Exhibit No.:
Issues: Construction of South Harper
Witness: Terry S. Hedrick
Sponsoring Party: Aquila Networks-MPS
Case No.: EA-

Before the Public Service Commission
of the State of Missouri

Direct Testimony

of

Terry S. Hedrick

TABLE OF CONTENTS

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

Q. Please state your name and business address.

A. Terry S. Hedrick, 10700 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") as Generation Services Manager.

Q. Briefly describe your education and work experience.

A. In 1985 I received a Bachelor of Science degree in Mechanical Engineering from the University of Missouri – Columbia. After receiving my degree, I joined the Missouri Public Service Company, which later became UtiliCorp and recently Aquila, as Staff Engineer at the Sibley Generating Station. From that time until 1998 I held positions of Maintenance Engineer and Assistant Station Superintendent. In 1998 I began working at the Aquila Raytown office in the capacity of Senior Production Engineer. From that time until present I have held the positions of Director of Generation, and my current position, Generation Services Manager.

Executive Summary

Q. What is the purpose of the testimony you now are submitting?

A. The purpose of my testimony is to address specific issues relating to the approach Aquila Networks – MPS ("Aquila" or "MPS") utilized in the site selection process for the South Harper Peaking Facility. A site selection study was prepared by Sega Inc., an engineering consultant, at the direction of Aquila, initiated as the result of the successful

response to a Request for Proposal (RFP) for Capacity & Energy for Aquila Networks – Missouri issued January 22, 2003 (refer to Schedule JGB-3 in the testimony of Aquila witness Jerry Boehm). The RFP was issued by Aquila's Energy Resources Group and the need for the peaking facility will be addressed by Company witness Jerry Boehm. It should be noted that the analysis described within this testimony is from the perspective of the Utility. Chris Rogers, Sega Inc. - Vice President will provide separate testimony on the site selection process from the perspective of the engineering consultant.

RFP Issued January 22, 2003

Q. Briefly describe the relationship of the RFP issued January 22, 2003, and the site selection process?

A. As part of the Integrated Resource Plan (IRP), the Aquila Energy Resources Group developed and issued an RFP. The self build option was developed to address the RFP, which in this case resulted in the award of the project to satisfy a component of the capacity requirements. Based on this award, a comprehensive site evaluation study was then initiated. The RFP provided constraints such as delivery points and availability which became factors in the site study.

Load Issues

Q. What is a load center?

A. A load center for an electric utility is an area which has high electrical demand. A load center typically has a concentration of homes, businesses, schools, and other customers that have electrical power requirements. A load pocket is an area of load that may not have sufficient transmission import capability to serve the load from generating resources outside the area.

Q. Why do utilities need to have generation and transmission in and around load centers?

A. As described previously, the areas that have a high concentration of electrical usage require infrastructure of generation, transmission, and distribution to provide reliable electrical service. In times of peak demand for electricity, it is imperative that the infrastructure be in place to support the demand. If generation and transmission are located far from load centers there is increased opportunity to experience deficiencies that could impact service via interruptions, curtailments, outages, and/or voltage issues.

Q. Given that peaking facilities need to be located near load centers, does this prevent siting a facility in a rural location?

A. No. Schedule TSH-1 is an aerial photograph which shows the South Harper peaking facility and its proximity to residents in the area considered by many to be a rural area. To the extent possible, given other considerations that I will discuss later, Aquila siting plans do take into consideration the impact on nearby landowners. Aquila witness Norma Dunn discusses in her direct testimony the land buffer that will be retained between the plant and existing residences, along with many of the steps that the Company has taken in an attempt to mitigate any impact on nearby residents and to respond to their expressed concerns.

Moreover, even if it was possible to find a site located miles away from any residences, consideration would need to be given to the potentially greater impact in cost and land use concerns required to transport the power from isolated generation sites to the load. Aquila witness Carl Huslig addresses in more detail the potential impact on land owners which results from not locating peaking facilities near load centers. Finally, it has been Aquila's experience that once a peaking facility is in place residential development of the

surrounding area is not hindered. As examples, Schedule TSH-2 is an aerial photograph of Aquila's Greenwood Energy Center and Schedule TSH-3 is an aerial photograph of an Independence Power & Light Energy Facility. Both locations are surrounded by upscale housing development which took place subsequent to the construction of peaking plants similar to the South Harper Peaking Facility. In fact, adjacent to the South Harper peaking facility is a gas processing station owned and operated by Southern Star (formally Williams), which has been in existence since the mid-1950s.

Site selection criteria

Q. What are the major components of typical site selection criteria?

A. There are numerous considerations required for site selection criteria, however, some of the basic components are: Electric Transmission Access, Natural Gas Supply, Air Permit Considerations, Delivery Infrastructure, and Potable Water Supply. These are discussed below.

Electrical Transmission Access: For a medium-size or larger generating facility, there must be an ability to interconnect with transmission on the 161kV or 345kV transmission system and for power to flow, with reasonably priced upgrades if required, to the load. To address the potential for continually evolving rules on interconnection and transmission access, it is preferable that the interconnection be located within the service territory and on the company's transmission system. The transmission impact study will determine how additional generation at the site will impact other systems within the Aquila system and neighboring systems. Depending on the results of the impact study, the additional generation could provide benefits to the system with minimal upgrades, or there could be significant required upgrades which would then be factored into this

criterion. The ability to interconnect with other systems outside the Aquila system is also factored into the siting evaluation.

Natural Gas Supply: Peaking generation facilities typically use pipeline natural gas as the primary fuel supply. As a result, the location must be in the proximity of interstate natural gas pipelines. Location next to local distribution companies ("LDC") is generally not preferred due to the additional LDC transport charge. In addition, the pipeline must have sufficient size, capacity, and pressure to deliver the required amounts of fuel to power the equipment. Areas with multiple pipelines and/or multiple suppliers are ranked higher than areas do not. Multiple pipelines will help ensure reliability, while multiple suppliers provide competition to promote low cost fuel options. Some fuel suppliers have operational constraints that are difficult for peaking facilities to accommodate, and those factors must be evaluated.

Air Permit Considerations: For any new generation a facility must be able to obtain a Permit to Construct from the Missouri Department of Natural Resources ("DNR"). Peaking facilities that operate on natural gas must be able to meet all of the DNR requirements.

Delivery Infrastructure: The turbines and generators for peaking facilities typically are delivered from the manufacturer by rail. The equipment is off-loaded and then loaded on to heavy haul trucks to be delivered to the final destination. As a result, it is beneficial to have a rail siding in the general area of the site to limit the amount of heavy haul distance and avoid structures (such as bridges or other overpasses) that cannot accommodate shipment size or weight. Highway routes and bridge configurations are therefore factors that determine the ability to transport large components to the site.

Potable Water Supply: Peaking facilities utilize potable water for various cooling processes and fire protection. The proximity of local water supply is necessary to provide cooling water at limited times for cooling during operation.

Q. There are those who say that power plants should be sited out in areas with no residents nearby, what is your response?

A. The ideal power plant site would be one in a load center, with all required infrastructure (transmission, gas, water, rail access) on or near the site, with no nearby residents. On the resident distance question, first a determination would be required of what constitutes nearby residents. Some of the opposition to the South Harper Peaking Facility has come from residents that live over a mile away from the plant. During the site selection review, potentially suitable sites that contained no residences within a mile radius were not identified.

Q. How do the infrastructure and location requirements for a peaking facility such as South Harper compare to other power plants?

A. Peaking facilities utilize natural gas for their fuel and typically are located close to the load centers. The infrastructure for this type of facility is small compared to other types of generation, including base load projects, such as coal fired plants or combined cycle plants. Coal power plant sites can be several thousand acres in size. Combined cycle plants have larger land requirements than peaking facilities, due to the additional equipment (steam turbine and heat recovery steam generator) and have much greater water supply requirements due to the steam cycle. Other utilities within this area and region typically site peaking facilities in and around the load centers and load growth areas. As a general comment, the Aquila service territory serves cities, towns, and rural

areas and in general does not have areas completely void of residents. The site criteria described previously provides the details necessary to locate areas and ultimately sites.

Site Selection

Q. Aquila initially intended to install three turbines at a site near Harrisonville. Was the South Harper site preferable to the site near Harrisonville?

A. Yes. As noted in the testimony of Chris Rogers, the South Harper site was selected over 11 other sites, including the site near Harrisonville. A site North of Harrisonville did rank at the top of the initial comprehensive site evaluation summary sheet performed by Sega Inc. (refer to Schedule CR-1 in Chris Rogers Testimony). Efforts were made to establish this site for construction, however, the Aquila request for a Special Use Permit from Cass County was denied. As a result, the comprehensive site evaluation summary sheet was updated at which time the South Harper site was first identified and became the preferred site (refer to Schedule CR-2 in Chris Rogers Testimony).

Q. In the final analysis, why was the South Harper site selected?

A. The South Harper site ranked number 1 in the final comprehensive site evaluation summary sheet (refer to Schedule CR-2 in Chris Rogers Testimony). This was based on the items previously discussed in the site selection criteria. The following is a summary:

Electrical Transmission Access: The existing 69kV transmission (north/south) could be (and was) upgraded to 161kV on the existing right-of-way. No additional easements were required for this line upgrade. The site is located 5 miles south of the Aquila 345kV Martin City-Pleasant Hill 345kV transmission line, and the line upgrade allowed construction of a substation that would allow the plant to feed both 161kV and 345kV transmission lines in the area.

Natural Gas Supply: The location was adjacent (contiguous) to the existing Southern Star gas compressor station, thus minimizing interconnection cost and supporting the concept that the plant would be compatible with land use for existing, adjacent facilities. The gas compressor station was long established, having been initially constructed in the 1950s. Interconnection was also accomplished with the Panhandle interstate pipeline located 2 miles south of the site. Two fuel sources were utilized to increase reliability and reduce fuel cost through competition for gas transport.

Air Permit Considerations: The site satisfied the conditions of the Department of Natural Resources to allow for a Permit to Construct. The site is located outside of a non-attainment area, avoiding potential offset costs.

Delivery Infrastructure: The turbines and generators were off-loaded in nearby Pleasant Hill, thus the highway heavy haul was minimized and able to avoid long distance haul and bridge constraints.

Potable Water Supply: Water district #7 was able to supply the requirements via a 6" water loop.

In summary, the South Harper site contained all of the site selection criteria and was located in the Aquila service territory in and around the load center and projected load growth area.

Q. Does this conclude your testimony?

A. Yes, it does.

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 TERRY S. HEDRICK

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

Terry S. Hedrick

Terry S. Hedrick

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

Terry D. Lutes

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