Exhibit No.:
Issues: Spot Prices Fuel & PP
Witness: James W. Okenfuss
Sponsoring Party: Aquila Networks-MPS & L&P
Case No.: ER-

Before the Public Service Commission
of the State of Missouri

Direct Testimony

of

James W. Okenfuss

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BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI
DIRECT TESTIMONY OF JAMES W. OKENFUSS, P.E.
ON BEHALF OF AQUILA , INC.
D/B/A AQUILA NETWORKS-MPS AND AQUILA NETWORKS-L&P
CASE NO. ER-_____

Q. Please state your name and business address.

A. My name is James W. Okenfuss. My business address is 10750 East 350 Highway, Kansas City, Missouri 64138.

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

A. I am employed by Aquila, Inc. ("Aquila" or "Company") in the position of Electric Systems Analyst.

Q. Please briefly describe your education and work experience.

A. I graduated from the University of Missouri - Columbia in 1987 with a bachelor's degree in electrical engineering. My employment with Missouri Public Service ("MPS") began in 1988 as Marketing Engineer and later as Associate Engineer – Instruments and Controls at the Sibley Generating Station. In 1995, I left MPS to work as a consultant for Black & Veatch ("B&V") and Shafer, Kline and Warren ("SKW"). In 1997, I completed a masters of business administration at Rockhurst University. In 2000, I became, and still remain, a member of the adjunct faculty of Avila University, teaching economics and statistics courses in the Undergraduate Business and MBA programs. In 2001, I accepted employment with Aquila Merchant Services as Senior Fundamentals Analyst. In 2002, I was transferred from the

deregulated Aquila Merchant Services Group to the regulated Aquila Networks Group in my current capacity. In 2003, I completed a masters in economics at the University of Missouri – Kansas City. I am a Missouri licensed professional engineer; E-27080.

Q. Briefly describe your current duties at Aquila.

A. I currently analyze the state of the market for electricity in the various regions that Aquila Networks serves, primarily the North American Reliability Council ("NERC") regions designated as the Western Electric Coordinating Council ("WECC") and the Southwest Power Pool ("SPP"). Part of my analysis includes providing models of spot market prices for the Eastern Interconnect, an electrical grid that extends from the Atlantic to the Rockies.

Q. Have you previously filed testimony before the Missouri Public Service Commission ("Commission")?

A. Yes. I filed rebuttal testimony in Case Nos. ER-2004-0034 and HR-2004-0024 (Consolidated) concerning issues involving the determination of natural gas and power prices to be used in those electric and steam rate cases, for the purpose of setting rates.

Q. What is the purpose of your direct testimony?

A. The purpose of this testimony is to present and support Aquila's position in this case regarding spot market power prices used in determining fuel and purchased power expense for the Aquila Networks-MPS ("MPS") and Aquila Networks-L&P ("L&P") operating divisions of Aquila.

Q. Are you sponsoring any schedules?

A. Yes. I am sponsoring Schedule JWO-1, which summarizes the price of spot market power used in determining fuel and purchased power expense for the Aquila Networks-MPS ("MPS") and Aquila Networks-L&P ("L&P") operating divisions of Aquila. This schedule details the on-peak power prices estimated for the Southwest Power Pool, Northern Subregion (SPPN).

MPS /L&P REGIONAL SPOT-MARKET POWER PRICE MODELING

Q. In developing the annualized purchased energy expense in this case, did Aquila adjust the price paid for spot-market energy from what was actually paid during the test year?

A. Yes, the adjustment was made to improve the accuracy of the model in response to current fuel prices and economic conditions.

Q. Please describe the market drivers used in your development of power market price estimates.

A. Aquila assumes that the power market price is roughly determined by the impact of several factors operating at the same time. Principal drivers of the price for power are: existing and proposed generation, current load profiles and load growth, and the current level of fuel costs with fuel price movements. Technological advancements to the production of power can have an impact over time, but have a minimal impact in the test year power price estimates. Therefore those advances are left out of the price determination model.

Q. Please describe Aquila's sources for existing and future generation resources.

A. Aquila utilizes a national database of power production from Global Energy Decisions (GED) that is specially formatted for use in GED's MIDAS Gold ™ analysis package. The MIDAS Gold ™ database has as its source the current GED Energy Velocity ™ database.

The MIDAS Gold ™ database contains unit specific operating data on every operating plant within NERC. This operating data includes unit capacity, heat rate, fuel type, variable O&M costs, fixed plant costs, etc. GED compiles much of this data from published resources such as FERC Form 1 submissions and quarterly CEMS data compiled by the EPA.

Q. Please summarize Aquila's assumptions concerning regional and national loads.

A. Regional loads are included in the MIDAS Gold ™ dataset. Regional loads and 10-year forecasts are reported by NERC region in the EIA-411. GED collects this information and breaks down present load and growth by market area. The MIDAS Gold ™ data set uses this information to simulate the load growth of all regions and market areas in NERC. Aquila does not modify this information in the production of the spot market price curve for power. So, for the test year 2004 neighboring systems load profiles were modeled from the 2004 forecast information each neighboring utility and region submitted to NERC.

Q. Please explain which fuel costs are used in power price determination.

A. The power market price estimating methods used by Aquila, are concerned with only a few types of primary energy source costs. Nuclear fuel, coal,

hydro, natural gas and fuel oil are the fuels that have a material impact on the ultimate market price for power. The impact of wind, solar, biomass and other renewable resources appear to be minimal, and therefore are not used as a driver for market power prices.

Q. Please describe the method of estimated primary fuel source forward prices.

A. Fuel costs assumptions vary by the fuel being considered. The methods used for determining the cost of each primary energy source is considered separately.

Q. Describe the method used to forecast nuclear, coal and hydro fuel costs.

A. The majority of the energy produced in the country is generated by base loaded plants most of which use nuclear, coal or hydro fuel (stable cost) as their primary energy source. The costs of these sources have two features in common. First, the cost is heavily dependent upon the individual plant. The costs for fuel at these plants vary due to a large number of factors, including refueling schedules, coal and delivery contracts, water usage constraints, etc. The second feature these fuel costs have in common is that they are relatively stable and do not fluctuate over time. Therefore, the fuel cost estimate for actual fuel purchased costs contained in GED's Energy Velocity™ database for each individual plant is likely to hold throughout the timeframe of the test year. Therefore, for Aquila's test year estimating purposes, GED's actual costs for these fuels are held constant for the study period.

Q. Please explain how natural gas and fuel oil prices are estimated.

A. Due to the volatile nature of the price of natural gas and the increasing percentage of time that natural gas fired generating units are the marginal price unit, the need for a natural gas forecast that considers the seasonal fuel price fluctuations is essential to an accurate power market price estimate. Regional natural gas prices were developed using the method sponsored in Aquila witness Jerry G. Boehm's testimony. Natural gas basis for the individual plants are assumed to be relatively constant across a NERC region or sub-region. Average historical basis are calculated for each region and applied to the Henry Hub forecast to provide a delivered cost for natural gas in each of the NERC regions or sub-regions. It is assumed that the natural gas basis will not vary over time.

Fuel oil appears to drive power prices for certain months of the years in certain areas of the country, primarily Florida and the Northeast. However, the impact of fuel oil price movements to the power market prices in the Midwest is insignificant. For modeling purposes, the futures prices of New York Harbor delivered #2 and #6 Fuel oil is used as an input to the model.

Q. Please describe the method by which power prices are developed.

A. Power market prices are developed using the MIDAS Gold ™ analysis software from GED. The MIDAS Gold ™ software can be used in a variety of ways. When used for price forecasting, the model is being used in the "multi-area" mode.

Q. What is the MIDAS Gold ™ "multi-area" mode of analysis?

A. The multi-area mode of analysis is basically an application of a transportation linear programming model. All regions of the country are condensed into market areas, each with a load profile and a set of generation resources. Within each market area, loads and resources are matched 8760 hourly periods per year.

The market areas are connected in the model by a series of transmission lines, each subject to a transmission constraint. Price differences in market areas connect with an unconstrained transmission path and will cause the model to assume a power flow between the two areas, the effect of which will be to lower the cost in the high price area and increase the cost in the low cost area. This assumed power flow increases until the two market prices have equilibrated at an identical level or the transmission line has reached its limit.

Q. Are prices only developed for the Southwest Power Pool (SPP) NERC region?

A. No. Market prices are simultaneously determined for all regions within the model study. The Midwest model produces power market forward prices for market areas in the SPP, Mid-Continent Area Power Pool (MAPP), Mid-American Interconnected Network (MAIN), and the Southeastern Electric Reliability Council (SERC) NERC regions.

Q. Does this conclude your testimony at this time?

A. Yes.

Schedule JWO-1: Average Spot Market Power Prices - SPPN

SPPN Average Spot Power Prices - $/MWh		
Month	Peak	Off-Peak
JAN	68.538	39.542
FEB	68.321	43.635
MAR	56.981	36.390
APR	53.867	35.595
MAY	46.434	26.478
JUN	58.503	27.158
JUL	72.409	39.238
AUG	75.120	37.034
SEP	48.871	25.834
OCT	41.979	22.577
NOV	46.078	25.022
DEC	60.327	37.380

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

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

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 "Direct 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 24th day of May, 2005.

Notary Public
Terry D. Lutes

My Commission expires:

8-20-2008

Notary Public Notary Seal State of Missouri

TERRY D. LUTES
Jackson County
My Commission Expires
August 20, 2008