Exhibit No.:
Issues: Resource Requirements
Witness: Jerry G. Boehm
Sponsoring Party: Aquila Networks-MPS
Case No.: EA-

Before the Public Service Commission
of the State of Missouri

Direct Testimony

of

Jerry G. Boehm

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BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI
DIRECT TESTIMONY OF JERRY G. BOEHM
ON BEHALF OF AQUILA, INC.
D/B/A AQUILA NETWORKS-MPS
CASE NO. EA-_____

Q. Please state your name and business address.

A. My name is Jerry G. Boehm. 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 Manager, Resource Planning.

Q. What are your responsibilities as Manager – Resource Planning?

A. I am responsible for analyzing long-term generation and purchase power resources to meet the requirements of Aquila's domestic regulated electric utility operations. I am also responsible for fuel and purchase power budgeting, electric power market analysis and short-term resource analysis.

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

A. In 1977 I received a Bachelor of Science degree in Electrical Engineering from the University of Missouri - Columbia. I am a registered Professional Engineer in the State of Missouri.

Since graduation the majority of my work has been in the field of electric utility power

supply and delivery. In 1977 I joined the Missouri Public Service Company as Staff Engineer. In that position I was responsible for load flow transmission analysis, power system relay and control design and maintenance, generation planning, fuel and interchange budgeting, and FERC/NERC reporting. Subsequently, I have received a number of position advancements prior to my moving to my current role in resource analysis.

Q. Please describe your experience as an expert witness in energy utility regulatory proceedings before state and federal regulatory commissions.

A. My experience as an expert witness in an energy utility regulatory case regarding resource planning, fuel and purchase power modeling:

- Aquila (MPS electric): Missouri PSC, ER-2004-34
- Aquila (WPEK electric): Kansas Corporate Commission, 04-AQLE-1065-RTS
- Aquila (MPS electric): Missouri PSC, EA-2005-0248
- Aquila (MPS electric): Missouri PSC, EA-2005-0436

Executive Summary

Q. What is the purpose of your testimony?

A I am supporting the use of the Resource Planning process to evaluate the need for South Harper and the resource selection results. I will state the justification for adding generation capacity, explain the analysis methods used in resource planning, and discuss the adoption of a preferred plan over a least cost plan. I will also discuss the reasons for not adopting a new Calpine contract, review the resource planning updates to the

Missouri Public Service Commission Staff ("Staff"), and show the current status of the preferred plan.

Capacity Justification

Q. Why did Aquila build the South Harper facility?

A. In 2005 we needed capacity to replace 500 MW of an expiring Calpine purchase power contract and to accommodate approximately 50 MW of native load growth.

Q. Are all 550 MW of your needs for native load?

A. Yes, under National Electric Reliability Council ("NERC") and more specifically Southwest Power Pool ("SPP") criteria we have to maintain sufficient capacity to meet system peak demand and capacity reserve margin.

Q. Why didn't Aquila just renew the expiring contract?

A. We used the competitive bidding process to help us minimize cost to the customer.

Q. Did Calpine participate in the bidding process?

A. Calpine has submitted proposals before, during, and after the Aquila deadlines. Other suppliers also submitted offers to provide purchase power contracts or build generating plants for Aquila. We afforded Calpine the same treatment as the other bidders. Aquila also investigated various self-build options to meet its load requirements.

Analysis Methods for Capacity Need

Q. How did Aquila determine the candidates for meeting the resource needs?

A. Aquila developed candidates from three methods. The first method was the use of a Request for Proposals ("RFP"). An RFP is a formal request sent to prospective suppliers asking them to submit competitive bids to supply the resource. The second method was a

process called “canvassing” where Aquila used informal contacts with other utilities at the management, operations and planning levels to promote dialog over supplying bids or solving mutual resource goals together. The third method was to develop in-house estimates for self-build resource projects. Each of these methods produced candidates for consideration.

Q. What did you do with the candidate offers?

A. We compared the responses, substantial canvass opportunities, and self build estimates utilizing the principles of least cost utility planning. Least cost utility planning is an economic analysis method with the lowest total system operating cost as the objective target. Least cost utility planning methods are applied to an Integrated Resource Plan (“IRP”). The IRP is the result of testing all available resource candidates under various scenarios and determining which of those candidates most economically meets the needs of the system.

Q. Please explain the least cost planning methods that you use to analyze power plant needs.

A. We use a peak load forecast to determine the amount of capacity that is needed each year for up to 30 years. We use energy load forecasting to determine how that capacity must perform to meet hourly load requirements. Our tools range from simple graphing/balancing techniques (capacity need / resource screening) to complex computer multi-year power system scenario models.

Q. How do you prepare candidate solutions for testing?

A. In the category of self-build options there are a large number of supply candidate types and configurations. We use resource screening models to narrow candidates within certain categories.

Q. Please explain resource screening.

A. Resource screening is a single element approach to evaluating the worth of a candidate resource. As an example, resource screening helps us determine if one type of peaking plant (battery storage) is more economical to operate than another (combustion turbine). Aquila is a member of the Electric Power Research Institute ("EPRI") which provides up to date cost information on hundreds of plant model designs. Using the EPRI information and supplier information Aquila can accurately screen many types of power plants. Schedule **JGB-1** Choosing the Right Type of Power Plant gives a simplified example of why different types of power plants are utilized by Aquila and outlines a graphical screening process. This method helps reduce the amount of production costing modeling that is required. This schedule was previously discussed with the Commission in Case No. EA-2005-0248.

Q. Please explain production costing modeling.

A. Aquila uses production costing modeling to analyze candidate resources. Production modeling simulates the simultaneous dispatching of many resources, similar to actual operation of the utility, for a set time period under varying load conditions based upon historic load patterns of the utility. Aquila models each candidate or groups of candidates integrated into the existing Aquila Missouri system. Aquila also expands production modeling to include spot market opportunities created by power systems

outside of Missouri Aquila. This intensive modeling enables Aquila to thoroughly evaluate a candidate resource and evaluate its contribution to the incumbent system for up to thirty years.

Q. What models do you use?

A. MIDAS Gold and Realtime.

Q. Why do you use two models?

A. MIDAS Gold is a multi-scenario market model capable of capturing many aspects of regional electricity market pricing, resource operation, and asset and customer value. Its decision tree framework allows Aquila to analyze many operating scenarios. MIDAS Gold is useful for long-range studies up to 30 years. Realtime lacks the financial modeling of MIDAS Gold but provides greater dispatch modeling accuracy for short range analysis (1 to 5 years).

Q. Did the results of these models tell you to build South Harper?

A. Our model results showed that two purchase-power offers supplemented with a plant like South Harper (3x105MW) provided the best solution for the customer.

Preferred Plan and Least Cost Plan Comparison

Q. Was this solution the lowest cost plan?

A. No. We call the 3-CT plan the "preferred plan". The lowest cost scenario results under base conditions was a plant with 5 CTs (5x105MW)

Q. Why did you take your preferred plan over the least cost scenario?

A. Aquila took into consideration the following issues:

- Portfolio size Ownership concerns over adding 525 MW from the same style of generator had a "too many eggs in one basket". Should the turbine design prove to be a problem Aquila would have a sizable portion of its capacity tied up. A practical approach would be to build a site for five or more units, gain experience and confidence in the turbine design over a few years and, if operating experience is favorable, add the remaining turbines.
- Purchase Power Agreement ("PPA") Flexibility Aquila's experience with mid-term and short term purchases has suggested that cost effective purchase solutions still existed. The PPA's under consideration would complement a 3 CT plan by supplying energy at intermediate and baseload pricing By using intermediate energy at system participation (system average cost from the supplier) and baseload energy at fixed pricing contracts add significant value as a hedge against natural gas price increases associated with the 3 CT plan..
- The value of diversity The results of the modeling returned differences between a 3 CT and a 5 CT plan of $4 million on a 10-year basis. Aquila believed that the fuel, price and source diversity added by splitting the need into multiple sources (portfolio approach) easily justified the cost difference. This is shown on Schedule **JGB-2** Summary of Model Results for MO PSC Staff and OPC Representatives presented to Missouri Public Service Commission Staff ("Staff") and the Office of the Public Counsel ("OPC") representatives on July 9, 2004.

Q. Did the results of these models tell you where to build South Harper?

A. No. Our model is not location specific. Aquila witnesses Terry Hedrick and Chris Rogers provide direct testimony which discusses site selection criteria that is utilized once a self-build option has been selected.

Preferred Plan vs. Calpine Offers

Q. If you already had a contract from Calpine and they proposed another contract, why didn't you take Calpine's offer?

A. The contract that was offered proposed higher prices and significant operating constraints compared to the existing contract. The existing contract had valuable operating flexibility that allowed use of the plant as a peaking source as well as an intermediate source. The proposed contract was structured with penalties which made its use as a peaking source very costly.

Q. Did Calpine submit more than one offer during the study period?

A. Yes. As the analysis progressed Aquila would on occasion request updates from all parties offering bids. If results of our analysis were relatively close we would give participants an opportunity to "sharpen their pencils" and provide an update. No price feedback was offered by Aquila but usually all participants would recognize that competition was close and try to provide Aquila with a more attractive offer. Calpine provided updated offers in response to Aquila's solicitations but also provided updates that were not solicited. Schedule **JGB-3** Case No EA-2005-0248 Response to Data Request MPSC-6 as supplemented, articulates the timeline of these events.

Q. Were the Calpine offers competitive?

A. None of the solicited offers were competitive. Even though Calpine sits within the Aquila service territory, its offers were as high as or higher than some offers from entities in other states. After Aquila made the decision to move forward with South Harper, Calpine finally attempted to provide an unsolicited offer that was competitive.

Q. If it was competitive why didn't Aquila take it?

A. It was a "too little, too late" situation. Calpine submitted two offers at a very late date. One offer was for one-year duration and the other for three-year duration. The one-year offer was cost effective; the three-year wasn't. Both offers came months after the decision to build and while attractive, didn't excel over the decision to build. By the time the offers were received, Aquila had incurred sunk costs in pursuit of the self-build option which, when added to the late Calpine offer, made the latter option even less attractive.

Q. May a contract from a combined cycle plant be replaced with a peaking plant?

A. Yes.

Q. Please Explain.

A. First, the 3-CT peaking plant is not a full replacement. It is part of a portfolio solution which includes a 75-MW base-load contract and supplemental intermediate/peaking contracts. Second, the Calpine contract used the Aries combined cycle plant as its source. This plant was built as an intermediate-load power producer but Aquila's contract had the flexibility to operate like a peaking unit. Aquila used it in the dispatch process as a peak power supplier.

Q. How would you characterize this plant?

A. Aries appeared to be a bad fit.

Q. Did Aquila have a contract that involved the Aries Plant?

A. Yes. At the time the company entered into the initial contract with Calpine it appeared to be the best cost option. Since then, however, we gained years of experience understanding its operating characteristics. The rigid dispatch power blocks that are required to make a combined cycle plant cost effective were too large for Aquila's size and load volatility. We operated it like a peaking source which was hard on the units. Calpine also had learned from the experience and adjusted the terms of its proposed contract to enforce a duty cycle more typical of a combined cycle.

Staff Updates and Suggestions

Q. When did you first tell the Staff of the results of your analysis?

A. In January of 2005 Aquila informed Staff and OPC that it would pursue a self-build option. Before and after this announcement Staff had been receiving resource planning updates every six moths from Aquila. Schedule **JGB-3** Case No EA-2005-0248 Response to Data Request MPSC-6 outlines the process of IRP discussions beginning in 2001.

Q. Did the Staff direct Aquila to build South Harper?

A. No, Staff does not order action. The process is informal and is not a binding or indicative of approval. We do however, take away from the meeting suggestions and opinions of the Staff. In this regard the Staff has been supportive of all Missouri utilities building power plants versus entering into short or long term purchase power agreements.

Q. Did you use any of the Staff's suggestions for guidance?

A. Yes. For example, we re-issued a Request for Proposals in 2003 based on Staff's opinion that it would be prudent to do so. Other Staff suggestions were adopted after meeting competitive pricing and prudence reviews by Aquila. Aquila procured a 75 MW base-load capacity and energy contract after Staff suggested that we were deficient of base-load sources. Staff has stressed building versus buying capacity. Aquila built the South Harper plant and continues to actively analyze and participant in building additional capacity.

Q. Please describe Aquila's future resource needs.

A. Updated resource needs for the next 20 years are described in Schedule **JGB-4** Load and Capability. A table of resource additions as presented in the January 2005 IRP report to Staff and OPC is shown in Schedule **JGB-5** Preferred Plan Table. A graphical representation of existing resources and resource additions is shown in Schedule **JGB-6** Preferred Plan Graph.

Status of Preferred Plan

Q. Has Aquila followed the Preferred Plan to date?

A. Aquila negotiated to implement the SPS contract shown in the plan. Aquila could not reach acceptable terms with SPS and the contract was not completed. Since the failed SPS contract was a five year proposal Aquila has substituted the SPS capacity via short term purchases with others to date and is evaluating whether to accelerate building additional capacity or continue to structure short term capacity agreements and follow original planned capacity addition in-service dates.

Q. Does the absence of the SPS plan affect the justification for South Harper?

A. No. The need for peaking capacity was not diminished.

Q. Is Aquila committed to building all of the future capacity shown in Schedule **JGB-4?**

A. The Schedule represents a most probable course of action, but resource planning is a continual process. The plan is compromise between flexibility and value. Incumbent and committed resources will be part of the resource mix for years to come. Some planned additions may change or be removed due to changes in load growth, regulation, or production technologies.

Q. If South Harper were not in service, how would Aquila meet its resource requirements?

A. Aquila would need to add capacity to meet load and reserve requirements. Adding capacity could come in the form of importing capacity from suppliers outside of Aquila's System or building/acquiring capacity at another site within or outside of Aquila's system. Aquila addressed the cost of other options in its evaluation shown in Schedule **JGB-2**. Those options were significantly more costly than building South Harper.

Q. Does this conclude your testimony?

A. Yes.

Choosing the Right Type of Power Plant

When a utility needs to add to its production resources consideration is required for the power plant ***type***. What follows is a discussion of the selection process in simplified form. While examples of Aquila's planning and operating characteristics are used, the intent is to demonstrate the process. The information provided does not necessarily reflect Aquila's specific resource planning information.

All power plants are designed to be cost effective within their expected range of utilization. The resource planner's job is to match the plant's utilization level with the expected customer load levels. So, before the need to choose a generator type occurs, an examination of the customer load is required.

Figure 1 shows a sample of the Aquila system loads for one day. The load varies due to the customer use changing throughout the day. In late evening and early morning the business and residential use is extremely low. During the day the load varies with customer needs like cooking and entertainment.

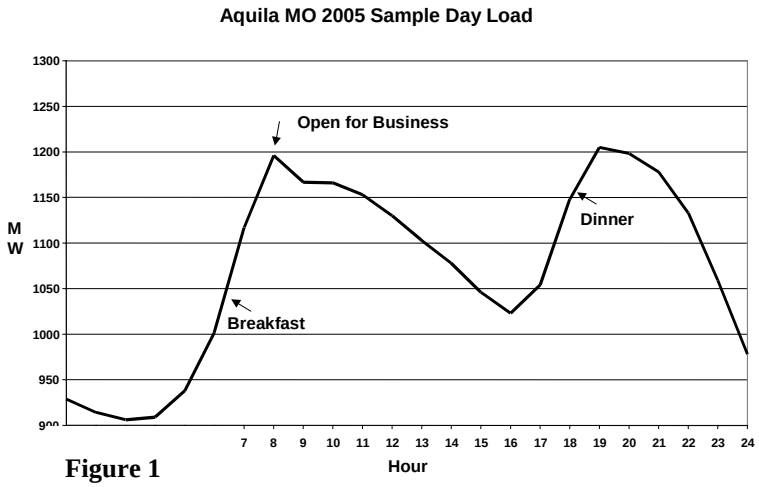


Figure 1

Aquila's generation resources have to be able to meet this changing load. It can be seen that at least 900 Mw or so of generation has to be available **most of the time** while an additional 300Mw or so is needed only **part of the time.**

Figure 2 shows how the load changes throughout a year. From viewing this graph it can be stated that 500 MW of generation is needed **most of the time,** an additional 400 Mw of generation is needed **some of the time,** and another 900 Mw of generation is needed a smaller **part of the time.**

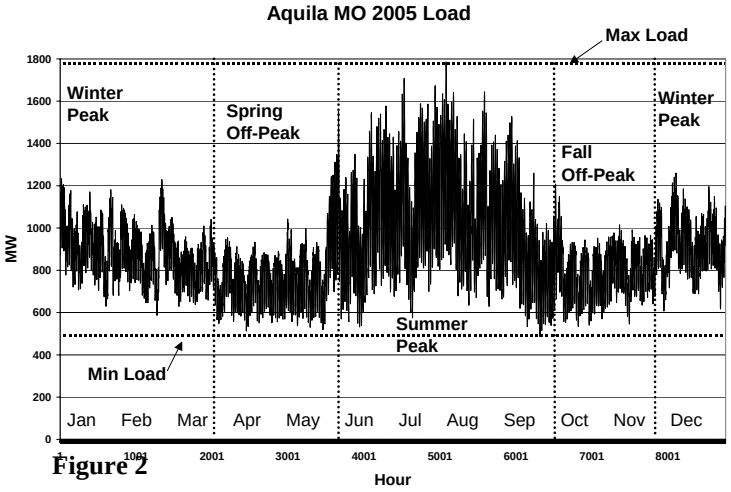


Figure 2

The bolded words above describe the basic design features of power plants.

Plants built to operate **most of the time** are called **Base Load** plants. Plants built to operate **some of the time** are called **Intermediate** plants, while those that operate only a smaller **part of the time** are called **peaking** plants.

Base load plants have to be built stronger and more reliable to withstand constant operation. Complex power transfer systems (steam) drive up the construction price of base load plants but have the advantage of being very efficient in fuel usage.

Conversely, a peaking plant does not need to be built as efficient or as strong so it costs much less than a base load plant. Figure 3 below shows the characteristics of Base Load, Intermediate, and Peaking plants.

An intermediate plant can be viewed as a hybrid of peaking and base load plants. Some of its design takes advantage of peaking's lower construction costs while capturing some of the efficiency of a base load plant.

Resource Category	Example	Construction Cost	Energy Cost	Startup Cost/Time	Duration	Cycle
Base Load	Coal Fueled Steam	**High**	**Low**	**High Cost** - 15-24 Hours	Always On	Off for Maintenance only
Intermediate	Natural Gas FueledSteam or Combined Cycle (CC)	**Moderate** - One-fourth to one-half Base Load Cost	**Moderate** - Twice the cost of Base Load	**Moderate /** 4 Hours	Days	Weekly - Seasonal
Peaking	Natural Gas or Oil Fueled Combustion Turbine (CT)	**Low** - one-sixth to one third the cost of base load	**High** - Three to Six times base load	**Low -** One Hour	Hours	Daily

Figure 3 Characteristics of plant types

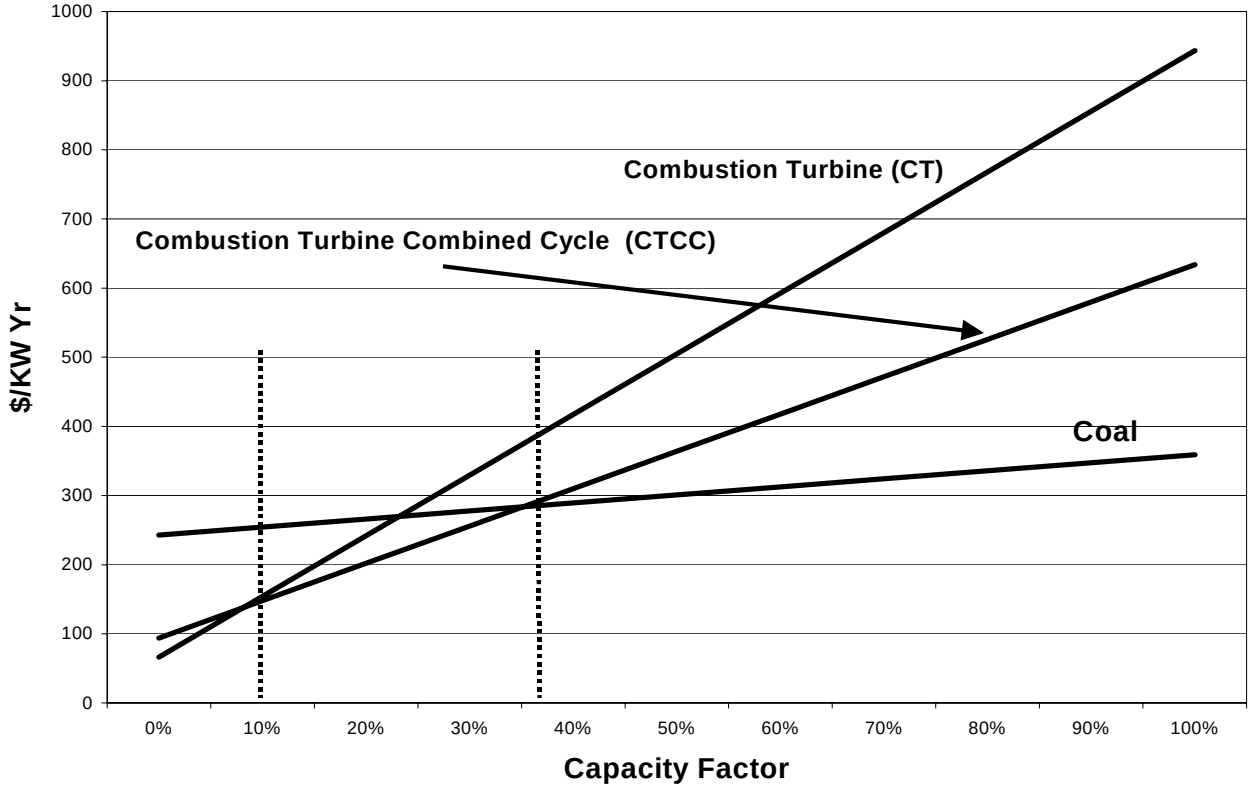
The amount of usage a power plant has during the year is called **Load Factor**. Load factor is determined by the percentage of output a plant delivers over a year. A plant at full load running every hour of the year has a capacity factor of 100%. A plant at half load running every hour of the year has the same capacity factor as a plant at full load running only half the hours of the year. Both have a capacity factor of 50%.

By examining the annual hourly loads, planners can determine the how much of each type of plant is needed to most economically meet the annual hourly loads.

Figure 4 below demonstrates the most economical ranges of capacity factors for the power plant types. It is a graph showing the annual cost of each kW the plant is able to produce. The cost is a combination of the fixed costs (similar to a mortgage cost) and variable cost (fuel).

As an example, if each of the plants did not run at all during the year, the least expensive one is the CT (peaking) since at 0% its line has the lowest $/kw/yr. Its lower construction cost determines its value.

If each of the plants were to operate at 20% the least expensive one is the CTCC (intermediate). The CTs much higher fuel costs leave it at a disadvantage when compared to the CTCC. The CTCC's moderate construction cost and moderate fuel



costs.

Figure 4 Best Capacity Factors of Power Plant Types

At 80% capacity factor the coal plant is the best value. The fixed costs that disadvantaged this plant at lower capacity factors are compensated by its very low fuel costs.
So if the need for a plant is for a small **part of the time** (less than 10%), a peaking plant is best.
If the need for a plant is **some of the time** (10-35%), an intermediate plant is required.
If the need for a plant is **most of the time** (more than 35%), a base load plant is best.

Summary of Model Results for MO PSC Staff and OPC Representatives

Copy of presentation Table Page 13

January 27, 2004 vs. July 9, 2004 Rankings*

January 27, 2004 – Five-Year NPV Difference

A. Five 501D5A CT's + Market	($12 M)
B. Three 501D5A CT's ("CBEC") + Exelon 10 HR + Market	Preferred
C. CBEC + SPS/Xcel Sys Part + Market	+ $7 M
D. MEPPH Cycling PPA + Market	+ $12 M
E. Exelon 10 HR + SPS/Xcel + Market	+ $21 M

July 9, 2004 – Ten-Year NPV Difference

A. Five 501D5A CT's + Market	($4 M)
B. CBEC + 150 MW SPS/Xcel + 78 MW Eight-Year & Preferred 100 MW Three-Year Extension NPPD ("NPPD") + Market	
C. CBEC + NPPD + 200 MW Three-Year MEPPH + Market	+ $14 M
D. CBEC + NPPD + 200 MW Five-Year MEPPH + Market	+ $18 M
E. CBEC + 250 MW Five-Year MEPPH + Market	+ $28 M

* All scenarios include 200 MW of baseload capacity additions in 2010 and 2021 and timely deployment of 501D5A CT's for future load growth

AQUILA, INC.
AQUILA, INC. - INVESTOR (ELECTRIC)
CASE NO. EA-2005-0248
MISSOURI PUBLIC SERVICE COMMISSION
DATA REQUEST NO. MPSC-6

DATE OF REQUEST: February 3, 2005

DATE RECEIVED: February 3, 2005

DATE DUE: February 13, 2005

REQUESTOR: David Elliott

BRIEF DISCRIPTION: NA

QUESTION:

Please provide documentation of the analysis Aquila did on the responses to its Request for Proposal that resulted in selecting these combustion turbines as a peaking capacity option.

RESPONSE:
In 2001 Aquila issued a request for proposals (RFP) to meet the energy and demand needs for Aquila Networks – Missouri (ANM). The RFP was prompted by the need to respond to forecasted load growth and to replace capacity lost at the expiration of a 500MW purchase power agreement (PPA).

During the process of reviewing the RFP responses the market environment for electric utilities changed drastically. On November 26, 2002 ANM (**Mo Power supply 11-2002.ppt**) met with MOPSC staff (Staff) and The Office of Public Counsel representatives (OPC) and suggested that a new RFP should be issued. Staff supported ANM's suggestion.

ANM canceled the 2001 RFP and issued another in January of 2003. ANM supplemented this formal request with informal discussions with multiple neighboring utilities and other power suppliers.

On June 26, 2003 ANM met with Staff and OPC and discussed analysis to date on the bids received (**Mo Power supply 6-2003.ppt**) and stated that one proposal, later identified as Associated Electric Cooperative, was superior to others and was the preferred plan. On August 7, 2003 AEC withdrew their proposal citing a decision to not purchase an unfinished merchant combined cycle plant.

AMN continued to evaluate the remaining bids and narrowed the resource options (**MOBID Screen Summary.xls**) to the following:

Exelon - 265 MW PPA from combined-cycle facilities
SPS – 50-200MW PPA from system capacity

MEC - 585 MW PPA from Aries CC
Internal – Self build combined –cycle or combustion turbine facilities

On February 9, 2004 ANM met with Staff and OPC and presented results of its analysis (**Mo Power Supply 2- 9 –2004.PPT**). ANM provided to Staff and OPC Excel spreadsheets which detailed fixed and variable costs for various scenarios which included all of the candidate resource options. Please refer to **NPVGrapher.XLS, tab 20yr** for an illustration of the results of the detailed analysis. Supporting this graph please refer to **MO IRP 20 year portfolios 012804.xls** and **MO RFP 20 year Results BASE.xls.** Those results indicated that the least cost resource choice was to self-build a 5x105 Siemens/Westinghouse CT power plant (POR10). ANM stated that for diversity their preferred choice was to build a 3x105 plant and purchase a base load and/or intermediate sources from either the RFP respondents or other available market options (POR6). The results can be reviewed individually. The following example may be helpful.

Example: compare the 10yr NPV results of the preferred plan (POR6) with the lowest cost MEC plan (POR1B)

POR1B –

- Portfolio Description: MO IRP 20 year portfolios 012804.xls tab "Portfolio Description" row 5
- Annual Portfolio Capacity: MO IRP 20 year portfolios 012804.xls; tab "POR1B"
- Annual Portfolio Fixed Cost: MO IRP 20 year portfolios 012804.xls; tab "POR1B costs"
- Annual Fuel and Expenses: MO RFP 20 year Results BASE.xls; tab RT Scenario Paste; Section J21-AD30
- Annual Capital Costs: MO RFP 20 year Results BASE.xls; tab RT Scenario Paste; Section J31-AD31
- Total Annual Costs: MO RFP 20 year Results BASE.xls; tab RT Scenario Paste; Section J33-AD33
- NPV of Annual Cost: MO RFP 20 year Results BASE.xls; tab RT Scenario Paste; Section D29-E33

POR6 –

- Portfolio Description: MO IRP 20 year portfolios 012804.xls tab "Portfolio Description" row 11
- Annual Portfolio Capacity: MO IRP 20 year portfolios 012804.xls; tab "POR6"
- Annual Portfolio Fixed Cost: MO IRP 20 year portfolios 012804.xls; tab "POR6 costs"
- Annual Fuel and Expenses: MO RFP 20 year Results BASE.xls; tab RT Scenario Paste; Section J113-AD122
- Annual Capital Costs: MO RFP 20 year Results BASE.xls; tab RT Scenario Paste; Section J123-AD123
- Total Annual Costs: MO RFP 20 year Results BASE.xls; tab RT Scenario Paste; Section J125-AD125
- NPV of Annual Cost: MO RFP 20 year Results BASE.xls; tab RT Scenario Paste; Section D121-E125

By inspection of the values and calculations will demonstrate that POR6 (MO RFP 20 year Results BASE.xls; tab RT Scenario Paste; Cell E123 NPV=1485) is a lower cost option than POR1B (MO RFP 20 year Results BASE.xls; tab RT Scenario Paste; Cell E31 NPV=1498)

In this meeting the Staff raised concerns and offered the opinion that ANM should pursue future base load resources. ANM agreed that base load resource alternatives were desirable provided such alternatives could be acquired economically. ANM further explained that one of the underlying assumptions of its power supply plan was the addition of approximately 200 MW of base load in 2010 and correspondingly updated Staff and OPC on its efforts to date. Returning to the near-term power supply need ANM restated

that as of the presentation date the analysis continued to strongly indicated a need for peaking power and that it would anchor its need for capacity with the addition of 315 MW of peaking capacity (the best alternative(s) comprised by "all peaking and/or augment peaking with lesser amounts of intermediate/base load" theme consistently demonstrated since the November 2002 presentation (refer to Mo Power Supply 2- 9 –2004.PPT page 9).

On July 9, 2004 ANM presented to Staff and OPC an update of its Preferred/Proposed Resource Plan activities (**Mo Power Supply 2004-07-09.ppt**). In this meeting ANM had informed Staff that its would pursue the following and described actions to that date:

- Build a 315 MW CT plant
- Executed Letter of Intent regarding nine year 75 MW Cooper base load PPA and three year extension of existing 100 MW Gerald Gentleman base load agreement with Nebraska Public Power District (NPPD)
- Executed Memorandum of Understanding regarding five year 150 MW base load/intermediate PPA with Southwest Public Service/Xcel Energy (SPS)
- Continue PPA discussions with others for contingency purposes.

On November 19, 2004 ANM met with Staff and OPC and advised Staff that PPA agreements were in negotiation and the South Harper Energy Center was beginning construction (**Mo Power Supply 2004-11-19.ppt**).

On January 20, 2005 ANM met with Staff and OPC to (1) discuss the status of South Harper deployment, (2) advise that the NPPD Cooper transaction had been executed and Gentlemen extension was moving forward, (3) inform that the SPS Memorandum of Understanding had expired but that negotiations continue, and (4) apprise regarding the status of ANM's 2005 Summer Supply Contingency Plan (e.g., Sunflower peaking and Aquila. ANM provided documentation reporting the completion and execution of a nine year 75 MW base load PPA with NPPD beginning January 1, 2005. ANM stated that it would continue to investigate alternatives to replace the proposed SPS purchase and would keep the Staff informed as to the progress of these actions (**Mo Power Supply 2005-01-20.pprt**).

As of February 7, 2005 ANM has no progress to report concerning contingency plan.

ATTACHMENT: Zip MPSC06.zip - Contains the following:

Mo Power Supply 11-2002.ppt
Mo Power supply 6-2003.ppt
MOBID Screen Summary.xls
Mo Power Supply 2- 9 –2004.PPT
NPVGrapher.XLS
MO IRP 20 year portfolios 012804.xls
MO RFP 20 year Results BASE.xls
Mo Power Supply 2004-07-09.ppt
Mo Power Supply 2004-11-19.ppt
Mo Power Supply 2005-01-20.prt

ANSWERED BY: Jerry G. Boehm

_____

SIGNATURE OF RESPONDENT

DATE: _____

Load and Capability

Aquila Mo - Load and Capability 1/20/2005

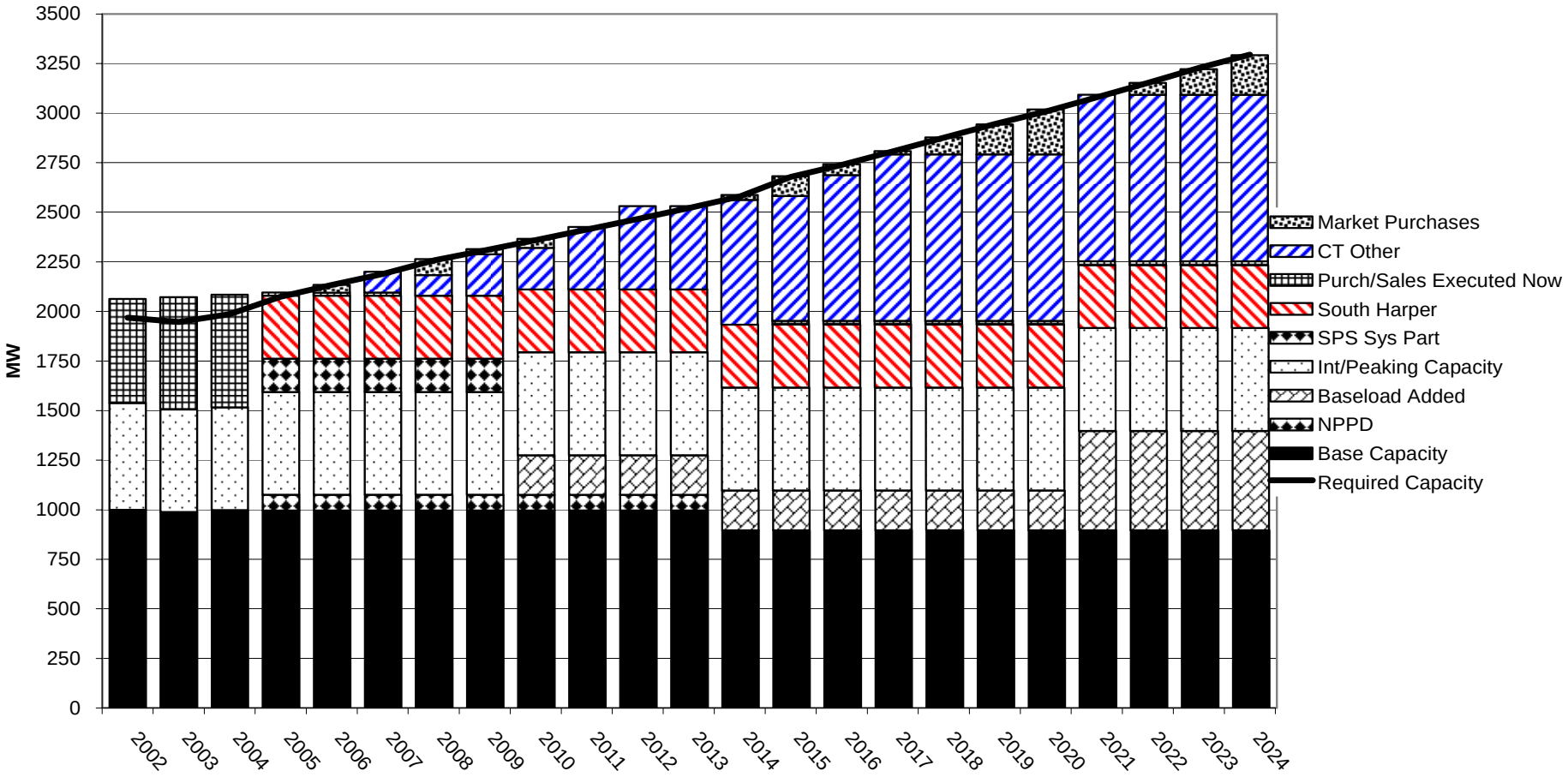
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Required Capacity	1968	1947	1986	2075	2134	2189	2257	2308	2360	2413	2466	2522	2580	2678	2739	2807	2876	2945	3008	3080	3153	3228	3295
Installed Base Capacity	998	987	997	996	996	996	996	996	996	996	996	996	896	896	896	896	896	896	896	896	896	896	896
Installed Int/Peaking Capacity	539	518	518	518	518	518	518	518	518	518	518	518	518	518	518	518	518	518	518	518	518	518	518
Purch/Sales Committed	525	565	568	15	15	15	(5)	(5)	(5)	(5)	(5)	(5)	(5)	20	20	20	20	20	20	20	20	20	20
South Harper				318	318	318	318	318	318	318	318	318	318	318	318	318	318	318	318	318	318	318	318
SPS Sys Part	0	0	0	168	168	168	168	168	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NPPD				78	78	78	78	78	78	78	78	78	0										
CT Other						105	105	210	210	315	420	420	630	630	735	840	840	840	840	840	840	840	840
Baseload Added									200	200	200	200	200	200	200	200	200	200	200	500	500	500	500
Market Purchases				0	40	0	80	25	45	0	0	0	25	100	55	15	85	150	225	0	60	130	200
Total Capacity	2062	2070	2083	2094	2134	2199	2259	2309	2361	2421	2526	2526	2583	2683	2743	2808	2878	2943	3018	3093	3153	3223	3293
Capacity Margin	16.0%	17.3%	16.1%	12.8%	12.0%	12.4%	12.1%	12.0%	12.0%	12.3%	14.1%	12.1%	12.1%	12.1%	12.1%	12.0%	12.0%	11.9%	12.3%	12.4%	12.0%	11.8%	11.9%

Preferred Plan of 1/20/2005

Year	Additions	Market MW
2005	Build 315-318 MW CT; Buy 5 Yr 150 MW SPS; Buy 9 Yr 75 MW NPPD; Extend Existing 100 MW NPPD	0
2006		40
2007	Build 105 MW CT	0
2008		80
2009	Build 105 MW CT	25
2010	Build 200 MW Base-Load	45
2011	Build 105 MW CT	
2014	Build 210 MW CT	25
2015		100
2016	Build 105 MW CT	55
2017	Build 105 MW CT	15
2018-		85-225
2021	Build 200-300 MW Base-Load	20

From presentation to MOPSC Staff on January 20, 2005

Schedule JGB-6 – Preferred Plan of January 20, 2005



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 electrical production and Related facilities in unincorporated areas of Cass County, Missouri near the town of Peculiar.	)	Case No. EA-_____

County of Jackson)
) ss
State of Missouri)

AFFIDAVIT OF JERRY G. BOEHM

Jerry G. Boehm, being first duly sworn, deposes and says that he is the witness who sponsors the accompanying testimony entitled "Direct Testimony of Jerry G. Boehm;" 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.

Jerry G. Boehm

Subscribed and sworn to before me this 25th day of January, 2006.

Notary Public

My Commission expires:

8-20-2008

Notary Public Notary Seal State of Missouri

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