

Exhibit No.:

Issues: 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**

**FILED<sup>3</sup>**

MAY 11 2006

**REBUTTAL TESTIMONY**

**OF**

Missouri Public  
Service Commission

**LENA M. MANTLE**

**AQUILA, INC.  
D/B/A AQUILA NETWORKS - MPS**

**CASE NO. EA-2006-0309**

Jefferson City, Missouri  
April 2006

**\*\*Denotes Highly Confidential Information\*\***

**NP**

Exhibit No. 17  
Case No(s) EA-2006-0309  
Date 4-26-06 Rptr RF

**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

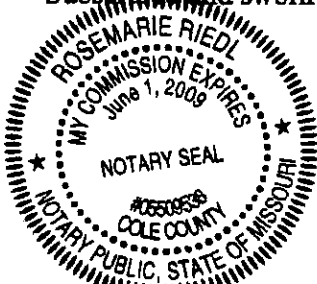
**AFFIDAVIT OF LENA M. MANTLE**


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

Subscribed and sworn to before me this 3<sup>rd</sup> day of April, 2006.



  
Notary Public

My commission expires

June 1, 2009

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Rebuttal Testimony  
of Lena Mantle

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

8 Q. Have you previously filed testimony before this Commission?

9 A. Yes, I have. Please see Schedule 1 attached to this testimony for a list of  
10 cases in which I have previously filed testimony. In two of these cases, Case Nos. EF-  
11 2003-0465 and ER-2005-0436, I filed testimony regarding the resource plans of Aquila,  
12 Inc. (Aquila).

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

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

21 **Executive Summary**

22 Q. Would you please summarize your testimony?

Rebuttal Testimony  
of Lena Mantle

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

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

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

15                               **Need for Combustion Turbines**

16          Q.     Why does Aquila need the three CTs?

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

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

**Resource Planning Process**

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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?

Rebuttal Testimony  
of Lena Mantle

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

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

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

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

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



Rebuttal Testimony  
of Lena Mantle

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

9 At subsequent resource planning update meetings, Aquila provided updates on the  
10 \*\*  
11 \*\*

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

14 A. Yes, that is correct.

15 **Staff's Position**

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

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

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

**NP**

Rebuttal Testimony  
of Lena Mantle

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

3           Q.     What are these reasonableness criteria?

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

	<u>Ratio</u>
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

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

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

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

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

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

Rebuttal Testimony  
of Lena Mantle

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

5 Q. What is the other reasonableness criteria?

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

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

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

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

Rebuttal Testimony  
of Lena Mantle

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

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

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

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

12       Q.     Does this conclude your rebuttal testimony?

13       A.     Yes, it does.

Rebuttal Testimony  
of Lena Mantle

**PREVIOUS TESTIMONY OF**

**LENA M. MANTLE**

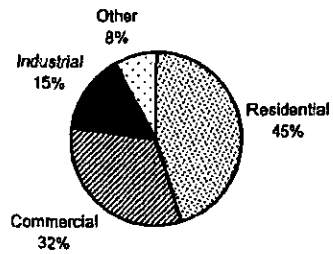
<b><u>CASE NUMBER</u></b>	<b><u>TYPE OF FILING</u></b>	<b><u>ISSUE</u></b>
ER-84-105	Direct	Demand-Side Update
ER-85-128, et. al	Direct	Demand-Side Update
EO-90-101	Direct, Rebuttal & Surrebuttal	Weather Normalization of Sales; Normalization of Net System
ER-90-138	Direct	Normalization of Net System
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

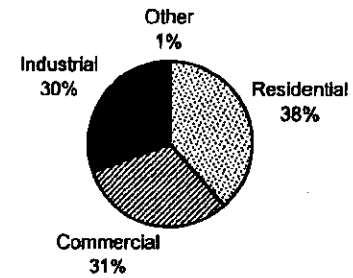
EM-97-575	Direct	Normalization of Net System
EM-2000-292	Direct	Normalization of Net System; Load Research
ER-2001-299	Direct	Weather Normalization of Class Sales; Normalization of Net System
EM-2000-369	Direct	Load Research
ER-2001-672	Direct & Rebuttal	Weather Normalization of Class Sales; Normalization 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

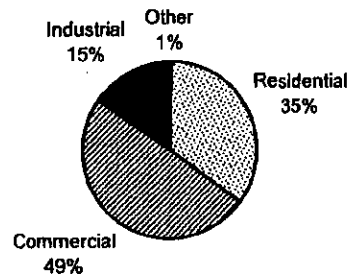
**Aquila Networks - MPS**



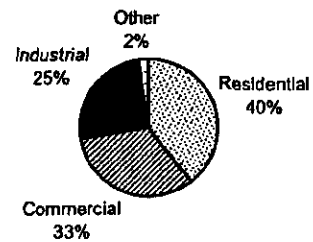
**Aquila Networks - L&P**



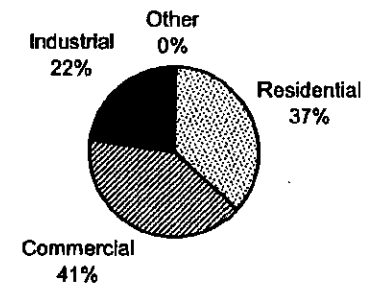
**Kansas City Power & Light Company**



**Empire District Electric Co.**



**AmerenUE**



## EXISTING RESOURCES

### Base

<u>Division</u>	<u>Unit Name</u>	<u>Net Capacity</u>	<u>Fuel</u>
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

<u>Division</u>	<u>Unit Name</u>	<u>Net Capacity</u>	<u>Fuel</u>
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	