Exhibit No.:
Issues: Fuel Model
Witness: James W. Okenfuss, P.E.
Sponsoring Party: Aquila Networks-MPS

Case No.: ER-2004-0034 &

Before the Public Service Commission
of the State of Missouri

Rebuttal Testimony

of

James W. Okenfuss, P.E.

TABLE OF CONTENTS OF
REBUTTAL TESTIMONY OF
JAMES W. OKENFUSS, P.E.
AQUILA, INC. D/B/A AQUILA NETWORKS-MPS

CASE NOS. ER-2004-0034

**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI
REBUTTAL TESTIMONY OF JAMES W. OKENFUSS, P.E.
ON BEHALF OF AQUILA, INC.
D/B/A AQUILA NETWORKS-MPS** ▆▆▆▆▆▆▆▆▆
CASE NOS. ER-2004-0034 ▆▆▆▆▆▆▆▆▆▆

1   Q.   Please state your name and business address.

2   A.   My name is James W. Okenfuss. My business address is 10750 East 350

3   Highway, Kansas City, Missouri 64138.

4   Q.   By whom are you employed and in what capacity?

5   A.   I am employed by Aquila Inc. ("Aquila" or "Company") in the position of

6   Senior Analyst.

7   Q.   Please briefly describe your education, work experience, and participation in

8   professional associations.

9   A.   In 1987 I received a Bachelor of Science degree in Electrical Engineering

10   from the University of Missouri-Columbia, and in 1997 a Master of Business

11   Administration from Rockhurst University. In 2003, I earned a Masters

12   Degree in Economics from the University of Missouri-Kansas City. Since

13   graduation from engineering school in 1987, I have worked for electric

14   utilities and engineering consulting firms in the areas of power generation,

15   marketing, design and delivery. In 2002, I joined the Aquila Networks as

16   Senior Analyst. I am a registered Professional Engineer in the State of

17   Missouri, a member of the American Economic Association, the International

18   Society of Econometrics and the Association of Evolutionary Economics.

1 Q. What is the purpose of your rebuttal testimony in this case before the Missouri

2 Public Service Commission ("Commission")?

3 A. The purpose of my rebuttal testimony is to address the direct testimony of

4 Missouri Public Service Commission Staff ("Staff") witness Graham Vesely,

5 Office of the Public Counsel ("OPC") witness James A. Busch, concerning

6 the determination of the appropriate natural gas fuel prices used in the

7 production cost simulation model. I will further comment upon the direct

8 testimony of Missouri Public Service Commission Staff witness Leon Bender

9 concerning the appropriate spot market power prices used in the production

10 cost simulation model.

11 Q. How is your testimony organized?

12 A. My direct testimony is organized as follows:

13 I. Rebuttal of Graham Vesely testimony

14 II. Rebuttal of James A. Busch testimony

15 III. Rebuttal of Leon Bender testimony

16 IV. General comments

17 **Graham Vesely Testimony**

18 Q. Please summarize, as you understand it, the method used by Mr. Vesely to

19 arrive at his recommended gas price for this case.

20 A. Mr. Vesely uses the average of the actual gas cost incurred, on a plant-by-

21 plant basis, over a 21-month period running from January 2002 through

22 September 2003. Mr. Vesely testified that this method was used to levelize

23 the volatility of the actual monthly costs without bias to the results.

1   Q.   Do you agree with Mr. Vesely's method?

2   A.   No. While the method seems to be straightforward and without flaw

3   numerically, it removes all volatility from natural gas market prices. The

4   output of Mr. Vesely's analysis is a single number for each plant that never

5   varies for 8,760 hours of the year.

6   Q.   The Staff method for determining natural gas price produces one number that

7   is used for every hour of the year. Does this mirror actual market price

8   behavior?

9   A.   No. The Staff method of developing an average natural gas cost with a

10   market price for gas removes all price volatility from the natural gas market.

11   In the week this testimony was written [January 5, 2004 through January 9,

12   2004], Henry Hub prices started at 6.27, rose to 7.04, and then dropped to

13   6.40. Assigning a single, immovable price to describe this process is a gross

14   oversimplification of the natural gas market.

15   **James A. Busch Testimony**

16   Q.   Please summarize, as you understand it, the method recommended by Mr.

17   Busch for determining the price of natural gas in this case.

18   A.   Mr. Busch uses a four-year average of historical and future prices weighted by

19   the actual average monthly volumes of gas burned by the Company. Three of

20   the four years are historical using NYMEX settled prices for 2001, 2002, and

21   2003. The fourth year is the 2004 NYMEX futures strip. Mr. Busch

22   calculates a recommended price of $3.99/mcf including the average basis

23   between NYMEX Henry Hub and Williams Natural Gas ("WNG") of

1     $0.179/mcf (negative with respect to the Hub). To restate the recommended

2   price at NYMEX, the basis must be removed to arrive at $4.169/mcf.

3 Q. What problems do you see with Mr. Busch's method and recommendation?

4 A. What Mr. Busch is calculating is the average expected cost of gas burned by

5   the Company. This is not an estimate of natural gas market prices. Mr. Busch

6   proposes that the average historical costs of an individual company's gas

7   purchases be used as the predicted market price for natural gas.

8 Q. Will this confusion of Company costs with market prices have an impact on

9   the Real Time ™ production cost model used by both the Staff and the

10   Company?

11 A. Absolutely. The production cost model is designed to take market prices as an

12   input, in order to develop Company costs as an output. Aquila has placed

13   market prices as an input to the model, in accord with its design, while Mr.

14   Busch would propose forcing Company costs into the model to develop

15   Company costs.

16   **Leon Bender Testimony**

17 Q. Please summarize, as you understand it, the Staff's modeling method of the

18   spot market power price curve.

19 A. The Staff curve is developed by looking at the prices Aquila paid for power in

20   2003. Therefore, what the Staff has developed is an individual company's

21   costs over time and not a market price curve. In short, the Staff has confused

22   costs with prices.

1   Q.   Does this have an impact on the cost production model, Real Time ™, used by

2   both the Staff and the Company?

3   A.   Absolutely. Real Time ™ is a production cost model and is designed to

4   forecasts the costs that an individual company will incur from its operations.

5   All production costs models conceptually produce company cost curves as an

6   output of the model. The inputs to the model must be market price curves

7   only. What the Staff has done, in effect, is to force production costs for an

8   individual company into a model to predict production costs for that same

9   company.

10   Q.   Did the Company use a market price curve or a company cost curve as an

11   input to the production cost model?

12   A.   The Company used the market price curve forecast based upon the forecast of

13   the marginal cost of the marginal producer in the northern Southwest Power

14   Pool ("SPP") region.

15   Q.   Briefly describe the Company's spot market power price curve method.

16   A.   The Company curve is based upon a forecast of regional marginal power

17   production costs at given levels of forecasted fuel prices and given load

18   forecasts. The Company's curve is the output of a model that attempts to

19   identify the lowest cost provider of power that will physically need to be

20   called upon to serve the need of system load at each hour of the test year.

21   Each megawatt of load is matched to a megawatt of production, starting with

22   the least expensive production and moving on to ever increasing cost. Once

23   every megawatt of load has been matched to a megawatt of production, the

1   cost of the last producer called upon [the marginal producer], is determined.

2   From basic economic theory, the market price of a commodity is determined

3   by the marginal cost of the marginal producer in the region. Therefore,

4   Aquila's market price curve is in accord with basic economic theory. The

5   method that Aquila uses is also conducive for use within a production cost

6   model.

7   **General Comments**

8   Q.   The Staff has independent methods for determining market power prices and

9   market natural gas prices. Do independent forecasts provide meaningful

10   information concerning the operation of an electric system?

11   A.   No. The independent nature of the Staff forecasting methods causes the

12   resulting curves to be completely non-correlated. In other words, the market

13   price for gas has no impact on the market price for power.

14   Q.   Has the Company previously provided evidence concerning the correlation of

15   natural gas and power prices in the market?

16   A.   Yes. In a data request for Case No. ER-2004-0034 (DR MPSC 238), the Staff

17   requested studies or findings that had been performed by Aquila documenting

18   the level of correlation between power and gas prices. In the study provided,

19   Aquila demonstrated a strong positive correlation between natural gas and

20   power prices in the market.

21   Q.   What was the level of price correlation cited by Aquila?

22   A.   69.8%. A perfectly correlated process would be 100.0%

1   Q.   What is the impact of a strong correlation with regard to the proper

2   functioning of the Real Time ™ production model?

3   A.   The correlation between gas and power has an important impact on the

4   operation of an electric system of production and the model that represents it.

5   If a strong correlation exists, a utility will have fewer low cost options

6   available to it during times of high fuel or high spot power prices.

7   Q.   Does this conclude your testimony?

8   A.   Yes.

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the matter of Aquila, Inc. d/b/a Aquila	)	
Networks-MPS████████████	)	
for authority to file tariffs increasing electric	)	Case No. ER-2004-0034
rates for the service provided to customers in	)	
the Aquila Networks-MPS██████	)	
█████ area	)	
	)	
████████████████████	)	██████████████
	)	
	)	

County of Jackson	)	
	)	ss
State of Missouri	)	

AFFIDAVIT OF JAMES W. OKENFUSS

James W. Okenfuss, being first duly sworn, deposes and says that he is the witness who sponsors the accompanying testimony entitled "Rebuttal Testimony of James W. Okenfuss;" that said testimony was prepared by him and under his direction and supervision; that if inquiries were made as to the facts in said testimony and schedules, he would respond as therein set forth; and that the aforesaid testimony and schedules are true and correct to the best of his knowledge, information, and belief.

_____
James W. Okenfuss

Subscribed and sworn to before me this 26th day of January, 2004.

_____
Notary Public
Terry D. Lutes

My Commission expires:

8-20-2004

> TERRY D. LUTES
> Jackson County
> My Commission Expires
> August 20, 2004