q. Are you solely relying on Aquila's analysis as a basis for your recommendation to the Commission that Aquila does need these three CTs?

A. No, I am not. In addition to Aquila's analysis that I have reviewed, the building of these three CTs meets two reasonableness criteria.

Q. What are these reasonableness criteria?

A. The first of these is MPS's unique load type. Compared to the other investor owned electric utilities in Missouri, and even L&P, the ratio of MPS's residential class annual energy usage to its industrial class usage is very high as shown in the table below:

	Ratio
Aquila Networks – MPS	3.05
Aquila Networks – L&P	1.28
AmerenUE	2.10
The Empire District Electric Company	1.68
Kansas City Power and Light Company	1.43

The high percentage of the total load that is due to the residential class can also be seen in the pie charts shown in Schedule 2 to my testimony.

In addition, Staff witness Warren Wood testifies to the rapid growth in residential load in Cass County in his rebuttal testimony.

Q. Why does this make a difference in what type of capacity Aquila adds?

A. Residential customers are very weather sensitive and have a highly variable load. As a class they typically have a low annual "load factor" where load factor is measured as average load divided by peak load. Industrial customers on the other hand, typically are high load factor customers. Their loads are more constant over time.

A utility should build capacity to match its loads. A coal plant is expensive to build, compared to a peaking facility, cannot follow load variations easily and has startup and running time operating restrictions. Because of these constraints, a coal plant is best used to serve base load and therefore, it should not be built to follow highly variable load

like residential load. There is volatility in the price of natural gas needed to run CTs but, they are less expensive to build than coal plants, can follow the residential load requirements and CTs can be started quickly and shut down quickly because they do not have as restrictive startup and running time requirements.

Q. What is the other reasonableness criteria?

A. The other reasonableness check is to look at what type of capacity and energy the CTs replaced. The CTs replaced a PPA that, while it was on a combine cycle plant, had a different capacity in the summer than it did in the winter. The contract also allowed Aquila to request starts on the plant as if it were CT capacity.

Q. Doesn't MPS also need some base load capacity?

A. It is possible. As a result of the 2003 RFP, Aquila did enter into a long term base load capacity 75 MW PPA with NPPD in 2004. In 2003, Aquila would not have had enough time to build additional base load capacity to meet the need for capacity for 2005 and the NPPD bid was the only base load bid that was offered in response to Aquila's RFP.

Schedule 3 to my testimony shows a list of the combined resources of Aquila Networks – MPS and Aquila Networks – L&P, and a general designation of each type of resource. I've shown the combined list because Aquila performs resource planning for its Missouri divisions combined. This table shows that the combined divisions have 969 MW of base load capacity. They also have an additional PPA with NPPD for base load capacity for 100 MW. So combined, Aquila's Missouri divisions currently have 1069 MW of base load capacity. A detailed resource planning model needs to be run that

includes all of these resources to accurately determine what type of additional resources are most cost-effective in the long run for Aquila's ratepayers.

Aquila will be a partial owner of Iatan 2 that is scheduled to be on line in 2010. In recent resource planning update meetings Staff has urged Aquila to continue to look for future base load capacity additions to replace the NPPD base load PPAs.

Q. So is it Staff's position that Aquila needs the three CTs that Aquila chose to build at South Harper and that they are an appropriate generation resource for Aquila to be adding to in order continue to be able to meet growth in its customers' electrical needs?

A. Yes, it is. But again, I am not testifying on Aquila's site selection of the South Harper location.

Q. Does this conclude your rebuttal testimony?

A. Yes, it does.

PREVIOUS TESTIMONY OF

LENA M. MANTLE

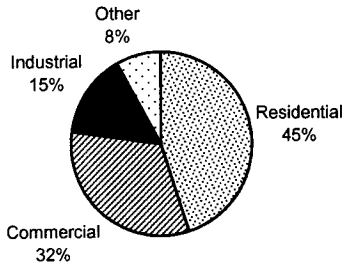
CASE NUMBER	TYPE OF FILING	ISSUE
ER-84-105	Direct	Demand-Side Update
ER-85-128, et. al	Direct	Demand-Side Update
EO-90-101	Direct, Rebuttal & Surrebuttal	Weather Normalization of Sales; Normalization of Net System
ER-90-138	Direct	Normalization of Net System
EO-90-251	Rebuttal	Promotional Practice Variance
EO-91-74, et. al.	Direct	Weather Normalization of Class Sales; Normalization of Net System
ER-93-37	Direct	Weather Normalization of Class Sales; Normalization of Net System
ER-94-163	Direct	Normalization of Net System
ER-94-174	Direct	Weather Normalization of Class Sales; Normalization of Net System
EO-94-199	Direct	Normalization of Net System
ET-95-209	Rebuttal & Surrebuttal	New Construction Pilot
ER-95-279	Direct	Normalization of Net System
ER-97-81	Direct	Weather Normalization of Class Sales; Normalization of Net System; TES Tariff
EO-97-144	Direct	Weather Normalization of Class Sales; Normalization of Net System
ER-97-394, et. al.	Direct, Rebuttal & Surrebuttal	Weather Normalization of Class Sales; Normalization of Net System; Energy Audit Tariff

Rebuttal Testimony
of Lena Mantle

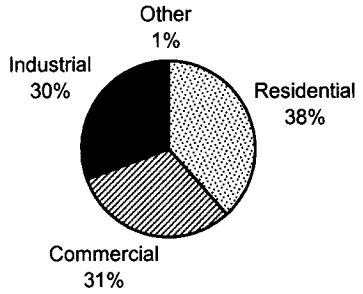
EM-97-575	Direct	Normalization of Net System
EM-2000-292	Direct	Normalization of Net System; Load Research
ER-2001-299	Direct	Weather Normalization of Class Sales; Normalization of Net System
EM-2000-369	Direct	Load Research
ER-2001-672	Direct & Rebuttal	Weather Normalization of Class Sales; Normalization of Net System
ER-2002-1	Direct & Rebuttal	Weather Normalization of Class Sales; Normalization of Net System
ER-2002-424	Direct	Derivation of Normal Weather
EF-2003-465	Rebuttal	Resource Planning
ER-2004-0570	Direct	Reliability Indices
ER-2004-0570	Rebuttal & Surrebuttal	Energy Efficiency Programs and Wind Research Program
EO-2005-0263	Live Testimony	DSM Programs and Integrated Resource Planning
EO-2005-0329	Live Testimony	DSM Programs and Integrated Resource Planning
ER-2005-0436	Direct	Resource Planning
ER-2005-0436	Rebuttal	Low-Income Weatherization and Energy Efficiency Programs
ER-2005-0436	Surrebuttal	Low-Income Weatherization and Energy Efficiency Programs; Resource Planning

MWh Sales by Revenue Class 2004

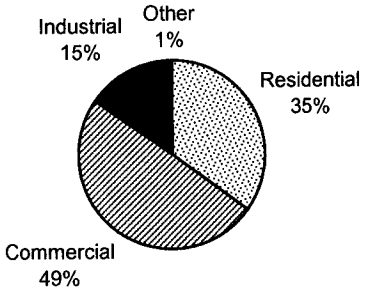
Aquila Networks - MPS



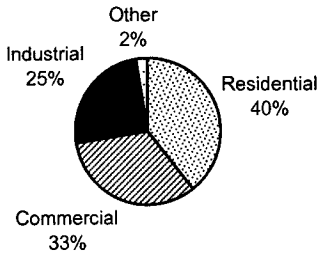
Aquila Networks - L&P



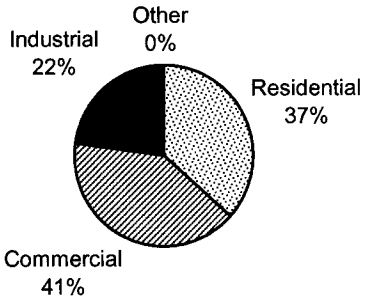
Kansas City Power & Light Company



Empire District Electric Co.



AmerenUE



SCHEDULE 2

Source : 2004 Annual Reports

EXISTING RESOURCES

Base

Division	Unit Name	Net Capacity	Fuel
MPS	Sibley 1	54	Coal
MPS	Sibley 2	54	Coal
MPS	Sibley 3	401	Coal
MPS	Jeffrey EC 1	58	Coal
MPS	Jeffrey EC 2	58	Coal
MPS	Jeffrey EC 3	58	Coal
MPS	Ralph Green 3	71	Gas
L&P	Iatan 1	118	Coal
L&P	Lake Road 4	97	Coal/Gas
	TOTAL:	969	

Intermediate/Peaking

Division	Unit Name	Net Capacity	Fuel
MPS	Ralph Green 3	71	Gas
MPS	Greenwood 1	58	Gas/Oil
MPS	Greenwood 2	58	Gas/Oil
MPS	Greenwood 3	58	Gas/Oil
MPS	Greenwood 4	58	Gas/Oil
MPS	Nevada	20	Oil
MPS	KCI 1	17	Gas
MPS	KCI 2	17	Gas
L&P	Lake Road 1	22	Gas/Oil
L&P	Lake Road 2	27	Coal/Gas/Oil
L&P	Lake Road 3	11	Gas/Oil
L&P	Lake Road 5 CT	69	Gas/Oil
L&P	Lake Road 6 JE	21	Oil
L&P	Lake Road 7 JE	22	Oil
	TOTAL:	529	