Exhibit No.:
Issues: Resource Plans
Witness: Lena M. Mantle
Sponsoring Party: MoPSC Staff
Type of Exhibit: Rebuttal Testimony
Case No.: EF-2003-0465
Date Testimony Prepared: September 10, 2003

MISSOURI PUBLIC SERVICE COMMISSION

UTILITY OPERATIONS DIVISION

REBUTTAL TESTIMONY

OF

LENA M. MANTLE

CASE NO. EF-2003-0465

AQUILA, INC.

Jefferson City, Missouri
September, 2003

** Denotes Highly Confidential Information **

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BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

IN THE MATTER OF THE APPLICATION OF AQUILA, INC. FOR AUTHORITY TO ASSIGN, TRANSFER, MORTGAGE OR ENCUMBER ITS FRANCHISE, WORKS OR SYSTEM	)))))	Case No. EF-2003-0465

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 written Rebuttal Testimony in question and answer form, consisting of __8___ pages of testimony to be presented in the above case, that the answers in the attached written 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 9th day of September, 2003.

DAWN L. HAKE
Notary Public – State of Missouri
County of Cole
My Commission Expires Jan 9, 2005

Dawn L. Hake
Notary Public

My commission expires _____

REBUTTAL TESTIMONY

OF

LENA M. MANTLE

AQUILA, INC.

EF-2003-0465

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 Utility Engineering Supervisor of the Engineering Analysis Section 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 as an Economist. I took an engineering position in 1985. I was promoted to Utility Engineering Supervisor in August 2001. I participated in the development of the Commission's Electric Utility Resource Planning Rule 4 CSR 240-22.010 – 22.080 and I have been involved in the review of electric utility resource plans for the Commission since 1986. I am a registered Professional Engineer in the State of Missouri.

Q. Have you previously filed testimony before this Commission?

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A. Yes, I have. Please see Schedule 1 attached to this testimony for a list of cases in which I have previously filed testimony.

Q. What is the purpose of your rebuttal testimony?

A. The purpose of my testimony is to present information to the Commission regarding the resource plans and capacity needs of Aquila Networks – Missouri Public Service Division (MPS) and Aquila Networks – Light and Power Division (L&P), formerly St. Joseph Light and Power Company. The forecasted needs and available capacity for each of these divisions as provided to the Staff at the last Aquila resource planning update meeting are shown in tables attached as Schedule 2 to this testimony. These tables show that MPS's current need to address additional capacity requirements will continue through the decade. For Aquila to have the option to build to meet these requirements or receive the best possible terms in a purchase power contract, Aquila will need to maintain or have access to capital investment. Please see Staff witness Joan C. Wandel's rebuttal testimony for more details on how this growing capacity need impacts Aquila's request in this case.

Q. Please summarize the capacity needs of MPS and L&P.

A. The capacity balance of MPS is shown on the top of Schedule 2. MPS has adequate capacity for ** HC _____ ** but it will need ** HC **megawatts (MW) of capacity in ** HC ** . This is over ** HC _____ **. MPS's capacity need grows to **HC _____ **. The capacity balance of L&P is shown on in the middle of Schedule 2. L&P will not need additional capacity until ** HC ** and that need is less than ** H C**percent of its capacity requirement for that year. The capacity balance of the combined Aquila Missouri

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divisions is shown on the bottom of Schedule 2. Combined, MPS and L&P will need considerable capacity in ** HC ** due to the large need of MPS.

Q. Please describe the tables shown on Schedule 2.

A. At the top of each table is the forecasted peak for each of the years 2003 through 2010. This is the peak as predicted by Aquila and it is updated at least annually. It is the forecasted maximum single hour usage for the summer period for each year 2003 through 2010.

On Schedule 2 on the line below the forecast is the required capacity. It is greater than the forecasted peak because it contains a twelve percent capacity margin. This is the margin required by the Southwest Power Pool regional reliability authority to cover potential variability in the need for energy. This variability may be due to many reasons including but not limited to extreme weather, generation plants going off-line unexpectedly, or errors in the forecast.

On Schedule 2 on the line below the required capacity is a summary of the existing capacity that is available to meet the energy needs. The capacity is shown as existing generating capacity and total capacity purchases. The existing generating capacity is separated into base load and intermediate/peaking capacity. On the line below the generating capacity is the total of the firm capacity purchases. This is the amount of capacity from another entity for which a firm contract has been signed by Aquila.

Q. What is the difference between base load and intermediate/peaking generation?

A. The difference is cost and operating characteristics. Generally, base load plants have high capital cost, generally take five to ten years to build and have low, constant

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running costs. Because of this, these plants run almost continuously except for when maintenance needs to be performed on the facility. The base load generation capacity of MPS and L&P consists of generating facilities fueled by coal.

Peaking plants have low capital costs, are relatively quick (twelve to eighteen months) to build but have high running costs. It is most cost effective to only run these plants for a few hours of the year when the load is the highest. Peaking plants change their output to follow energy requirements of the system on a real-time basis. These facilities typically are gas or oil fired combustion turbines.

Intermediate generation capacity falls between base load and peaking capacity. Older coal plants sometimes are in this category. Gas-fired combined cycle plants are also generally considered intermediate capacity. A gas fired combined cycle plant is typically one or more combustion turbines with waste heat recovery, in the form of steam, being used to drive a steam turbine.

MPS's intermediate/peaking capacity is entirely gas-fired. L&P's intermediate/peaking capacity is fueled by coal, gas and oil.

Q. Would you provide a description of the capacity purchases of MPS and L&P?

A. L&P entered into a low-cost capacity contract for ** HC HC **. L&P also has **HC HC HC **.

MPS has contracted for ** HC HC

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HC _____

HC _____ **. It is the termination of ** HC _____

HC _____ ** capacity need for MPS beginning in ** HC ** and continuing into the future.

Q. What else contributes to Aquila's need for future capacity?

A. Forecasted growth in customer usage is the other contributor to the future need for capacity.

Q. How does Aquila intend to meet this capacity need?

A. Aquila issued a Request For Proposals (RFP) in the spring of 2001 for capacity for the delivery of energy in June 2005. The proposals received included purchase power offers respecting merchant coal, combustion turbine (CT) and combined cycle (CC) plants. However, the electric industry changed considerably during the time that Aquila was reviewing the proposals in 2002, so Aquila reissued the RFP in early 2003. At the June 26, 2003 resource planning update meeting with Staff and Office of Public Counsel, Aquila presented the results of its analysis of the bids it received from this second invitation for bids. Included in the bids were proposals for wind, coal, CTs, and CCs. All but one of the proposals were purchased power agreements. Aquila reviewed the bids and then contacted neighboring utilities to see what other supply options might be available. All of the proposals, including available capacity that Aquila learned of from talking with neighboring utilities, were evaluated against the option of Aquila building a CT/CC plant.

Q. What was the result of the analysis?

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A. At the time of the June 26, 2003 meeting, Aquila could not disclose any specifics about the bid with the lowest net present value because Aquila was in contract negotiations with the bidder and the bidder did not want Aquila to release any information.

Q. Have you since been told about the contract?

A. Aquila responded to Staff Data Request No. 2901 in this case that the proposal for the contract that was low bid in Aquila's analysis was withdrawn and a substitute proposal was not offered. Aquila then began final negotiations with three other bidders to confirm pricing, operation aspects, transmission path and other terms and conditions for contract capacity. In its August 30, 2003 response to Staff Data Request No. 2904, Aquila stated that:

** HC _____
_____
_____
_____ **

Q. So does Aquila have capacity to meet its needs in ** HC ** ?

A. At the time that I am writing this testimony, Aquila has not informed Staff of any additional capacity for MPS for the summer of ** HC **through a purchase power contract or generation plant being either built by Aquila for MPS or purchased by Aquila.

Q. Is the three to five year contract previously referred to by Aquila a long-term solution?

A. No, it only delays a more long-term solution of the need for additional capacity. If Aquila enters into to a three-year contract, it will need additional capacity with the end of the contract in 2008. A five-year contract would result in a need for capacity with the end of the contract in 2010. Schedule 2 shows that Aquila will need almost ** HC ** MW of capacity in 2008 and **HC ** MW in 2010. In addition to the needs shown on this

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schedule, Aquila is also **HC _____, HC _____ **.

Q. Is Aquila looking at some long-term solutions to its capacity needs?

A. Yes. In addition to looking at the possibility of building CTs, Aquila stated in its response to Staff Data Request No. 2903 that there is a potential need for a base load plant, either coal or gas-fired, to meet future demand as soon as 2010.

Q. When would a decision need to be made regarding building a coal plant for the 2010 time frame?

A. The current industry view is that it takes approximately five to eight years to site, obtain environmental permits and build a coal plant. Therefore, a decision would need to be made to build a coal plant by 2005 to have it available for 2010. However, Aquila believes that such a decision may not be necessary that soon as noted in its reply to Staff Data Request No. 2903.

> Coal base load may be available on the market at the time it is needed and could be purchased. Depending on the size and location the coal base load construction time will vary depending on location. It may be possible to purchase a share of a coal base load under construction at the time of need.

Q. How long would it take to build the base load gas-fired plant that Aquila referred to in its response to Staff Data Request No. 2903?

A. While Aquila did not explicitly define what kind of gas-fired plant it was referring to as a base load plant, it did say that gas base load capacity could be partially built in one year and completely finished in two to three years. This leads me to believe that Aquila is referring to a CC plant. Therefore, a decision to build to meet capacity needs in 2010 with a CC plant would need to be made, at the latest, toward the end of 2007.

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However, as an alternative to building, Aquila states that it believes that it will be able to purchase base load gas-fired capacity in the market.

Q. Has Aquila included in its budget for 2003 through 2005 any expenditure for capacity additions?

A. According to Mr. Glenn Keefe, Operating Vice President of MPS, **HC HC HC HC **. (Transcript of Informal Interviews, Volume 3, page 742, lines 3-24.)

Q. Does this conclude your rebuttal testimony?

A. Yes, it does.

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PREVIOUS TESTIMONY OF LENA M. MANTLE

CASE NUMBER	TYPE OF TESTIMONY	ISSUES
ER-84-105	Direct	Demand-Side Update
ER-85-20	Direct	Demand-Side Update
ER-85-128, et. al	Direct	PURPA Standards
EC-87-114, et. al.	Surrebuttal	Annualization & Normalization of Sales
EO-90-101	Direct, Rebuttal, and 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 Loads Normalization of Net System
ER-94-163	Direct	Normalization of Net System
ER-94-174	Direct	Weather Normalization of Class Sales Normalization Net System
EO-94-199	Direct	Weather Normalization of Sales
ET-95-209	Rebuttal and Surrebuttal	New Construction Pilot
ER-95-279	Direct	Normalization of Net System
ER-97-81	Direct	Weather Normalization of Class Hourly Loads, TES Tariff, Normalization of Net System

PREVIOUS TESTIMONY
OF LENA M. MANTLE (cont.)

CASE NUMBER	TYPE OF TESTIMONY	ISSUES
EO-97-144	Direct	Weather Normalization of Class Loads Normalization of Net System
ER-97-394, et. al.	Direct, Rebuttal and Surrebuttal	Weather Normalization of Class Loads Normalization of Net System Energy Audit Tariff
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 Loads Normalization of Net System
EM-2000-369	Direct	Load Research
ER-2002-1	Direct	Weather Normalization of Class Loads Normalization of Net System
ER-2001-672	Direct and Rebuttal	Weather Normalization of Class Loads Normalization of Net System
EC-2002-1	Direct Rebuttal	Weather Normalization of Class Loads Normalization of Net System
ER-2002-424	Direct	Normal Weather Derivation

SCHEDULE 2 HAS BEEN DEEMED

HIGHLY CONFIDENTAL

IN ITS ENTIRETY