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Service Commission

Exhibit No.:

Issues: Sales & Rate Revenue

Witness: Janice Pyatte

Sponsoring Party: MO PSC Staff

Type of Exhibit: Direct Testimony

Case Nos.: ER-2004-0034  
& HR-2004-0024  
(Consolidated)

Date Testimony Prepared: December 9, 2003

**MISSOURI PUBLIC SERVICE COMMISSION**

**UTILITY OPERATIONS DIVISION**

**DIRECT TESTIMONY**

**OF**

**JANICE PYATTE**

**AQUILA, INC.**

**D/B/A AQUILA NETWORKS--MPS**

**AND AQUILA NETWORKS--L&P**

**CASE NOS. ER-2004-0034 & HR-2004-024**

Jefferson City, Missouri

December 2003

Exhibit No. 123

Case No(s). ER-2004-0034

Date 2/23/04 Rptr X

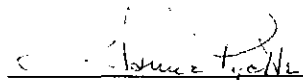
**BEFORE THE PUBLIC SERVICE COMMISSION  
OF THE STATE OF MISSOURI**

In The Matter Of Aquila, Inc. D/B/A Aquila )  
Networks L&P And Aquila Networks MPS ) Case No. ER-2004-0034 &  
To Implement A General Rate Increase In ) HR-2004-0024 (Consolidated)  
Electricity )


**AFFIDAVIT OF JANICE PYATTE**

**STATE OF MISSOURI** )  
 ) ss  
**COUNTY OF COLE** )

Janice Pyatte, of lawful age, on her oath states: that she has participated in the preparation of the following written Direct Testimony in question and answer form, consisting of 13 pages of Direct Testimony to be presented in the above case, that the answers in the attached written Direct Testimony were given by her; that she has knowledge of the matters set forth in such answers; and that such matters are true to the best of her knowledge and belief.

  
\_\_\_\_\_  
Janice Pyatte

Subscribed and sworn to before me this 8<sup>th</sup> day of December, 2003.

  
\_\_\_\_\_  
Notary Public

My commission expires \_\_\_\_\_ 2005

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**DIRECT TESTIMONY**  
**OF**  
**JANICE PYATTE**  
**AQUILA, INC.**  
**D/B/A AQUILA NETWORKS-MPS**  
**AND AQUILA NETWORKS-L&P**  
**CASE NOS. ER-2004-0034 AND HR-2004-0024**  
**(CONSOLIDATED)**

Q. Please state your name and business address.

A. My name is Janice Pyatte and my business address is Missouri Public Service Commission, P. O. Box 360, Jefferson City, Missouri 65102.

Q. What is your present position with the Missouri Public Service Commission?

A. I am a Regulatory Economist in the Energy-Economic Analysis Department, Operations Division.

Q. Would you please review your educational background and work experience?

A. I completed a Bachelor of Arts degree in Economics at Western Washington State College in Bellingham, Washington and a Masters of Arts (A.M.) degree in Economics at Washington University in St. Louis, Missouri. I have been employed by the Missouri Public Service Commission (Commission) since June 1977. My primary role with the Missouri Public Service Commission Staff (Staff) has been to perform analysis in the areas of rate design, class cost-of-service, rate revenue, and billing units for the regulated electric utilities in Missouri. A list of the cases in which I have filed testimony before the Commission is shown on Schedule 1.

Direct Testimony of  
Janice Pyatte

1 Q. What is the purpose of your Direct Testimony in this filing?

2 A. My Direct Testimony on the issue of Sales and Revenue describes my role in the  
3 development of specific adjustments to Missouri jurisdictional, test year sales and revenue from  
4 sales (rate revenue) for the electric operations of Aquila Networks-L&P ("L&P Electric") and  
5 the steam operations of Aquila Networks-L&P ("L&P Steam").

6 In this filing, I present two schedules for L&P Electric's operations and one schedule for  
7 L&P Steam's operations that summarize Missouri sales and rate revenue by rate code, based  
8 upon a test year of January 1, 2002 – December 31, 2002, updated for known and measurable  
9 changes through September 30, 2003. The adjusted Missouri retail sales for the updated test  
10 year shown on Schedules 2 (electric) and 4 (steam) are consistent with the normalized hourly  
11 system loads used in Staff's production cost simulation model fuel run.

12 The specific adjustments to L&P Electric's revenues shown on Schedule 3 are shown as  
13 adjustments in the Staff's Income Statement (Accounting Schedule 9) for L&P Electric.

14 The specific adjustments to L&P Steam's revenues shown on Schedule 4 are shown as  
15 adjustments in the Staff's Income Statement (Accounting Schedule 9) for L&P Steam.

16 Q. What is the relationship between the Missouri rate revenue shown on your  
17 Schedules 3 and 4 and the Missouri operating revenue shown on Accounting Schedule 9-Income  
18 Statement?

19 A. Total operating revenue, which is shown on Accounting Schedule 9-Income  
20 Statement, consists of two components: the revenue that the Company collects from the sales of  
21 electricity or steam to Missouri retail customers ("rate revenue"), which is shown on my  
22 Schedules 3 and 4; and the revenue the Company receives from other sources ("other revenue").  
23 My testimony addresses Missouri rate revenue for L&P only. Please refer to similar schedules

Direct Testimony of  
Janice Pyatte

1 attached to the testimony of Staff witness Hong Hu for Missouri rate revenue for Aquila  
2 Networks-MPS ("MPS Electric"). Staff Witness Amanda McMellen sponsors any proposed  
3 adjustments to other revenue for L&P Electric, L&P Steam and MPS Electric.

4 Q. Do you have a recommendation for the Commission regarding L&P Electric and  
5 L&P Steam sales and rate revenue?

6 A. I recommend that the Commission adopt the Staff's adjustments to booked sales  
7 and rate revenue for both L&P Electric and L&P Steam that are shown on Schedules 2, 3, and 4.  
8 If adopted, Staff's rate revenue by rate code will be used to implement any Commission-ordered  
9 revenue change in this case.

#### 10 **RATEMAKING TREATMENT OF SALES AND RATE REVENUE**

11  
12 Q. What is the rationale for making adjustments to test year sales and revenue?

13 A. The historical 12-month time period ("test year") and "update period" (if any)  
14 that the Commission determines should be used for analyzing the costs of providing service to  
15 retail customers is also used for analyzing sales and revenue, based on the "matching principle"  
16 of ratemaking. The intent of adjustments to test year revenue is to estimate the revenue that the  
17 company would have collected on an annual, normal-weather basis, based on information  
18 "known and measurable" at the end of the analysis period.

19 Most adjustments to test year revenue correspond to adjustments to sales that, in turn,  
20 affect the Company's fuel and purchased power costs. Net system loads, updated for these  
21 known and measurable changes in sales, are reflected in the production cost simulation model to  
22 ensure that sufficient generation and purchases exist to meet total net system requirements. Any  
23 change to revenue from historical levels that results from changes in underlying sales will result

Direct Testimony of  
Janice Pyatte

1 in corresponding changes to fuel and purchased power costs that reflect that same adjustment to  
2 sales.

3 Q. What categories of adjustments to kWh sales and rate revenue are typically made  
4 in a rate increase or a complaint (excess earnings) case?

5 A. The two major categories of adjustments are known as normalizations and  
6 annualizations.

7 Normalizations deal with test year events that are unusual and unlikely to be repeated in  
8 the years when the new rates from this case are in effect. Test year weather is an example. It is  
9 unlikely that the weather that occurred in the test year will, on average, be repeated in the future,  
10 but what weather will actually occur is not predictable. The objective of the weather  
11 normalization process is to re-state test year sales and rate revenue on a "normal-weather" basis.

12 Annualizations are adjustments that re-state test year results as if conditions known at  
13 the end of the analysis period had existed throughout the entire test year. Annualizations may be  
14 sub-classified as being "test-year-related" or "update-period-related", depending on when a  
15 "known and measurable" change occurs (i.e., during the test year or during the update period).

16 Q. Please provide some examples of common annualizations that may occur in an  
17 electric rate case?

18 A. A common example of a revenue annualization is a rate change that occurs  
19 during the test year. Actual test year revenue in this situation will be understated or overstated  
20 by the difference between the amount that was actually billed to customers and the revenue that  
21 would have been realized by the company if the rates in effect at the end of the analysis period  
22 had been in effect throughout the entire test year.

Direct Testimony of  
Janice Pyatte

1 An example of an annualization that affects both sales and rate revenue is a large  
2 customer that either begins or ceases service during the analysis period. In the situation where a  
3 large customer ceases business, test year revenue should be decreased by the amount of revenue  
4 the customer provided the Company. A corresponding reduction to sales and to fuel and  
5 purchased power expense should be made to reflect the costs the company will no longer incur.  
6 Conversely, when a large customer begins service, test year revenue, kWh sales, and fuel  
7 expense should be increased to reflect both the costs and the revenue associated with serving the  
8 new customer on an annual basis.

9 Customer growth adjustments are annualizations that reflect any additional sales and  
10 revenue that would have occurred in the test year if customers on the system at the end of the  
11 analysis period had been customers during all 12 months of the test year.

12 **L&P ELECTRIC KWH SALES AND RATE REVENUE**

13  
14 Q. Which specific adjustments to L&P Electric's sales and rate revenue from  
15 electric operations are you recommending?

16 A. I recommend that the Commission adopt the Staff's adjustments to sales and  
17 revenues shown on Schedules 2 and 3 and identified on Accounting Schedule 9-Income  
18 Statement for L&P Electric as S-1.2, S-1.5 and S-1.6. A description of these adjustments  
19 appears on Accounting Schedule 10-Adjustments to Income Statement.

20 Q. How does your testimony on L&P Electric sales and revenues relate to the  
21 testimony of other Staff witnesses in this case?

22 A. I am responsible for compiling the table labeled as Schedule 2, which  
23 summarizes the results of Staff's work relating to Missouri sales (measured in kWh) for L&P  
24 Electric. In addition to the adjustments to kWh sales addressed in my testimony, Staff witness



Direct Testimony of  
Janice Pyatte

1 Richard J. Campbell addresses the normalization of kWh sales to account for the effects of  
2 deviations from normal weather in the test year, and Staff witness Amanda McMellen addresses  
3 the effect that growth (or decline) in the number of customers had on kWh sales. The  
4 annualization of kWh sales for the large customers was a collaborative effort between Ms.  
5 McMellen and myself.

6 I am also responsible for compiling the table labeled as Schedule 3, which summarizes  
7 the results of Staff's work relating to Missouri rate revenue for L&P Electric. My testimony  
8 addresses the methodologies used to calculate annualized, normalized rate revenue for each  
9 affected rate code. Ms. McMellen's testimony addresses the effect that growth (or decline) in  
10 the number of customers had on rate revenue. The annualization of rate revenues for the large  
11 customers was also a collaborative effort between Ms. McMellen and myself.

12 Q. Please describe the characteristics of the Missouri kWh sales and rate revenue  
13 that have been developed in this case.

14 A. The Missouri kWh sales and rate revenue that I am presenting have these  
15 characteristics: (i) they have been developed by both rate code and by cost-of-service class; (ii)  
16 they have been normalized to remove the effects of deviations from normal weather in the test  
17 year; (iii) they have been developed on both a billing month and a calendar year (i.e., 365-day)  
18 basis; and (iv) they have been adjusted to reflect load growth (or decline).

19 In addition, rate revenue has been annualized to reflect the change in economic  
20 development rider ("EDR") credits to 2003 levels.

21 Q. What specific annualizations to test year kWh sales and rate revenue were done  
22 in this case?

Direct Testimony of  
Janice Pyatte

1           A.     The following annualizations to test year sales were made in this case: (i)  
2 annualization for 365 days (“days adjustment”); (ii) annualization for billing corrections; (iii)  
3 annualization for large customer load changes; and (iv) annualization of other customers for  
4 growth.

5           Each of these adjustments to kWh sales was associated with a corresponding adjustment  
6 to revenue. An additional adjustment relating to EDR credits and special facilities fees was  
7 done exclusively to test year rate revenue.

8           Q.     Please describe the rationale and process used to calculate the days adjustment to  
9 sales and revenue.

10          A.     One annualization that was made to test year sales and rate revenue is called  
11 either a “days” adjustment or an “unbilled” adjustment. It represents the change in kWh sales  
12 and rate revenues associated with adjusting the 12 test year billing months to the equivalent of  
13 365 days. Mr. Campbell is sponsoring the Staff’s days adjustment to kWh sales. His annual  
14 results are shown by rate code on my Schedule 2-2. I am responsible for calculating the  
15 associated days adjustment to revenue. My annual results are shown by rate code on  
16 Schedule 3-2.

17          Q.     What specific annualizations to test year kWh sales and rate revenue were done  
18 to reflect load changes by large customers?

19          A.     A number of annualizations were made to individual Large Power Service  
20 customers to reflect significant increases or reductions in electric load. I computed a days  
21 adjustment for each customer, if required, to ensure that sales and revenue represented a 365-day  
22 period. I also “cleaned-up” the monthly billing information recorded in the Company’s financial  
23 records to properly reflect billing corrections.

Direct Testimony of  
Janice Pyatte

1 Q. Please describe the rationale for annualizing Large Power customers individually  
2 rather than in aggregate.

3 A. Large Power customers are the largest electricity-using customers. This group of  
4 60 customers is heterogeneous in terms of both size and load factor and, as a consequence,  
5 aggregate methods of analyzing them are generally not very accurate. To accommodate the  
6 pending Aquila rate design case, Case No. EO-2002-384, special care was taken in this case to  
7 reflect the unique circumstances of each customer.

8 Q. Please describe the process used to annualize billing corrections for individual  
9 Large Power customers.

10 A. A number of adjustments were made to individual Large Power customers to  
11 reflect selected billing corrections that Aquila made during the test year and/or update period.  
12 Billing corrections are recorded as a "cancel" of the original bill and a "re-bill" for the correct  
13 amount. Typically the cancel and re-bill is recorded on the Company's books in a month  
14 subsequent to the month that the original incorrect bill was recorded. These corrections distort  
15 the monthly data required for Staff's analysis of kWh sales and rate revenue. I adjusted the  
16 individual customer kWh sales and revenue, as recorded by Aquila, to what I believe the data  
17 would have looked like if the original bill had been correct in the first place, i.e., I moved the  
18 "cancel" and the "re-bill" to the month in which the incorrect original bill was recorded. This  
19 had no effect on annual sales and revenues, except in those instances where the incorrect  
20 original bill was for a month that was prior to the test year. The annual differences associated  
21 with this "clean-up" of test year billing data were recorded as annualizations so that it would be  
22 clear that Staff's starting point in this case was the Aquila FERC Form 1 filing for the year  
23 2002.

Direct Testimony of  
Janice Pyatte

1 Q. Please describe the process used to annualize individual Large Power customers  
2 for significant increases or reductions in electric load.

3 A. The first step was to determine whether each customer experienced a significant  
4 increase or reduction in electric load that required annualizing. Each customer's monthly  
5 demand and energy use over the test year and update period were examined graphically to  
6 determine whether a change in the "size" of the customer had occurred. Aquila provided a list  
7 of customers that it had identified as being likely to experience a significant change in load.  
8 These customers received closer scrutiny to determine whether a measurable load change had  
9 occurred.

10 The most common method used to annualize a specific customer that experienced a load  
11 change was to replace specific months of that customer's January 2002-September 2002 test  
12 year data with its billing data for corresponding months in the January 2003-September 2003  
13 update period. Care was taken to reflect the known, unique circumstances of each customer.

14 These annualizations are shown by rate code and cost-of-service class on Schedules 2  
15 and 3, attached to this testimony, and, in aggregate, on Accounting Schedules 9 and 10, S-1.

16 Q. What normalizations to test year billed kWh sales were done in this case?

17 A. Mr. Campbell is sponsoring the Staff's weather adjustment to kWh sales. This  
18 normalization re-states test year kWh sales on a "normal weather" basis; i.e., to the level of kWh  
19 sales that would have occurred in the test year if test year weather had been "normal." His  
20 annual results are shown by rate code on my Schedule 2-2. Please refer to Mr. Campbell's  
21 testimony for a more complete description of the weather normalization concept and  
22 methodology.

23 Q. What normalizations to test year rate revenue were done in this case?

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Janice Pyatte

1           A.     I am responsible for calculating the adjustments to rate revenue that are  
2 associated with Mr. Campbell's weather adjustments to kWh sales. Weather adjustments were  
3 computed for residential rate codes (MO910, MO911, MO913, MO914, MO915, MO920,  
4 MO921, MO922), small general service rate codes (MO930, MO931, MO932, MO933, MO934,  
5 MO941), and the large general service rate code (MO940).

6           Three different methodologies for normalizing rate revenue were used. The assumption  
7 underlying all three methodologies is that the weather normalization process has no effect on  
8 either the number of customers or on the fixed charges those customers currently pay. I  
9 assumed that weather normalization only affects the energy usage of each existing customer and  
10 thus only affects those charges directly related to kWh usage.

11          Q.     Why were multiple methodologies used for normalizing revenue?

12          A.     The specific methodology used for normalizing rate revenue for each rate code  
13 was determined by its current rate structure.

14          Q.     Please briefly describe each methodology and the situations where each was  
15 used.

16          A.     In situations where only one tariffed rate applies to all monthly usage, the  
17 weather adjustment to revenue was calculated by applying that rate to Mr. Campbell's weather  
18 normalization adjustment to kWh sales. This procedure was used to compute monthly revenue  
19 adjustments for rate codes MO922, MO930, MO932, MO934, and MO941.

20                 There are multiple energy rate blocks for residential rate codes MO910&911,  
21 MO913&914, and MO920&MO921. Multiple rate blocks result in the average rate per kWh  
22 declining as customer usage increases. Using a statistical regression technique, I modeled the  
23 relationship between average monthly use per customer and average rate per kWh for each of

Direct Testimony of  
Janice Pyatte

1 the affected rate codes. After determining how the average rate per kWh changed when use per  
2 customer changed, I then applied this relationship to the monthly use per customer before and  
3 after the weather adjustment that Mr. Campbell had provided me. I then calculated the monthly  
4 weather adjustment to revenue that corresponds to Mr. Campbell's monthly weather adjustment  
5 to kWh sales based on that relationship.

6 The weather adjustment to rate revenue for the remaining rate codes was calculated by  
7 an average realization method. This method applies the average energy charge per kWh for  
8 each specific month to the weather adjustment to that month's kWh sales. The average  
9 realization method provides a reasonable estimate of the additional revenue associated with  
10 additional kWh sales by assuming that these additional sales would be priced at the same  
11 average price as all other sales in that month. This method was applied to two small general  
12 service rate codes (MO931, MO933) and to large general service rate code (MO940).

13 Schedule 3 shows the annual normalization adjustment to revenue for each rate code and  
14 cost-of-service class. This normalization to revenue is also included in Accounting  
15 Schedule 9—Income Statement and Accounting Schedule 10—Adjustments to Income Statement.

16 Q. How was the effect of customer growth on kWh sales and rate revenue accounted  
17 for?

18 A. Conceptually, customer growth adjustments reflect the additional kWh sales and  
19 rate revenue that would have occurred if the number of customers taking service at the end of  
20 the update period (September 30, 2003) had existed throughout the entire test year.  
21 Ms. McMellen is sponsoring the aggregate customer growth adjustment to rate revenue shown  
22 on Accounting Schedules 9 and 10. My Schedules 2-2 and 3-2 display Ms. McMellen's results

Direct Testimony of  
Janice Pyatte

1 by rate code. Please refer to Ms. McMellen's testimony for a more complete description of the  
2 customer growth concept and methodology.

3 **L&P STEAM SALES AND RATE REVENUE**  
4

5 Q. Which specific adjustments to L&P Steam's sales and rate revenue from steam  
6 operations are you recommending?

7 A. I recommend that the Commission adopt the Staff's adjustments to sales and  
8 revenues shown on Schedule 4 and identified on Accounting Schedule 9-Income Statement for  
9 L&P Steam as S-1.1 and S-1.2. A description of these adjustments appears on Accounting  
10 Schedule 10-Adjustments to Income Statement.

11 Q. How does your testimony on L&P Steam sales and rate revenue relate to the  
12 testimony of other Staff witnesses in this case?

13 A. I am responsible for all adjustments to sales (measured in MMBTU), billing  
14 units, and rate revenue for L&P Steam. I am also responsible for compiling the table labeled as  
15 Schedule 4, which summarizes the result of my work relating to Missouri rate revenue for L&P  
16 Steam.

17 Q. Please describe the characteristics of the Missouri steam sales and rate revenue  
18 that have been developed in this case.

19 A. The Missouri steam sales and rate revenue that I am presenting have these  
20 characteristics: (i) they have been developed by rate code; (ii) they have been developed on a  
21 calendar year (i.e., January 1 – December 31, 2002) basis; (iii) they have been adjusted to reflect  
22 load growth (or decline); and (iv) they reflect the expiration of a special contract and the  
23 subsequent billing of selected accounts on the standard rates.

Direct Testimony of  
Janice Pyatte

1 Q. What specific annualizations to test year steam sales and rate revenue were done  
2 in this case?

3 A. One annualization reflects large customer load changes. The method used to  
4 annualize a specific customer that experienced a load change was to replace specific months of  
5 that customer's January 2002-September 2002 test year data with its billing data for  
6 corresponding months in the January 2003-September 2003 update period. This annualization  
7 affects both sales and revenues.

8 The second annualization reflects the expiration of a special contract during the test year  
9 and the switch of three accounts to being billed on the standard rates. This annualization was  
10 calculated by re-stating test year revenues as if the accounts had been billed on current rates  
11 during the entire test year.

12 These annualizations are shown on Schedule 4, attached to this testimony, and, in  
13 aggregate, on Accounting Schedules 9 and 10, S-1.

14 Q. Does this conclude your Direct Testimony on the issue of sales and rate revenue  
15 in this case?

16 A. Yes, it does.  
17



**Cases Witness Participation**  
**Witness: Janice Pyatte**

<b>Company</b>	<b>Case Number</b>
The Empire District Electric Company	ER-2002-424
Union Electric Company d/b/a AmerenUE	EC-2002-1
UtiliCorp United, Inc. d/b/a Missouri Public Service	ER-2001-672
The Empire District Electric Company	ER-2001-299
UtiliCorp United and St. Joseph Light & Power Co.	EM-2000-292
St. Joseph Light & Power Company	ER-99-247 & EC-98-573
St. Joseph Light & Power Company	ER-99-247 & EC-98-573
Union Electric Company	EO-96-15
St. Joseph Light & Power Company	EC-98-573
Missouri Public Service	ER-97-394 & ET-98-103 & EC-98-126
Missouri Public Service	ER-97-394 & ET-98-103
Missouri Public Service	EO-97-144 & EC-97-362
The Empire District Electric Company	ER-97-81
Kansas City Power & Light Company	EC-96-57
The Empire District Electric Company	ER-95-279
The Empire District Electric Company	ER-94-174 & EO-91-74
St. Joseph Light & Power Company	ER-93-41
Missouri Public Service	ER-93-37
Union Electric Company	EM-92-225 & EM-92-253
Arkansas Power & Light Co. and Union Electric Co.	EM-91-29
Union Electric Company	EO-87-175
Arkansas Power & Light Company	ER-85-265
Kansas City Power & Light Company	ER-85-128 & EO-85-185
Union Electric Company	EO-85-17 & ER-85-160
Union Electric Company	ER-84-168
Union Electric Company	ER-84-168
Arkansas Power & Light Company	ER-83-206
Union Electric Company	ER-83-163
Kansas City Power & Light Company	ER-83-49
The Empire District Electric Company	EO-82-40
The Empire District Electric Company	ER-81-209
Kansas City Power & Light Company	EO-78-161
Laclede Gas Company	GO-78-38
Union Electric Company	EO-78-163
St. Joseph Light & Power Company	EO-77-56

**AQUILA NETWORKS - L&P ELECTRIC**  
**CASE NOS. ER-2004-0034 AND HR-2004-0024**  
**ADJUSTED MISSOURI RETAIL KWH SALES BY RATE CODE**  
**(CALENDAR YEAR 2002, UPDATED THROUGH SEPTEMBER 30, 2003)**

	As Billed Sales (kWh)	Annualizations to kWh Sales	Normalizations to kWh Sales	Customer Annualizations	Total Sales (kWh)
<b>COS Class: Residential</b>					
MO910,911 Residential General Use	322,775,715	1,813,908	(15,231,654)	(3,980,555)	305,377,414
MO913,914 Residential w/ Water Heat	89,940,944	462,157	(3,317,690)	(1,292,487)	85,792,924
MO915 Residential - Other Use	4,748,691	-	-	243,792	4,992,483
MO920,921 Residential w/ Space Heat	282,490,980	3,407,644	(422,559)	20,679,989	306,156,055
MO922 Sep Mtr Space & Water Heat	510,540	6,159	2,888	(51,903)	467,683
<b>Total Residential</b>	<b>700,466,870</b>	<b>5,689,868</b>	<b>(18,969,015)</b>	<b>15,598,836</b>	<b>702,786,559</b>
<b>COS Class: Small General Service</b>					
MO930 Limited Demand - General Use	23,480,039	63,029	(229,346)	180,942	23,494,664
MO932 Limited Demand - w/ Space Heat	4,142,109	11,119	(31,512)	120,664	4,242,380
MO934 Churches & Schools	5,302,839	14,235	(112,654)	60,410	5,264,830
MO941 Sep Mtr Space & Water Heat	2,801,094	4,403	(7,367)	(113,016)	2,685,114
MO931 General Service - General Use	44,162,185	314,110	(763,962)	1,521,106	45,233,439
MO933 General Service - w/ Space Heat	20,255,917	94,824	(208,848)	231,158	20,373,051
<b>Total Small GS</b>	<b>100,144,183</b>	<b>501,720</b>	<b>(1,353,689)</b>	<b>2,001,264</b>	<b>101,293,478</b>
MO940 <b>COS Class: Large General Service</b>	<b>362,708,691</b>	<b>1,303,071</b>	<b>(1,990,982)</b>	<b>962,706</b>	<b>362,983,486</b>
MO944 <b>COS Class: Large Power</b>	<b>613,630,085</b>	<b>(3,058,469)</b>	-	<b>(2,503,692)</b>	<b>608,067,924</b>
<b>COS Class: Lighting</b>					
MOSJx Street and Private Area Lighting	19,169,452				19,169,452
MO971 Outdoor Night Lighting	421,935				421,935
MO972 Street Lighting	868,028				868,028
MO973 Traffic Signals	635,114				635,114
<b>Total Lighting</b>	<b>21,094,529</b>	-	-	-	<b>21,094,529</b>
MO987 Interdepartmental	21,690				21,690
Unaccounted for	952				952
Unbilled	5,054,000	(5,054,000)			-
<b>Total MO Retail Sales (kWh)</b>	<b>1,803,121,000</b>	<b>(617,810)</b>	<b>(22,313,686)</b>	<b>16,059,114</b>	<b>1,796,248,618</b>

**AQUILA NETWORKS - L&P ELECTRIC**  
**CASE NOS. ER-2004-0034 AND HR-2004-0024**  
**DETAILS OF ADJUSTMENTS TO MISSOURI KWH SALES BY RATE CODE**  
**(CALENDAR YEAR 2002, UPDATED THROUGH SEPTEMBER 30, 2003)**

	Normalization for Weather	Annualization for 365 Days	Annualization for Billing Corrections	Annualization of of Large Customer Load Changes	Annualization of Other Customers for Growth
<b>COS Class: Residential</b>					
MO910,911 Residential General Use	(15,231,654)	1,813,908			(3,980,555)
MO913,914 Residential w/ Water Heat	(3,317,690)	462,157			(1,292,487)
MO915 Residential - Other Use					243,792
MO920,921 Residential w/ Space Heat	(422,559)	3,407,644			20,679,989
MO922 Sep Mtr Space & Water Heat	2,888	6,159			(51,903)
<b>Total Residential</b>	<b>(18,969,015)</b>	<b>5,689,868</b>	-	-	<b>15,598,836</b>
<b>COS Class: Small General Service</b>					
MO930 Limited Demand - General Use	(229,346)	63,029			180,942
MO932 Limited Demand - w/ Space Heat	(31,512)	11,119			120,664
MO934 Churches & Schools	(112,654)	14,235			60,410
MO941 Sep Mtr Space & Water Heat	(7,367)	4,403			(113,016)
MO931 General Service - General Use	(763,962)	314,110			1,521,106
MO933 General Service - w/ Space Heat	(208,848)	94,824			231,158
<b>Total Small GS</b>	<b>(1,353,689)</b>	<b>501,720</b>	-	-	<b>2,001,264</b>
MO940 <b>COS Class: Large General Service</b>	<b>(1,990,982)</b>	<b>1,303,071</b>			<b>962,706</b>
MO944 <b>COS Class: Large Power</b>		<b>291,369</b>	<b>(3,349,838)</b>	<b>(2,503,692)</b>	
<b>COS Class: Lighting</b>					
MOSJx Street and Private Area Lighting					
MO971 Outdoor Night Lighting					
MO972 Street Lighting					
MO973 Traffic Signals					
<b>Total Lighting</b>					
MO987 Interdepartmental Unaccounted for Unbilled					
<b>Total MO Retail Sales (kWh)</b>	<b>(22,313,686)</b>	<b>7,786,028</b>	<b>(3,349,838)</b>	<b>(2,503,692)</b>	<b>18,562,806</b>

**AQUILA NETWORKS - L&P ELECTRIC**  
**CASE NOS. ER-2004-0034 AND HR-2004-0024**  
**ADJUSTED MISSOURI RETAIL RATE REVENUE BY RATE CODE**  
**(CALENDAR YEAR 2002, UPDATED THROUGH SEPTEMBER 30, 2003)**

	<b>Billed Revenue w/o Taxes</b>	<b>Annualizations to Revenue</b>	<b>Normalizations to Revenue</b>	<b>Customer Annualizations</b>	<b>Total Rate Revenue</b>
<b>COS Class: Residential</b>					
MO910,911 Residential General Use	\$21,089,247	\$98,565	(\$970,797)	(\$260,315)	\$19,956,700
MO913,914 Residential w/ Water Heat	\$5,250,370	\$21,937	(\$215,283)	(\$73,631)	\$4,983,393
MO915 Residential - Other Use	\$476,897	\$0	\$0	\$24,808	\$501,705
MO920,921 Residential w/ Space Heat	\$13,326,633	\$135,746	(\$206,039)	\$925,361	\$14,181,701
MO922 Sep Mtr Space & Water Heat	\$25,686	\$261	(\$168)	(\$2,534)	\$23,245
<b>Total Residential</b>	<b>\$40,168,833</b>	<b>\$256,509</b>	<b>(\$1,392,287)</b>	<b>\$613,689</b>	<b>\$39,646,745</b>
<b>COS Class: Small General Service</b>					
MO930 Limited Demand - General Use	\$2,078,568	\$4,402	(\$22,633)	\$16,077	\$2,076,415
MO932 Limited Demand - w/ Space Heat	\$323,673	\$766	(\$3,267)	\$9,485	\$330,657
MO934 Churches & Schools	\$429,412	\$1,036	(\$9,713)	\$4,745	\$425,480
MO941 Sep Mtr Space & Water Heat	\$140,327	\$206	(\$1,767)	(\$5,298)	\$133,468
MO931 General Service - General Use	\$3,014,576	\$16,606	(\$49,877)	\$103,024	\$3,084,330
MO933 General Service - w/ Space Heat	\$1,253,872	\$4,640	(\$15,437)	\$13,145	\$1,256,220
<b>Total Small GS</b>	<b>\$7,240,429</b>	<b>\$27,656</b>	<b>(\$102,694)</b>	<b>\$141,178</b>	<b>\$7,306,570</b>
MO940 <b>COS Class: Large General Service</b>	<b>\$17,034,660</b>	<b>\$46,566</b>	<b>(\$93,415)</b>	<b>\$38,848</b>	<b>\$17,026,659</b>
MO944 <b>COS Class: Large Power</b>	<b>\$22,799,635</b>	<b>(\$85,208)</b>	<b>\$0</b>	<b>(\$159,423)</b>	<b>\$22,555,004</b>
<b>COS Class: Lighting</b>					
MOSJx Street and Private Area Lighting	\$2,069,725	\$0	\$0	-	\$2,069,725
MO971 Outdoor Night Lighting	\$30,106	\$0	\$0	-	\$30,106
MO972 Street Lighting	\$31,822	\$0	\$0	-	\$31,822
MO973 Traffic Signals	\$27,324	\$0	\$0	-	\$27,324
<b>Total Lighting</b>	<b>\$2,158,978</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$2,158,978</b>
MO987 Interdepartmental	\$508	\$0	\$0	-	\$508
MO940 Economic Development Credits	(\$15,050)	\$2,932	\$0	-	(\$12,117)
MO944 Economic Development Credits	(\$539,953)	\$81,970	\$0	-	(\$457,983)
<b>Total MO Firm Rate Revenue</b>	<b>\$88,848,041</b>	<b>\$330,427</b>	<b>(\$1,588,396)</b>	<b>\$634,293</b>	<b>\$88,224,364</b>
<b>Other Rate Revenue</b>					
MO940 Curtailment Credits	(\$4,752)	\$0	\$0	-	(\$4,752)
MO944 Curtailment Credits	(\$11,880)	\$0	\$0	-	(\$11,880)
MO940 Misc Fees	\$58,766	\$0	\$0	-	\$58,766
MO944 Misc Fees	\$31,177	(\$5,180)	\$0	-	\$25,997
Unaccounted for	(\$89,978)	\$0	\$0	-	(\$89,978)
Unbilled	\$220,195	(\$220,195)	\$0	-	\$0
<b>Total Other Rate Revenue</b>	<b>\$203,527</b>	<b>(\$225,375)</b>	<b>\$0</b>	<b>\$0</b>	<b>(\$21,848)</b>
<b>Total MO Rate Revenue</b>	<b>\$89,051,568</b>	<b>\$105,052</b>	<b>(\$1,588,396)</b>	<b>\$634,293</b>	<b>\$88,202,516</b>

**AQUILA NETWORKS - L&P ELECTRIC**  
**CASE NOS. ER-2004-0034 AND HR-2004-0024**  
**DETAILS OF ADJUSTMENTS TO MISSOURI RATE REVENUE BY RATE CODE**  
**(CALENDAR YEAR 2002, UPDATED THROUGH SEPTEMBER 30, 2003)**

		Normalization for Weather	Annualization for 365 Days	Annualizations for Special Charges & Billing Correction	Annualization of Large Customer: for Growth	Annualization of Other Customers for Growth
<b>COS Class: Residential</b>						
MO910,911	Residential General Use	(\$970,797)	\$98,565			(\$260,315)
MO913,914	Residential w/ Water Heat	(\$215,283)	\$21,937			(\$73,631)
MO915	Residential - Other Use					\$24,808
MO920,921	Residential w/ Space Heat	(\$206,039)	\$135,746			\$925,361
MO922	Sep Mtr Space & Water Heat	(\$168)	\$261			(\$2,534)
	<b>Total Residential</b>	<b>(\$1,392,287)</b>	<b>\$256,509</b>	<b>\$0</b>	<b>\$0</b>	<b>\$613,689</b>
<b>COS Class: Small General Service</b>						
MO930	Limited Demand - General Use	(\$22,633)	\$4,402			\$16,077
MO932	Limited Demand - w/ Space Heat	(\$3,267)	\$766			\$9,485
MO934	Churches & Schools	(\$9,713)	\$1,036			\$4,745
MO941	Sep Mtr Space & Water Heat	(\$1,767)	\$206			(\$5,298)
MO931	General Service - General Use	(\$49,877)	\$16,606			\$103,024
MO933	General Service - w/ Space Heat	(\$15,437)	\$4,640			\$13,145
	<b>Total Small GS</b>	<b>(\$102,694)</b>	<b>\$27,656</b>	<b>\$0</b>	<b>\$0</b>	<b>\$141,178</b>
MO940	<b>COS Class: Large General Service</b>	<b>(\$93,415)</b>	<b>\$46,566</b>			<b>\$38,848</b>
MO944	<b>COS Class: Large Power</b>		<b>\$7,443</b>	<b>(\$92,650)</b>	<b>(\$159,423)</b>	
<b>COS Class: Lighting</b>						
MOSJx	Street and Private Area Lighting					
MO971	Outdoor Night Lighting					
MO972	Street Lighting					
MO973	Traffic Signals					
	<b>Total Lighting</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
MO987	Interdepartmental					
MO940	Economic Development Credits			\$2,932		
MO944	Economic Development Credits			\$81,970		
	<b>Total MO Firm Rate Revenue</b>	<b>(\$1,588,396)</b>	<b>\$338,174</b>	<b>(\$7,748)</b>	<b>(\$159,423)</b>	<b>\$793,716</b>
<b>Other Rate Revenue</b>						
MO940	Curtailment Credits					
MO944	Curtailment Credits					
MO940	Misc Fees			(\$5,180)		
MO944	Misc Fees					
	Unaccounted for Unbilled					
	<b>Total Other Rate Revenue</b>	<b>\$0</b>	<b>\$0</b>	<b>(\$5,180)</b>	<b>\$0</b>	<b>\$0</b>
	<b>Total MO Rate Revenue</b>	<b>(\$1,588,396)</b>	<b>\$338,174</b>	<b>(\$12,928)</b>	<b>(\$159,423)</b>	<b>\$793,716</b>

**AQUILA NETWORKS - L&P STEAM  
CASE NOS. ER-2004-0034 AND HR-2004-0024  
ADJUSTED MISSOURI STEAM SALES AND REVENUES BY RATE CODE  
(CALENDAR YEAR 2002, UPDATED THROUGH SEPTEMBER 30, 2003)**

**RATE REVENUE**

		<b>As Billed Revenue</b>	<b>Annualization (Rate Switching)</b>	<b>Large Customer Annualization</b>	<b>Total Revenue</b>
Steam Service	MO810	\$1,359,940		(\$156,099)	\$1,203,841
Steam Service (MO812)	MO810	\$1,054,453	\$4,666,179		\$5,720,632
Contract Service	MO812	\$4,227,181	(\$4,227,181)		\$0
<b>Total MO Rate Revenue</b>		<b>\$6,641,574</b>	<b>\$438,998</b>	<b>(\$156,099)</b>	<b>\$6,924,474</b>

**STEAM SALES**

		<b>As Billed Sales</b>	<b>Annualization (Rate Switching)</b>	<b>Large Customer Annualization</b>	<b>Total Annualized Sales</b>
Steam Service	MO810	327,272	-	(43,607)	283,665
Steam Service (MO812)	MO810	287,228	1,259,133		1,546,361
Contract Service	MO812	1,265,623	(1,265,623)		-
<b>Total MMBTU Sales</b>		<b>1,880,123</b>	<b>(6,490)</b>	<b>(43,607)</b>	<b>1,830,026</b>