

Exhibit No.: 036  
Issues: Fuel Adjustment Clause  
Witness: Robert L. Davis  
Sponsoring Party: Aquila Networks-MPS  
& L&P  
Case No.: ER-2007-0004

Before the Public Service Commission  
of the State of Missouri

**FILED**  
APR 30 2007  
Missouri Public  
Service Commission

Rebuttal Testimony

of

Robert L. Davis

\*\*Denotes Highly Confidential Information\*\*

**NP**

*Aquila* Exhibit No. 36  
Case No(s) ER-2007-0004  
Date 4-12-07 Rptr KS



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**ON BEHALF OF AQUILA, INC.**  
**D/B/A AQUILA NETWORKS-MPS AND AQUILA NETWORKS-L&P**  
**CASE NO. ER-2007-0004**

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1 South Carolina, South Dakota, Minnesota, and before the Federal Energy Regulatory  
2 Commission. A summary of my testimony experience is included in Schedule RLD 1.

3 Q. On whose behalf are you testifying?

4 A. In this proceeding, I am testifying on behalf of Aquila, Inc. ("Aquila") in Case No. ER-  
5 2007-0004 before the Commission. Aquila retained R. W. Beck, Inc. to review its  
6 existing and planned power supply portfolio to determine whether the combination, or  
7 mix, of resources in the portfolio was consistent with an optimum mix of such power  
8 supply resources. I was designated the project manager and principal analyst for this  
9 assignment.

10 Q. Are you sponsoring any schedules as a part of your prepared testimony?

11 A. Yes, I am sponsoring Schedule RLD 1, noted previously, and Schedule RLD 2, which  
12 documents an analysis I performed in support of this testimony.

13 Q. Were these schedules prepared by or under your supervisions?

14 A. Yes.

15 **PURPOSE AND SUMMARY OF TESTIMONY**

16 Q. What is the purpose of your testimony?

17 A. On behalf of Aquila, I will respond to and rebut the January 18, 2007 testimony of Office  
18 of the Public Council witness Ryan Kind with regard to Mr. Kind's comments on the  
19 appropriateness of the existing Aquila resource portfolio and the adequacy of future  
20 resource plans made by Aquila.

21 Q. Please summarize your testimony.

22 A. The power supply portfolio maintained by Aquila in 2005 is reasonably consistent with a  
23 hypothetically optimum power supply mix in that year. Furthermore, the planned



1 resource expansion identified as the Preferred Plan plan in Aquila's April 2005 Integrated  
2 Resource Plan ("2005 IRP") is reasonably consistent with a theoretically optimum  
3 expansion plan. Contrary to Mr. Kind's testimony, where, on page 11 of his testimony,  
4 he claims that Aquila has historically made poor power supply planning decisions and  
5 claims that the 2005 IRP is not credible, my findings indicate that his claims are  
6 unfounded and in error and that both the existing and planned Aquila power supply  
7 resource portfolios are reasonably well balanced and should produce reasonable levels of  
8 power supply costs.

9 Furthermore, Mr. Kind asserts that a Fuel Adjustment Clause ("FAC") should not be  
10 granted to a utility that is exposed to fuel price volatility that is a direct result of its  
11 resource planning decisions. However, contrary to Mr. Kind's assertions, an optimum  
12 power supply plan necessarily assumes some exposure to volatile fuels, since it is neither  
13 possible nor prudent to eliminate all power supply resources from a portfolio that depend  
14 on volatile priced fuels. A well-balanced, least cost power supply portfolio properly  
15 blends high fixed cost, low variable cost, base-load assets with lower fixed cost  
16 intermediate and peaking assets (which typically depend on higher-cost, more volatile  
17 priced fuels) to derive the lowest total power supply cost for the utility and its customers.

18 Prohibiting access to a FAC may serve as an inducement to cause a utility to choose a  
19 power supply plan that is unreasonably dependent on base-load assets as a means to  
20 mitigate its exposure to fuel prices, which may not produce the lowest possible total  
21 power supply costs for its customers.



**SUMMARY OF ANALYSIS CONDUCTED TO INVESTIGATE THE AQUILA POWER**

**SUPPLY PORTFOLIO**

Q. What investigations or analyses did you conduct to rebut the testimony of Mr. Kind?

A. A generating resource dispatch and expansion optimization model was used to compare the existing and planned Aquila power supply portfolio to a theoretically optimum mix of base, intermediate, and peaking resources. The methodology, major assumptions, and analytical results of the analysis are set forth in the attached Schedule RDL 2.

Q. Please briefly describe the analysis you conducted to investigate the existing and planned power supply portfolio of Aquila.

A. A generating resource dispatch and expansion model was used to estimate and to project the costs of generation production to serve the combined electric system loads of Missouri Public Service and St. Joseph Light & Power (collectively, the "Electric Systems"). Variable operating costs from existing and future resources were combined with incremental fixed operating costs and levelized capital costs of potential power supply expansion resource alternatives, to compute portfolio costs for comparing expansion plans. The model included linear programming ("LP") optimization algorithms to identify a generating resource plan that would result in the lowest portfolio costs.

Q. What period of time was investigated through your analysis?

A. The mix of Aquila power supply resources was investigated under two different perspectives: a historical perspective and a forward-looking, or planning perspective. The historical perspective was performed to review and assess the adequacy of the current Aquila resource portfolio in calendar year 2005 (the "Historical Perspective").



1 The forward-looking perspective investigated the mix of planned resource additions  
2 developed for the Preferred Case identified in the 2005 IRP to review and assess the  
3 adequacy of the mix of the initial planned resource additions over calendar years 2010  
4 through 2015 (the "Planning Perspective").

5 Q. What power supply resources were considered as alternatives when developing the  
6 theoretically optimum power supply plans?

7 A. Three generating resource expansion alternatives were considered for the least-cost  
8 expansion plans developed by the LP model, including: a sub-bituminous coal-fired  
9 supercritical steam facility (base-load resource), a natural gas-fired combined-cycle  
10 facility (intermediate resource), and a natural gas fired simple-cycle combustion turbine  
11 facility (peaking resource). Additionally, for the Planning Perspective, market capacity  
12 purchases were modeled for selection by the LP optimization consistent with assumptions  
13 contained in the 2005 IRP.

14 Existing and planned resources of the Electric System were classified as base,  
15 intermediate, or peaking categories to permit comparison of the actual and planned  
16 Aquila resources to the resource portfolios developed through the LP optimization  
17 process. The analysis was performed by assuming the Electric System serves its entire  
18 load from its own resources (i.e., external market sales and purchases were not modeled).

19 Q. What major sources of information were used in your analysis?

20 A. Modeled resource existence, operating characteristics, and operating and maintenance  
21 costs for existing resources were based on assumptions consistent with the 2005 IRP. To  
22 provide for a more realistic investigation of the Aquila portfolio given market conditions  
23 that have changed since the 2005 IRP, fuel prices, emission prices, and modeled costs



1 and operating characteristics for resource expansion alternatives were derived from  
2 assumptions developed by Aquila for use in its current IRP analyses.

3 Q. What were the major findings of your analysis?

4 A. The findings of the analysis indicate that both the current and planned power supply  
5 resources of the Electric Systems reasonably align with a theoretically optimum power  
6 supply mix. For the Historical Perspective, the variation between the actual and modeled  
7 optimum power supply portfolio in 2005 was significantly smaller than the magnitude of  
8 the capacity rating of a single generating resource that Aquila would need to rely upon to  
9 develop its portfolio. For the Planning Perspective, both the 2005 IRP and the  
10 theoretically optimum power supply plan identified the same types of resources for power  
11 supply expansion, and differences in magnitudes for these resources could be readily  
12 explained from the different modeling approaches used for the two analyses.

13 Q. With regard to your review of Aquila's power supply mix in 2005, please elaborate on  
14 your findings.

15 A. The analysis shows that if Aquila had had perfect foresight and could have installed all  
16 new resources to satisfy its entire supply portfolio in 2005 that more base-load and  
17 intermediate capacity and less peaking capacity would be desired as compared to the  
18 existing supply portfolio. The quantity of capacity in the existing portfolio that would  
19 need to be shifted from one category (base, intermediate, or peaking) to another to  
20 achieve an optimum mix of resources is small considering the typical size of generating  
21 resources (approximately one-twentieth the size of a typical coal-fired steam resource and  
22 one-fourth the size of a typical combined-cycle resource, respectively). In order for  
23 Aquila to have exactly matched the hypothetical optimum mix identified by the Analysis,



1 it would have been necessary for Aquila to have purchase power in relatively small  
2 quantities. Furthermore, because capacity can be added to a power supply portfolio only  
3 in discrete increments, it is not uncommon for a portfolio to have a mix that is different  
4 from a theoretically optimum mix by the magnitude of the resources that are added to the  
5 portfolio. The relatively small differences between the existing and hypothetical 2005  
6 power supply portfolios indicate that the Aquila portfolio that existed in 2005 is highly  
7 consistent with a theoretically optimum power supply mix.

8 Q. With regard to your review of Aquila's planned power supply expansion reported in the  
9 2005 IRP, please elaborate on your findings.

10 A. The analysis found that planned generation additions referenced for the 2005 IRP are  
11 reasonably consistent with a theoretically optimum expansion plan. The Preferred Plan  
12 resource expansion plan for the Electric Systems presented in the 2005 IRP was  
13 compared to a theoretically optimum expansion plan beginning in 2010. Both the 2005  
14 IRP and the optimum plan suggest that through 2015 Aquila can satisfy future resource  
15 needs of the Electric Systems at the lowest cost using a mixture of resources that include  
16 power purchases from new coal-fired steam resources and either purchases of market  
17 capacity or the installation of new natural gas-fired combustion turbines.

18 The power supply expansion plan presented in the 2005 IRP and the theoretically  
19 optimum power supply expansion plan developed through the analysis differ slightly in  
20 the quantities and timing of resources; however, the differences are readily explained  
21 given that market energy transactions were not modeled in the analysis. Because no  
22 external market energy transactions were modeled, results of the analysis favored a



1 conservative, self-build, power supply plan, resulting in a greater percentage of base-  
2 loaded resources than identified in the 2005 IRP.

3 **ADEQUACY OF AQUILA RESOURCE PORTFOLIO**

4 Q. At line 15 on page 11 of the Direct Testimony of Mr. Kind, he states that "Most of the  
5 fuel and purchased power cost volatility that Aquila faces at this time is the result of poor  
6 resource planning decisions that go back as far as Aquila's ... decision to build the Aries  
7 plant as a merchant plant in order to have more generating capacity to meet its native  
8 load." Do you agree with this statement?

9 A. No. While it may be true that Aquila faces fuel price volatility from natural gas-fired  
10 generating resources, as do all owners and operators of natural gas-fired resources, my  
11 analysis indicates that Aquila's purchase of capacity from the Aries plant in 2005 is  
12 reasonably consistent with a robust portfolio of power supply resources in that year and  
13 does not constitute a poor resource planning decision.

14 The analysis presented in my testimony indicates that Aquila could have obtained the  
15 lowest total power supply costs for the Electric Systems in 2005, when considering actual  
16 fuel prices in that year, by having a portfolio that was approximately 54.6% base-load  
17 resources, 13.8% intermediate resources, and 31.6% peaking resources. The variation of  
18 the 2005 Aquila resource portfolio from these hypothetically optimum quantities (a  
19 variation of approximately 41 megawatts of base-load capacity and approximately 153  
20 megawatts of intermediate capacity) are significantly less than the size of typical coal-  
21 fired steam resources and combined-cycle resources that could be used to satisfy these  
22 quantities.



1 Because these quantities are significantly smaller than the typical size for these resources,  
2 even if Aquila had been able to perfectly predict prior to 2005 what optimum mix of  
3 resources would be required for 2005, Aquila's only option would have been to purchase  
4 relatively small quantities of coal-fired and combined-cycle power from other power  
5 supply providers. It is not clear that such power supply options were available for  
6 purchase from other providers. Furthermore, it could be argued that Aquila's take of less  
7 than the full output available from the Aries plant reflects a prudent decision, since the  
8 acquisition of the full output from Aries would exceed the optimum amount of  
9 intermediate power supply resources determined by my analysis.

10 Q. In response to the last question on page 9 of his Direct Testimony, Mr. Kind asserts, in  
11 part, that the Public Council believes that the Commission should consider certain aspects  
12 of a utility's situation when making an FAC determination, including: vulnerability to  
13 changes in fuel and purchase power costs when such changes are beyond a utility's  
14 control, and whether the utility has taken prudent actions to hedge its fuel and purchase  
15 power costs through appropriate planning and hedging practices. Do you agree with his  
16 assertions?

17 A. Not entirely. I agree that a utility's exposure to fuel and market price volatility should be  
18 considered when determining an FAC application; however, I do not agree with Mr.  
19 Kind's characterization that only those costs that are outside a utility's control or cannot  
20 be "appropriately" hedged should be considered. Mr. Kind apparently concludes that  
21 exposure to fuel or power price volatility in and by itself is problematic and possibly  
22 symptomatic of poor planning or decision making by the utility. However, prudent  
23 resource planning necessitates the installation or acquisition of a mix of resource types



1 fired by different fuel types and does not require fully hedging all fuel price volatility,  
2 which is a potentially costly and highly risky endeavor.

3 Typical utility planning practices suggest that high fuel prices and volatility are to be  
4 expected for a portion of a power supply portfolio in order to avoid incurring unnecessary  
5 high fixed costs of capacity or hedge premiums. While it is possible to develop a power  
6 supply resource plan that is fully hedged or experiences virtually no price or cost  
7 volatility, resulting from the nature of the generating resources installed and fuel  
8 supplied, such a plan would likely result in very high fixed costs and, therefore, total  
9 power supply costs that were higher than a plan that reflected a moderate amount of fuel  
10 price risk.

11 Because a least-cost supply plan can, and should, include some fuel price exposure, it is  
12 appropriate for the Commission to grant FAC applications when fuel price volatility is  
13 present, even when such volatility occurs as a direct consequence of utility resource  
14 planning decisions. If a utility is deliberately excluded from FAC cost recovery, then the  
15 plans of the utility might ultimately tend toward high fixed cost and low variable cost  
16 plans that could ultimately result in a higher average cost for the utility's customers.

17 Q. In response to the second question on line 10 of page 13 of his Direct Testimony, Mr.  
18 Kind claims, as paraphrased, that Aquila has a portfolio of resources that creates  
19 exposure to fluctuations in the price of natural gas and the cost of purchase power but that  
20 such exposure is caused by risky investment decisions of Aquila management and,  
21 therefore, the Commission should not grant an FAC to address this exposure. Do you  
22 agree with this claim?



1 A. No. The analysis presented in my testimony suggests that in 2005 Aquila maintained a  
2 power supply portfolio that was reasonably consistent with a hypothetically optimum  
3 power supply mix for that year. The resource portfolio for Aquila in 2005 contains a  
4 purchase from the Aries plant, of which Mr. Kind apparently finds fault, but which, if  
5 properly sized, is identified in my study to be a necessary and reasonable component of  
6 an optimum power supply portfolio.

7 My investigations indicated that an optimum power supply portfolio for Aquila in 2005  
8 would include 287 megawatts of combined-cycle capacity and energy. While Aquila's  
9 average take from the Aries facility in 2005 was approximately half of that computed for  
10 an optimum plan, had Aquila been able to negotiate a continuation of this contract, the  
11 contract amount would have resulted in a slight over-supply of intermediate resources in  
12 2005. Additionally, if Aquila had retained ownership or full output from the Aries  
13 facility at the full cost of a combined-cycle resource, my analysis indicates that Aquila  
14 would have been burden with approximately twice as much intermediate capacity as was  
15 reasonable for it to own or purchase.

16 Furthermore, Aquila's 2005 IRP identified a plan for resource expansion that, if carried  
17 out, would result in the acquisition of new power supply resources that were reasonably  
18 consistent with a theoretically optimum expansion plan.

19 In contrast, Mr. Kind has offered neither documentation nor analyses to support his  
20 claims that Aquila's existing power supply portfolio or its power supply plans cause  
21 unwarranted exposure to fuel price volatility. Moreover, based on the criteria that Mr.  
22 Kind lays out in his own testimony, Mr. Kind must also demonstrate that any such undue  
23 exposure is a direct result of inappropriate or poor planning decisions made by Aquila



1 management before the Commission should consider disallowing an FAC. For reasons  
2 known only to Mr. Kind, he has not provided any verifiable evidence to support his  
3 claims.

4 Throughout his testimony, Mr. Kind states that Aquila has made “poor planning  
5 decisions” (on line 16 of page 11), “was focusing on making risky investments outside  
6 Missouri” (beginning on line 16 of page 13), and that its 2005 IRP “was not credible  
7 effort” (on line 23 of page 11). However, Mr. Kind offers neither credible documentation  
8 nor verifiable analyses to substantiate these claims nor has he demonstrated that any of  
9 these claims resulted in Aquila’s customers being unreasonably exposed to high or  
10 volatile fuel prices. In contrast, the analysis that I have performed, which is available for  
11 review and verification, indicates that the power supply resource portfolio maintained and  
12 planned by Aquila is reasonable and consistent with a mix of power supply resources that  
13 should provide the lowest total average costs to Aquila and its customers.

14 Q. Does this conclude your prepared testimony?

15 A. Yes.



Mr. Davis, a Senior Director with R. W. Beck, Inc., has over twenty years of experience in electric industry planning and operation. Since joining R. W. Beck, he has been responsible for various electric industry studies relating to integrated resource planning, price forecasting for power and fuel markets, wholesale power market operations, locational marginal pricing, market power concerns, demand-side planning, generation simulation, risk and probabilistic analyses, RFP development and evaluation, and power supply contracting. His experience encompasses fuel procurement, IPP/cogen assessment, alternative generation technology evaluation, wholesale and retail rate design, cost of service analyses, load and customer forecasting, customer surveying, and financial reporting for revenue bond and capital market issuance.

Over the last several years, Mr. Davis has been responsible for evaluating deregulated wholesale markets throughout much of North America, including the development of market simulation models to forecast and analyze future power prices, market transactions, project revenue, portfolio value, stranded costs, and market uncertainty. He has investigated and advised clients on issues they will face under deregulation, including the potential timing, structure, and operation of deregulated bulk power markets. Mr. Davis has performed economic feasibility studies investigating the development or acquisition of tens of thousands of megawatts of generating capacity throughout North America. Mr. Davis has also submitted testimony before state commissions on power market deregulation and before FERC in support of market power assessments for generation owners.

Mr. Davis has developed several comprehensive integrated resource plans and demand-side plans for electric utilities. He has applied optimization, stochastic, and scenario-based techniques to assist clients in identifying least-cost, flexible power supply plans. He has evaluated the effectiveness of existing demand-side programs, recommended elimination or modification of ineffective programs, designed new demand-side programs, and developed long-range implementation and marketing plans. In support of his resource plans and evaluations, Mr. Davis has submitted testimony in several cases before state regulatory bodies and has also presented findings and conducted training workshops on integrated resource planning evaluations and marketing plans to utility staff and management, citizen groups, governing boards, and commissions.

Prior to joining R. W. Beck, Mr. Davis worked for five years as a utility analyst in the Strategic Planning Department of a municipal electric, natural gas, water and wastewater utilities system located in the southeastern United States. While at the University of Florida pursuing a Bachelor of Science degree in Engineering Sciences, Mr. Davis focused on an interdisciplinary study of alternative energy production technologies and energy conservation. Prior to beginning his professional career, his experience included research and development of state residential building codes and energy auditing of utility customers.

## Robert L. Davis

Senior Director  
R. W. Beck, Inc.

University of Florida  
B.S. of Engineering Sciences

### KEY EXPERTISE

- > Market Price and Revenue Projections
- > Locational Marginal Pricing
- > Integrated Resource Planning
- > Regulatory Assessment
- > Forecasting and Customer Service
- > Rates and Financial Analyses
- > Engineering Reports



Schedule RLD 1  
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## Relevant Expertise

### Deregulated Electric Power Markets

- Market Price and Revenue Projections
- Locational Marginal Pricing
- Stranded Cost
- Market Uncertainty
- Deregulation Trends

Mr. Davis has directed or performed over fifty deregulated wholesale power market studies throughout the Eastern Interconnect to develop regional, zonal, and locational market price projections for utilities, developers, lending institutions, and end-use customers. Mr. Davis has also participated in studies investigating levels of stranded costs that electric utilities could face under retail deregulation. Mr. Davis has submitted testimony in support of his studies and analyses and was the lead market analyst in the largest merchant project financing to-date in North America.

Many of the studies performed by Mr. Davis rely upon comprehensive dispatch simulation models that span multiple NERC regions and incorporate detailed information regarding generating resource operating characteristics and transmission interconnections and constraints. He has developed seasonal, time-differentiated projections of market prices and has used the projections to predict revenues and operating costs for resources in deregulated wholesale electric power markets. He has developed market revenue projections for regulated and non-regulated resource portfolios, comparing net revenues to fixed obligations to assess market bidding strategies and potential levels of stranded costs.

Mr. Davis has performed quantitative statistical analyses and system dynamic modeling to evaluate uncertainties inherent in projecting future market conditions and prices. These evaluations have included Monte Carlo and binomial analyses integrated with structural simulation models, technical modeling evaluations using ex post probabilistic tools and models, causal investigations to intuit balancing and reinforcing patterns in complex energy markets, and dynamic system modeling to postulate electric industry business cycles and gauge effects of proposed market rules.

Mr. Davis has directed and participated in client and state task forces investigating the proposed deregulation of electric power markets throughout the United States. These investigations have identified the various rules and procedures being proposed nationally and regionally throughout the country, including the implementation of independent system operators, regional transmission organizations, power exchanges, bidding and pricing mechanisms, and techniques for assessing utility stranded costs. Mr. Davis has researched methodologies and software tools that are available to model and project market prices and revenue and has recommended the acquisition of software tools and use of analytical techniques to clients and the Firm.

### Integrated Resource Planning

- Production Cost Modeling
- Probabilistic and Risk Analysis
- RFP Development and Analysis
- Conservation and Demand-Side Management
- Fuel Requirements/Procurement



Mr. Davis' has conducted several resource planning for electric utilities, joint action agencies, and G&T cooperatives. He has employed analytic techniques that include dynamic optimization, linear programming, scenario and sensitivity analyses, ex post stochastic/risk stress testing, market participation assessment, dispatch optimization, and reliability assessment. His experience incorporates conservation and demand-side planning, generation production costing analysis, supply- and demand-side RFP development and evaluation, merger and joint dispatch analyses, probabilistic and risk analysis, fuel requirements and procurement assessment, bidding for utility and non-utility power producers, direct load control planning, and alternative generation technology assessment.

Mr. Davis has performed various production costing analyses for power supply planning and operating cost projections, including research and screening of nontraditional technologies such as solar power, IGCC, CFB boilers, and fuel cells. He has drafted and analyzed requests for power supply proposals from utility and non-utility generators, evaluated contractual arrangements between non-utility generators and electric utilities, and developed long-range projections of electric utility payments for capacity and energy received from non-utility generators. Mr. Davis has also developed probabilistic models to analyze the uncertainties inherent in power supply planning, thereby assessing the associated range and probabilities of potential outcomes.

Mr. Davis has performed feasibility and cost effectiveness analyses of conservation, direct load control and interruptible load programs, including analyses of impacts to marginal operating costs, avoidance of capacity and purchased power costs for planned resource expansion, and impacts to wholesale and retail rates. His analyses of direct load control systems have assessed marginal cost impacts for joint action agencies and their member cities, including determination of cost of service impacts to wholesale rates resulting from rate design and member variations in appliance saturation and customer demographics.

### Regulatory Assessment

- Generation Needs Assessments
- Market Power Assessments
- Conservation
- Cogeneration/IPP

Mr. Davis has reviewed and assessed regulatory trends and has developed planning recommendations for electric utilities relating to conservation, cogeneration/IPP, and open access transmission of fuel and power. He has submitted testimony before several state regulatory bodies in support of power supply adequacy and need assessments for generation developers and electric utilities and demand-side resource plans. He has also filed testimony at FERC pertaining to the assessment of market power as required for market based tariffs of generation owners. Mr. Davis has also participated on statewide planning committees responsible for the development regional transmission organizations and self-service wheeling and demand-side management cost effectiveness rule making.

### Forecasting and Customer Service

- Customer & Demand-Side Research
- End-Use and Econometric Forecasting

Mr. Davis' range of expertise includes end-use and econometric forecasting, implementation of load research programs, surveys of customer preferences and demographics, surveys of appliance saturation and dwelling characteristics, market research on demand-side management potential, and preparation of ordinance tariffs and customer contracts.



## Custom Settings List

### HARDWARE STATUS

#### Machine Information

Resolution: 600dpi  
Language: American English

#### Hardware Specs

Base Memory: 128MB  
Optional Memory: 128MB  
Total Memory: 256MB  
HDD: 40.0GB

#### Firmware Version

PCU: 02.02.00  
MAIN: n2.01.  
BOOT: M5.28A  
SCANNER: 02.00.04

#### Installed Device

Paper Feeding Options: Large Capacity Cassette  
Paper Exit Options: Finisher  
Punch Unit: 3  
Extended: Not Installed

#### Total Count

1038810

### SOFTWARE STATUS

#### PCL Emulation

Font Source: Internal  
Font Number: 0  
Font: Courier  
Pitch Size: 10.00  
Point Size: 12.00  
Symbol Set: PC-8

#### Network Information

NIC Firmware Version: 01.00.07  
IP Address: 192.168.100.225  
IP Subnet Mask: 255.255.255.0  
IP Gateway: 192.168.100.1  
Device Name: SCB673C4  
Domain Name: Sharp-Printer  
Enable TCP/IP: Yes  
Enable DHCP: No  
Enable NetWare: No  
Enable EtherTalk: No  
Enable NetBEUI: No

### PRINTER CONDITION SETTINGS

#### Printer Default Settings

Smoothing: Off  
Copies: 1Set  
Orientation: Portrait  
Default Paper Size: 8½x11  
Default Paper Type: Plain  
Default Output Tray: Center Tray  
Line Thickness: 5  
2-Sided Print: 1-Sided

#### PCL Settings

PCL Symbol Set Setting: PC-8  
PCL Font Setting: Internal  
Courier  
Line Feed Code: CR/LF/FF  
Wide A4: Off

### INPUT TRAY SETTINGS

#### Tray Settings

Tray 1: Plain / 8½x11  
Tray 2: Plain / 8½x11  
Tray 3: Plain / 8½x14  
Tray 4: Plain / 11x17  
Tray 5: Plain / 8½x11  
Bypass-Tray: Plain / Unknown  
Auto Tray Switching: On

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2: COPY  
3: FAX  
4: I-Fax  
5: DOC. Filing

#### User Type Settings

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User Type 3:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3: Disable Staple
User Type 4:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4: Disable Punch
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Mr. Davis has prepared demand, energy, and customer forecasts for electric utilities and their member systems. He has developed forecasts of appliance saturation and dwelling types, and has developed models for assessing appliance efficiency trends and impacts. He has developed probabilistic models for projecting on- and off-peak consumption periods and has developed incentive rates to promote off-peak consumption. He has also drafted customer contracts and municipal ordinances and tariffs relating to demand-side management programs and electric service rates.

### Rates and Financial Analyses

- Cost of Service
- Interchange Pricing
- Incentive Rates

Mr. Davis has performed financial analyses involving projections of revenue requirements and debt coverage, marginal and embedded cost of service, determination of interchange pricing, development of incentive rates for promoting off-peak consumption and economic development, and production and embedded costs allocation for joint utility efforts.

### Engineering Reports

- Official Statements
- Annual Engineering Reports

Mr. Davis has reviewed utility operations relating to generation production, fuel purchases, transmission, distribution, facility maintenance, construction, customers, sales, revenue, and financing, and has developed engineering reports consistent with the requirements of bond issuances.



## TESTIMONY EXPERIENCE

FORUM / DATE:	South Dakota Public Utilities Commission / 2006
PROCEEDING:	Case No. EI05-022
MATTER:	Application for an Energy Conversion Facility Siting Permit for the Construction of the Big Stone II Project
PETITIONER:	Otter Tail Power Company on Behalf of the Big Stone II Co-Owners
SUBJECT:	Filed and oral testimony regarding integrated resource expansion analysis to determine need and integrated supply and demand-side plan for Central Minnesota Municipal Power Agency (a Big Stone II Co-Owner).
FORUM / DATE:	State of Minnesota, Office of Administrative Hearings for the Minnesota Public Utilities Commission / 2006
PROCEEDING:	OAH No. 12-2500-17037-2, MPUC Docket No. CN-05-619 and OAH No. 12-2500-17038-2, MPUC Docket No. TR-05-1275
MATTER:	Application for Certification of Transmission Facilities in Western Minnesota and in Application to the Minnesota Public Utilities Commission for a Route Permit for the Big Stone Transmission Project In Western Minnesota
PETITIONER:	Otter Tail Power Company and Others
SUBJECT:	Filed and oral testimony regarding integrated resource expansion analysis to determine need and integrated supply and demand-side plan for Central Minnesota Municipal Power Agency (a Big Stone II Transmission Project Co-Owner).
FORUM / DATE:	Florida Public Service Commission / 2005
PROCEEDING:	Docket No. 020233-EL
MATTER:	GridFlorida RTO Cost/Benefit Analysis Workshop
PETITIONER:	Seminole Electric Cooperative, Inc. and Florida Municipal Power Agency
SUBJECT:	Filed comments and oral testimony before the FPSC on the GridFlorida RTO cost-benefit study results. Review and comment on sponsor studies, including identification of methodological weaknesses, flawed assumptions, and erroneous results.
FORUM / DATE:	Florida Public Service Commission / 2004
PROCEEDING:	Docket No. 020233-EL
MATTER:	GridFlorida RTO Cost/Benefit Analysis Workshop
PETITIONER:	Seminole Electric Cooperative, Inc. and Florida Municipal Power Agency
SUBJECT:	Filed comments and oral testimony before FPSC on proposed GridFlorida RTO cost/benefit analysis. Review and comment on sponsor studies, including identification of concerns, requests for information, and recommendations for study modifications.



FORUM / DATE:	Federal Energy Regulatory Commission / 2002
PROCEEDING:	Docket Nos. ER99-3427-000 and ER00-2398-000
MATTER:	Triennial Market Power Update
PETITIONER:	Baconton Power LLC and SOWEGA Power LLC
SUBJECT:	Filed market power evaluation in compliance with FERC orders granting market-based rate authority for wholesale sales of electric energy and capacity.
FORUM / DATE:	Public Service Commission of the State of South Carolina / 2001
PROCEEDING:	Docket No. 2001-411-E
MATTER:	Application for Certificate of Environmental Compatibility and Public Convenience and Necessity
PETITIONER:	Greenville County Power, LLC
SUBJECT:	Filed and oral testimony on market assessment and State and regional impacts for determination of need for generating capacity in support of power plant siting.
FORUM / DATE:	Florida Public Service Commission / 2000, 2001
PROCEEDING:	Docket No. 001748-EC
MATTER:	Petition for Determination of Need for the Osprey Energy Center in Polk County
PETITIONER:	Seminole Electric Cooperative and Calpine Construction Finance Company, L.P.
SUBJECT:	Preparation of filed exhibits for power plant siting, determination of generation capacity need.
FORUM / DATE:	Florida Public Service Commission / 2000
PROCEEDING:	Docket No. 000289-EU
MATTER:	Petition for Determination of Need for an Electrical Power Plant in Lake County
PETITIONER:	Panda Leesburg Power Partners, L.P.
SUBJECT:	Filed testimony for power plant siting and economic and reliability assessment for determination of generation need.
FORUM / DATE:	Florida Public Service Commission / 2000
PROCEEDING:	Docket No. 000288-EU
MATTER:	Petition for Determination of Need for an Electrical Power Plant in St. Lucie County
PETITIONER:	Panda Midway Power Partners, L.P.
SUBJECT:	Filed testimony for power plant siting and economic and reliability assessment for determination of generation need.



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FORUM / DATE:	Public Utility Commission of Texas / 1995, 1996
PROCEEDING:	SOAH Docket No. 473-95-1820, PUC Docket No. 15100
MATTER:	Determinations Required by 32K of the Public Utility Holding Act and for Certification of Contract
PETITIONER:	Golden Spread Electric Cooperative, Inc.
SUBJECT:	Field and oral testimony on independent evaluation of power and demand-side RFPs in support of EWG filing.

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FORUM / DATE:	Florida Public Service Commission / 1995
PROCEEDING:	Docket No. 950446-EG
MATTER:	Adoption of Numeric Conservation Goals and Consideration of National Energy Policy Act
PETITIONER:	Florida Municipal Power Agency and Ocala Electric Utility
SUBJECT:	Filed testimony on evaluation of demand-side management measure cost-effectiveness and establishment of numeric goals.

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FORUM / DATE:	Florida Public Service Commission / 1995
PROCEEDING:	Docket No. 950455-EG
MATTER:	Adoption of Numeric Conservation Goals and Consideration of National Energy Policy Act
PETITIONER:	City of Vero Beach, Florida
SUBJECT:	Filed testimony on evaluation of demand-side management measure cost-effectiveness and establishment of numeric goals.

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**Review of Aquila Power Supply Mix**

Entire Schedule HC

Schedule RLD-2 NP



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

[illegible]

Robert L. Davis, being first duly sworn, deposes and says that he is the witness who sponsors the accompanying testimony entitled "Rebuttal Testimony of Robert L. Davis;" 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.

Subscribed and sworn to before me this 20th day of February, 2007.

My Commission expires: \_\_\_\_\_

8-20-2008



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



## Custom Settings List

### HARDWARE STATUS

#### Machine Information

Resolution: 600dpi  
Language: American English

#### Hardware Specs

Base Memory: 128MB  
Optional Memory: 128MB  
Total Memory: 256MB  
HDD: 40.0GB

#### Firmware Version

PCU: 02.02.00  
MAIN: n2.01.  
BOOT: M5.28A  
SCANNER: 02.00.04

#### Installed Device

Paper Feeding Options: Large Capacity Cassette  
Paper Exit Options: Finisher  
Punch Unit: 3  
Extended: Not Installed

#### Total Count

1038956

### SOFTWARE STATUS

#### PCL Emulation

Font Source: Internal  
Font Number: 0  
Font: Courier  
Pitch Size: 10.00  
Point Size: 12.00  
Symbol Set: PC-8

#### Network Information

NIC Firmware Version: 01.00.07  
IP Address: 192.168.100.225  
IP Subnet Mask: 255.255.255.0  
IP Gateway: 192.168.100.1  
Device Name: SCB673C4  
Domain Name: Sharp-Printer  
Enable TCP/IP: Yes  
Enable DHCP: No  
Enable NetWare: No  
Enable EtherTalk: No  
Enable NetBEUI: No

### PRINTER CONDITION SETTINGS

#### Printer Default Settings

Smoothing: Off  
Copies: 1Set  
Orientation: Portrait  
Default Paper Size: 8½x11  
Default Paper Type: Plain  
Default Output Tray: Center Tray  
Line Thickness: 5  
2-Sided Print: 1-Sided

#### PCL Settings

PCL Symbol Set Setting: PC-8  
PCL Font Setting: Internal  
Courier  
Line Feed Code: CR/LF/FF  
Wide A4: Off

### INPUT TRAY SETTINGS

#### Tray Settings

Tray 1: Plain / 8½x11  
Tray 2: Plain / 8½x11  
Tray 3: Plain / 8½x14  
Tray 4: Plain / 11x17  
Tray 5: Plain / 8½x11  
Bypass-Tray: Plain / Unknown  
Auto Tray Switching: On

1	2	3	4	5
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1: PRINT  
2: COPY  
3: FAX  
4: I-Fax  
5: DOC. Filing

#### User Type Settings

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User Type 3:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
User Type 4:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
User Type 5:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
User Type 6:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
User Type 7:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1: Fixed Paper Side  
2: Disable Duplex  
3: Disable Staple  
4: Disable Punch



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1	2	3	4	5
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1: PRINT

2: COPY

3: FAX

4: I-Fax

5: DOC. Filing

#### User Type Settings

	1	2	3	4	
User Type 1:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1: Fixed Paper Side
User Type 2:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2: Disable Duplex
User Type 3:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3: Disable Staple
User Type 4:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4: Disable Punch
User Type 5:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
User Type 6:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
User Type 7:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	