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Rate Revenue  
Witness: Curt Wells  
Sponsoring Party: MO PSC Staff  
Type of Exhibit: Direct Testimony  
Case No.: ER-2007-0004  
Date Testimony Prepared: January 18, 2007

**MISSOURI PUBLIC SERVICE COMMISSION**  
**UTILITY OPERATIONS DIVISION**

**DIRECT TESTIMONY**

**OF**

**CURT WELLS**

**AQUILA, INC.**  
**d/b/a AQUILA NETWORKS-MPS**  
**AND AQUILA NETWORKS-L&P**

**CASE NO. ER-2007-0004**

**Jefferson City, Missouri**  
**January 2007**

**FILED**

**MAY 2 2007**

**Missouri Public  
Service Commission**

Staff Exhibit No. 233  
Case No(s). ER-2007-0004  
Date 4-12-07 Rptr KE

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

In the matter of Aquila, Inc. d/b/a Aquila )  
Networks-MPS and Aquila Networks- )  
L&P, for authority to file tariffs increasing )  
electric rates for the service provided to )  
customers in the Aquila Networks-MPS )  
and Aquila Networks-L&P service areas. )

Case No. ER-2007-0004

**AFFIDAVIT OF CURT WELLS**

STATE OF MISSOURI     )  
                                  ) ss  
COUNTY OF COLE     )

Curt Wells, of lawful age, on his oath states: that he has participated in the preparation of the following 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 following Direct Testimony were given by him; that he has knowledge of the matters set forth in such answers; and that such matters are true to the best of his knowledge and belief.



Curt Wells

Subscribed and sworn to before me this 17<sup>th</sup> day of January, 2007.



SUSAN L. SUNDERMEYER  
My Commission Expires  
September 21, 2010  
Callaway County  
Commission #06942086

  
Notary Public

My commission expires 9-21-10

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**AQUILA, INC.**

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**CASE NO. ER-2007-0004**

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**DIRECT TESTIMONY**

**OF**

**CURT WELLS**

**AQUILA, INC.**

**d/b/a AQUILA NETWORKS-MPS  
AND AQUILA NETWORKS-L&P**

**CASE NO. ER-2007-0004**

Q. Please state your name and business address.

A. My name is Curt Wells 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 (Commission)?

A. I am a Regulatory Economist in the Energy Department of the Utility Operations Division.

Q. Please review your educational background and work experience.

A. I have a Bachelor's degree in Economics from Duke University, a Master's degree in Economics from The Pennsylvania State University, and a Master's degree in Applied Economics from Southern Methodist University. I have been employed by the Missouri Public Service Commission since February, 2006. Prior to joining the Commission, I completed a career in the U.S. Air Force, which included assignments as a navigator in weather reconnaissance aircraft, and later in the Purchasing/Contracting area as Contract Negotiator and Administrator, Contracting Policy Manager, Installation Purchasing Department Chief, and Contracting Program Manager.

Q. Have you filed testimony in prior cases?

1 A. Yes. My previous testimony is listed in Schedule CW-1.

2 **EXECUTIVE SUMMARY**

3 Q. Please summarize your testimony.

4 A. In my testimony I address two separate issues. First, I address the  
5 development of the weather data used in this case by explaining (a) what data was used by the  
6 Staff to derive normal (average) temperatures for the Kansas City area for this rate case, (b)  
7 what temperature data was available, (c) why the available temperatures needed to be  
8 adjusted, and (d) how those adjustments were made. I provided this weather data to Staff  
9 witness Mr. Shawn E. Lange, who performed the weather normalization of sales.

10 Second, I address the current level of annual retail sales of electricity (kWh sales) and  
11 the revenue from those sales (rate revenue) for the electric operations of Aquila, Inc. d/b/a  
12 Aquila Networks-MPS (MPS) and Aquila Networks-L&P (L&P), collectively referred to as  
13 Aquila, based upon a test year of January 1, 2005 – December 31, 2005, updated for known  
14 and measurable changes through September 30, 2006.

15 Q. Which specific adjustments to Staff Accounting Schedule 10 - Adjustments to  
16 Income Statement are you sponsoring?

17 A. For the MPS division, I am sponsoring the following adjustments to revenues:

- 18 • S-1.3 (billing corrections),  
19 • S-1.4 (March 1, 2006 rate change),  
20 • S-1.5 (weather normalization), and  
21 • S-1.6 (days adjustment).

22 For the L&P Division, I am sponsoring the following adjustments:

- 23 • S-1.3 (billing corrections),

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- S-1.4 (March 1, 2006 rate change),
- S-1.5 (weather normalization), and
- S-1.6 (days adjustment).

With the exception of the annualization for the rate change, these revenue adjustments are based on an underlying change in kWh sales.

Q. What is your recommendation to the Commission regarding the appropriate level of kWh sales and rate revenue for MPS and L&P?

A. I recommend that the Commission adopt the Staff's adjustments to test year rate revenue and kWh sales for MPS that are shown on the attached Schedule CW-3 and Schedule CW-4, respectively, and the Staff's adjustments to test year rate revenue and kWh sales for L&P that are shown on the attached Schedule CW-5 and Schedule CW-6, respectively. If adopted, Staff's kWh sales will be used as an input into the calculation of Missouri fuel and purchased power expense. Also, if adopted, Staff's Missouri rate revenue and kWh sales by rate class will be used to compute and implement any Commission-ordered revenue changes in this case.

**WEATHER DATA**

Q. What weather data did the Staff use in this case?

A. Because the weather-related demand for electricity is driven primarily by temperature, the Staff used the "actual" daily maximum and minimum temperatures for the test year at the Kansas City weather station located at Kansas City International Airport. To determine normals for NOAA's most recent 30-year normals period (1971-2000), I used maximum and minimum temperatures for the period of the existence of the Kansas City International Airport station (November 1, 1972- December 31, 2000), supplemented with the

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1 average of three nearby stations (Kansas City Downtown, Lexington, and St Joseph) for the  
2 period January 1, 1971-October 31, 1972. In his direct testimony, Mr. Lange will explain  
3 how he utilized this data for this case.

4 Q. What are "normal" temperatures?

5 A. As stated by the National Oceanic and Atmospheric Administration (NOAA)  
6 in its publication, Climatography of the United States No. 81, Monthly Station Normals of  
7 Temperature, Precipitation, and Heating and Cooling Degree Days, 1971-2000, Missouri, "A  
8 climate normal is defined, by convention, as the arithmetic mean of a climatological element  
9 computed over three consecutive decades (WMO, 1989)." NOAA applies this concept to  
10 temperature by calculating thirty-year temperature normals for the most recent three  
11 consecutive decades as monthly average maximum temperature and monthly average  
12 minimum temperature, using the Fahrenheit scale. The three most recent consecutive decades  
13 are currently the thirty years ending December 31, 2000.

14 International convention among members of the World Meteorological Organization  
15 (WMO), and its predecessor, the International Meteorological Committee, have established  
16 that three-decade periods are appropriately long and uniform periods for the calculation of  
17 normals. NOAA recalculates thirty-year normals at the end of each decade as a way of  
18 dealing with changes in measurement conditions and changes in the climate itself.

19 Q. Why did you use temperatures at the Kansas City weather station?

20 A. The temperatures at the Kansas City National Weather Service (NWS) weather  
21 station best represent the weather in Aquila's service territory in Missouri, and the Kansas  
22 City weather station is a "first order (Principal Climatological)" weather station staffed by  
23 professional observers.

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1 Q. Is the Staff's weather data consistent with Aquila's weather data?

2 A. Aquila witness Robert D. Adkins also used weather data from the same  
3 weather station (Adkins direct, page 5, lines 10 and 11) and for the same time period used by  
4 Staff. (Adkins direct, page 5, line 12).

5 **STAFF WEATHER DATA ADJUSTMENTS**

6 Q. What temperature data is available from the Kansas City area weather stations?

7 A. Actual (unadjusted) maximum and minimum daily temperatures for the 30-  
8 year normals period (1971-2000) are available from NOAA internet sources such as the  
9 Midwest Climate Information Service and the National Climatic Data Center. NOAA also  
10 provides adjusted maximum and minimum monthly temperatures for this time period, in a file  
11 known as the NOAA Sequentials, in which NOAA has made adjustments to the monthly  
12 averages to account for missing data, significant discontinuities with surrounding stations,  
13 time of observation, etc. The NOAA Sequential data set consists of adjusted monthly average  
14 maximum and minimum temperatures for each month over the 30-year normals period,  
15 resulting in 360 (12 X 30 = 360) entries for maximum temperature and 360 observations for  
16 minimum temperature. The 30-year average of the adjusted maximum and minimum  
17 temperatures for each of the 12 months constitutes NOAA's monthly normals.

18 Q. Given that NOAA has made adjustments to more accurately reflect  
19 temperatures over the 30-year normals period, why are NOAA's monthly normals not  
20 sufficient for the Staff's purposes?

21 A. Since the NOAA adjustments for changes in measurement conditions and  
22 climate are to monthly temperatures over the period, they do not contain sufficient  
23 information for weather-normalizing electricity use. The Staff needs *daily* temperature



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1 normals because the relationship between the demand for electricity and temperature is non-  
2 linear. Usage increases more in response to a one degree increase in extremely hot  
3 temperatures (or to a one degree decrease in extremely cold temperatures) than to a one  
4 degree change in milder temperatures, *daily* temperatures that reflect these temperature  
5 extremes must be used so as not to understate the effects of weather on electricity sales and  
6 revenues.

7 Q. Is it possible to incorporate the NOAA adjustments into the actual daily  
8 minimum and maximum temperatures?

9 A. Yes. The Staff has developed a methodology to derive adjusted daily  
10 temperatures from the monthly NOAA Sequential.

11 Q. How did you make sure that the adjusted daily temperatures by this method  
12 correspond to NOAA's normals?

13 A. I first calculated the monthly averages of the daily maximum and minimum  
14 temperatures that were adjusted. I then verified that these monthly averages are equal to the  
15 benchmarks, which are the monthly sequential temperatures that are used by NOAA to  
16 calculate its 30-year temperature normals. I also verified that the monthly averages of the  
17 adjusted daily temperatures are equal to NOAA's 12 monthly normal temperatures for the  
18 Kansas City station. The crosschecks were successful in this case, thus insuring that the  
19 adjusted daily temperature products supplied to Mr. Lange are consistent with the NOAA  
20 normals. The calculations and results have been made available to the parties in the computer  
21 spreadsheets that make up my workpapers.

22 Q. Is using NOAA's Normals period for determining normal weather consistent  
23 with the Staff's position in previous cases?

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1           A.     Yes. Dr. Wayne Decker, the State Climatologist for Missouri, testified as a  
2     witness for the Staff in Case No. GR-92-165 as to the appropriateness of using the NOAA and  
3     WMO "normals" period. The Staff has used this time period and adjusting methodology in  
4     all of the electric and gas cases since then.

5           Q.     Has the Commission made any findings with respect to the use of NOAA's  
6     thirty-year normal?

7           A.     Yes. The use of the NOAA 30-year normal and 30-year normals period  
8     complies with a provision of the Commission's Report and Order in the Missouri Gas Energy  
9     rate case, Case No. GR-96-285. At page 18 of its Report and Order, the Commission stated:  
10    "The Commission finds that NOAA's 30-year normals is the more appropriate  
11    benchmark . . . . In addition, the data upon which Staff's recommendation is based has gone  
12    through the processes established by NOAA to ensure the best data possible." The 30-year  
13    period has been accepted consistently in electric rate cases since then.

14                   **ADJUSTMENTS TO KWH SALES AND RATE REVENUE**

15          Q.     Please describe Staff's ratemaking treatment of rate revenues and kWh sales.

16          A.     Schedule CW-2 contains an explanation of the basic ratemaking concepts used  
17    in Staff's treatment of rate revenues and kWh sales.

18          Q.     Please briefly describe the contents of Schedules CW-3 through CW-6.

19          A.     Schedule CW-3 (MPS) and Schedule CW-5 (L&P Electric) have been  
20    compiled to serve a dual purpose. The columns of my schedules present the results of each of  
21    the multiple adjustments (annualizations, normalizations, and growth adjustments) that were  
22    made to rate revenues. The rows of my schedules present annualized, normalized, growth-

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1 adjusted rate revenues by rate class. The row totals are inputs into the class cost of service /  
2 rate design analysis.

3 Schedule CW-4 (MPS) and Schedule CW-6 (L&P) possess a similar layout but the  
4 values contained in the cells represent the kWh sales corresponding to each adjustment to rate  
5 revenue.

6 Q. What is the relationship between the adjustments to Missouri rate revenues  
7 shown on your Schedules CW-3 (MPS) and CW-5 (L&P Electric) and the S-1 adjustments  
8 shown on Accounting Schedule 10 - Adjustments to Income Statement for each of the  
9 respective Aquila divisions?

10 A. The column total for each of the adjustments to Missouri rate revenue shown  
11 on my Schedules CW-3 (MPS) and CW-5 (L&P Electric) has a corresponding S-1 adjustment  
12 shown on Accounting Schedule 10 - Adjustments to Income Statement. The Accounting  
13 Schedule does not record adjustments to kWh sales.

14 Q. What specific adjustments were made to test year kWh sales and rate  
15 revenues?

16 A. The adjustments to test year kWh sales and rate revenues that were made in  
17 this case were: (i) annualization for 365 days (days adjustment); (ii) annualization for billing  
18 corrections; (iii) annualization for large customer load changes; (iv) annualization due to  
19 growth in the number of customers; (v) weather normalization; and (vi) adjustment for a rate  
20 change that occurred during the update period.

21 Q. Are you responsible for the contents of Schedules CW-3 through CW-6?

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1           A.     While I am responsible for compiling these tables, the values contained within  
2     them represent the collective effort of three Staff witnesses: Shawn Lange, Amanda  
3     McMellen, and me.

4           Q.     Please briefly describe the information provided by Mr. Lange in developing  
5     Schedules CW-3 through CW-6.

6           A.     Mr. Lange provided the weather normalization adjustments to kWh sales by  
7     rate code and the adjustments that reflect a 365-day billing year. These adjustments to test  
8     year kWh sales are an input both into my determination of the effect of weather normalization  
9     on rate revenues and into Mr. Lange's determination of the normalized hourly system load  
10    used in Staff's production cost simulation (fuel) model.

11          Q.     Please describe the information provided by Ms. McMellen in developing  
12    Schedules CW-3 through CW-6.

13          A.     Staff witness McMellen provided the adjustments to annualize kWh sales and  
14    rate revenues for the large power service customers. She also provided the adjustments that  
15    reflect the effect that growth (or decline) in the number of customers had on both kWh sales  
16    and rate revenues.

17          Q.     What was your role in developing the numbers contained in Schedules CW-3  
18    through CW-6?

19          A.     I am responsible for compiling the "starting point" (As Billed Sales and As  
20    Billed Revenue). I am responsible for calculating the adjustments to revenues that correspond  
21    to Mr. Lange's weather normalization and days adjustment to kWh sales. In addition, I am  
22    also responsible for the annualization to rate revenue that reflects the rate change that  
23    occurred on March 1, 2006, as an outcome of Case No. ER-2005-0436.

**WEATHER NORMALIZATION OF REVENUES**

Q. Please describe the method Staff used to weather normalize rate revenue.

A. The corresponding effect that the weather normalization of kWh sales had on rate revenues was calculated by a method known as "average realization". This method applies the average price per kWh for each specific month to the weather adjustment to that month's kWh sales. The average realization method estimates the additional revenue associated with additional kWh sales by assuming that these additional sales would be priced at the same average rate as all other sales in that month.

Q. What refinement did you make to the average realization method you used in this case?

A. Fixed charges that customers currently pay were removed from the calculation of the average monthly price. Weather affects only the energy usage of each existing customer and, thus, only affects those charges directly related to kWh usage

Q. Which MPS and L&P rate codes were weather-normalized using the average realization method?

A. This method was applied to all of the rate codes for which Mr. Lange had computed a weather adjustment to kWh sales. For MPS, weather adjustments were computed for residential rate codes MO860 and MO870; for small general service rate codes MO710 & 711 (combined) and MO740; and for large general service rate code MO720. For L&P Electric, weather adjustments were computed for residential rate codes (MO910, MO911, MO913, MO914, MO915, MO920, MO921, MO922); small general service rate codes (MO930, MO931, MO932, MO933, MO934, MO941); and large general service rate code (MO940).

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1           No changes were made to test year actual revenues for the remaining rate codes  
2 because they are not weather-sensitive and, therefore, required no adjustments due to the  
3 effects of weather.

4           Q.     What was the source of the monthly average rate per kWh that was used to  
5 weather normalize rate revenue?

6           A.     In situations where only one rate value applies to all monthly usage, the  
7 monthly rate per kWh used was taken directly from the existing test year rate schedule. When  
8 multiple energy rates exist and/or demand charges exist, the monthly average rate per kWh  
9 was taken directly from Schedules RDA-1 and RDA-2 attached to the direct testimony of  
10 Aquila witness Robert D. Adkins.

11                               **DAYS ADJUSTMENTS TO RATE REVENUE**

12           Q.     Please describe the rationale for calculating a days adjustment to kWh sales  
13 and rate revenue.

14           A.     Staff's days adjustment (also known as an "unbilled" adjustment) represents  
15 the change in kWh sales and rate revenues associated with adjusting the 12 test year billing  
16 months to the equivalent of 365 days. This adjustment is necessary to ensure that kWh sales  
17 and revenues that are measured by billing year, which may be longer or shorter than a  
18 calendar year, will properly "match" expenses that are measured by calendar year.

19           Q.     Please describe the process Staff used to calculate the days adjustment to rate  
20 revenue.

21           A.     Mr. Lange computed an annual days adjustment to kWh sales for each rate  
22 code that he weather normalized. I converted Mr. Lange's annual days adjustment to a series  
23 of twelve monthly adjustments by assuming that these annual kWhs are distributed

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1 throughout the months in the year in the same proportion as weather-normalized kWhs. I then  
2 calculated the monthly days adjustment to rate revenue by multiplying monthly days  
3 adjustments to kWh sales by the same associated monthly rate (cents per kWh) that was used  
4 to calculate the weather adjustment to rate revenue.

5 **EFFECT OF THE RATE CHANGE ON REVENUES**

6 Q. Please describe the rationale for annualizing revenues to reflect a rate change  
7 that occurred during the update period.

8 A. One outcome of Case No. ER-2005-0436 was the implementation of new  
9 permanent rates effective March 1, 2006. These rates were designed to collect an additional  
10 \$38.5 million in annual revenue for MPS and \$6.3 million for L&P Electric.

11 I normalized the revenue for the test year to reflect the difference between the amount  
12 that was actually billed to customers and the revenue that Aquila would have collected if the  
13 new rates had been in effect during the test year.

14 Q. Which months in the test year were adjusted to reflect the effect of the rate  
15 change on revenues?

16 A. Since the rate change occurred after the calendar year 2005 test year, all  
17 revenues were affected since all usage in those months had been billed on "old" rates.

18 Q. Please describe the process Staff used to calculate the effect of the rate change  
19 on revenues.

20 A. The percentage increase in revenues for each rate class approved as a result of  
21 Case No. ER-2005-0436 was applied to the total test year revenue for each class.

22 **ADJUSTMENTS TO RATE REVENUE DUE TO RATE SWITCHING**

23 Q. What adjustment to rate revenue did you make to reflect rate switching?

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1           A.     In June 2005, a test program was implemented that provided an alternate  
2     “fixed billing” to selected Aquila L&P residential customers for a one-year period. There  
3     were approximately 530 customers in this experimental program during the June 2005 – May  
4     2006 program year and approximately 1,100 customers who contracted for the June 2006 –  
5     May 2007 program year. The kWh sales and rate revenues associated with these customers  
6     were recorded as rate code MO916.

7           To annualize this rate code for the test year, I applied the average sales and revenue of  
8     this code for January through May of 2006 to the corresponding months of the test year, and  
9     made a corresponding and equal reduction to the sales and revenues of the rate codes that  
10    were the source of these customers. Due to a significant increase in customers at the  
11    beginning of the second year of the test program, I replaced the June through December 2005  
12    values with the average of the more representative 2006 values, and likewise reduced the  
13    source rate codes by an equal amount.

14                               **RATE SCHEDULE CHANGES**

15           Q.     What changes to rate schedules occurred subsequent to the test year?

16           A.     As a result of Case No. ER-2005-0436, several rate schedules (rate codes)  
17     were deleted, added, or consolidated. A diagram of these changes is shown on Schedules  
18     CW-7 (MPS) and CW-8 (L&P). To reflect these changes, I have created Schedule CW-9 and  
19     CW-10 which present the annualized, normalized, growth-adjusted kWh sales and rate  
20     revenue for MPS and L&P by current rate classes.

21           Q.     Does this conclude your direct testimony?

22           A.     Yes, it does.



**TESTIMONY FILED BEFORE THE MISSOURI PUBLIC SERVICE COMMISSION**

<u>Case Number</u>	<u>Company</u>	<u>Issue</u>
ER-2006-0315	Empire District Electric	Revenue
ER-2006-0314	Kansas City Power & Light Company	Calculation of Normal Weather, Revenue
GR-2006-0387	ATMOS Energy Corporation	Calculation of Normal Weather
GR-2006-0422	Missouri Gas Energy	Calculation of Normal Weather
ER-2007-0002	Union Electric d/b/a AmerenUE	Calculation of Normal Weather, Large Electric Customer Annualization
GR-2007-0003	Union Electric d/b/a AmerenUE	Calculation of Normal Weather

## **STAFF'S RATEMAKING TREATMENT OF REVENUES AND KWH SALES**

### **Rationale for Making Adjustments**

Kilowatt-hour (kWh) sales and revenue are analyzed for the test year, a historical 12-month time period, and update period, if any, that the Commission determines should be used for analyzing the costs of providing service to Missouri retail customers, based on the "matching principle" of ratemaking.

An accurate quantification of total Company kWh sales, including losses, is important for determining fuel and purchased power costs. Hourly net system loads, updated for known and measurable changes in kWh sales, are reflected in the production cost simulation model (fuel run) to ensure that the cost of generation and purchases is based on total net system requirements that are consistent with the revenue adjustments.

Staff quantifies two measures of revenue: rate revenue and operating revenue. Rate revenue is generated by the application of current Missouri rate schedules to the electrical usage of the Company's customers. The intent of adjustments to test year Missouri rate revenues is to estimate the revenue that the Company would have collected on an annual, normal-weather basis, based upon information "known and measurable" at the end of the update period. Missouri retail rate revenue will be used to compute the final rate levels that result from this case.

Operating revenue is the combination of rate revenue plus other ("non-rate") revenue. Examples of non-rate revenues are late payment charges, forfeited discounts, and margin (profits) from off-system sales. The difference between Missouri operating revenue and the Company's total revenue requirement, or total cost of service, will be used to determine the amount of any revenue increase (or decrease) that results from this case.

### **Categories of Adjustments**

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

### **Normalizations**

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

### **Annualizations**

Annualizations are adjustments that re-state test year results as if conditions known at the end of the update period had existed throughout the entire test year.

A common example of a revenue annualization is a rate change that occurs during the test year. In this situation, actual test year rate revenues will be understated or overstated by the difference between the amount that was actually billed to customers and the revenue that would have been realized by the Company if the rates in effect at the end of the update period had been in effect throughout the entire test year.

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

### **Customer Growth**

Customer growth adjustments are annualizations that reflect any additional sales and revenues that would have occurred if the total number of customers on the system at the end of the update period had been customers during all 12 months of the test year.

**AQUILA NETWORKS - MPS ELECTRIC**  
**CASE NO. ER-2007-0004**  
**ADJUSTED MISSOURI RETAIL RATE REVENUE BY RATE CODE**  
**(CALENDAR YEAR 2005, UPDATED THROUGH SEPTEMBER 30, 2006)**

		Billed Revenue from Permanent Rates (1)	Annualizations to Revenue (1)	Normalizations to Revenue (1)	Annualization for Growth/Large Power Annualizations(2)	Total Rate Revenue
	<b>Residential</b>					
MO860	Residential General Use	\$129,224,924	\$16,111,687	(\$3,821,424)	\$0	
MO870	Residential w/ Space Heat	\$59,140,559	\$7,575,962	\$365,079	\$0	
	<b>Total Residential</b>	<b>\$188,365,483</b>	<b>\$23,687,649</b>	<b>(\$3,456,345)</b>	<b>\$8,785,686</b>	<b>\$217,382,473</b>
	<b>Small General Service</b>					
MO710/711	Small GS	\$50,444,542	\$5,259,438	(\$570,649)	\$0	
MO716	Small GS w/kW mtr, Pri	\$45,641	\$5,142	\$0	\$0	
MO740	Schools & Churches	\$2,036,364	\$214,932	(\$34,783)	\$0	
MO800	Muni Water Pumps	\$464,342	\$52,316	\$0	\$0	
MO810	Muni Park & Rec	\$198,417	\$22,342	\$0	\$0	
MO811	Muni Park & Rec, 3-phase	\$196,762	\$22,168	\$0	\$0	
	<b>Total Small GS</b>	<b>\$53,386,068</b>	<b>\$5,576,337</b>	<b>(\$605,433)</b>	<b>(\$2,001,933)</b>	<b>\$56,355,040</b>
	<b>Large General Service</b>					
MO720	Large GS, Secondary	\$42,938,351	\$2,889,927	(\$400,616)	\$0	
MO725	Large GS, Primary	\$1,660,066	\$130,290	\$0	\$0	
MO721	RTP (721)	\$202,588	\$0	\$0	\$0	
	<b>Total Large GS</b>	<b>\$44,801,005</b>	<b>\$3,020,216</b>	<b>(\$400,616)</b>	<b>\$654,458</b>	<b>\$48,075,063</b>
	<b>Large Power</b>					
MO730	Large PS, Secondary	\$23,401,518	\$1,595,032	\$0	\$6,133,538	
MO735	Large PS, Primary	\$29,699,179	\$2,024,276	\$0	(\$2,935,891)	
MO731	RTP (731)	\$1,247,174	\$0	\$0	\$0	
MO737	RTP (737)	\$1,231,883	\$0	\$0	\$0	
	<b>Total Large Power</b>	<b>\$55,579,754</b>	<b>\$3,619,308</b>	<b>\$0</b>	<b>\$3,197,647</b>	<b>\$62,396,708</b>
	<b>Special</b>					
MO919	Special Contract (Modine)	\$232,969	\$73,121	\$0	(\$306,090)	
MO650	Thermal Energy Storage	\$344,177	\$38,777	\$0	\$0	
	<b>Total Special</b>	<b>\$577,146</b>	<b>\$111,898</b>	<b>\$0</b>	<b>(\$306,090)</b>	<b>\$382,954</b>
MONxx	<b>Lighting</b>	<b>\$5,692,362</b>	<b>\$641,335</b>	<b>\$0</b>	<b>\$0</b>	<b>\$6,333,697</b>
	Unaccounted for	(\$128,219)		\$0		(\$128,219)
MO888	Interdepartmental	\$10,404				\$10,404
	<b>Total MO \$ from Permanent Rates</b>	<b>\$348,284,003</b>	<b>\$36,656,744</b>	<b>(\$4,462,394)</b>	<b>\$10,329,768</b>	<b>\$390,808,121</b>

(1) Sponsored by Staff witness Curt Wells  
(2) Sponsored by Amanda McMellen

**AQUILA NETWORKS - MPS ELECTRIC**  
**CASE NO. ER-2007-0004**  
**DETAILS OF ADJUSTMENTS TO RATE REVENUE BY RATE CODE**  
**(CALENDAR YEAR 2005, UPDATED THROUGH SEPTEMBER 30, 2006)**

		Annualization for Billing Corrections	Normalization for Weather	Annualization for 365 Days	Annualization for Rate Change	Annualization for Growth/Load Changes/ Lg Power Ann (through 9/30/2006)
	<b>Residential</b>					
MO860	Residential General Use	(\$390,400)	(\$3,821,424)	(\$321,249)	\$16,823,335	
MO870	Residential w/ Space Heat	(\$348,559)	\$365,079	(\$50,144)	\$7,974,665	
	<b>Total Residential</b>	<b>(\$738,959)</b>	<b>(\$3,456,345)</b>	<b>(\$371,393)</b>	<b>\$24,798,001</b>	<b>\$8,785,686</b>
	<b>Small General Service</b>					
MO710/711	Small GS	(\$116,757)	(\$570,649)	(\$206,477)	\$5,582,673	
MO716	Small GS w/kW mtr, Pri	\$0	\$0	\$0	\$5,142	
MO740	Schools & Churches	(\$5,181)	(\$34,783)	(\$4,326)	\$224,439	
MO800	Muni Water Pumps	\$0	\$0	\$0	\$52,316	
MO810	Muni Park & Rec	\$0	\$0	\$0	\$22,342	
MO811	Muni Park & Rec, 3-phase	\$0	\$0	\$0	\$22,168	
	<b>Total Small GS</b>	<b>(\$121,939)</b>	<b>(\$605,433)</b>	<b>(\$210,803)</b>	<b>\$5,909,079</b>	<b>(\$2,001,933)</b>
	<b>Large General Service</b>					
MO720	Large GS, Secondary	(\$380,978)	(\$400,616)	(\$35,004)	\$3,305,909	\$0
MO725	Large GS, Primary	\$0	\$0	\$0	\$130,290	\$0
MO721	RTP (721)	\$0	\$0	\$0	\$0	\$0
	<b>Total Large GS</b>	<b>(\$380,978)</b>	<b>(\$400,616)</b>	<b>(\$35,004)</b>	<b>\$3,436,198</b>	<b>\$654,458</b>
	<b>Large Power</b>					
MO730	Large PS, Secondary	\$0	\$0	\$0	\$1,595,032	\$6,133,538
MO735	Large PS, Primary	\$0	\$0	\$0	\$2,024,276	(\$2,935,891)
MO731	RTP (731)	\$0	\$0	\$0	\$0	\$0
MO737	RTP (737)	\$0	\$0	\$0	\$0	\$0
	<b>Total Large Power</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$3,619,308</b>	<b>\$3,197,647</b>
	<b>Special</b>					
MO919	Special Contract (Modine)	\$0	\$0	\$0	\$73,121	(\$306,090)
MO650	Thermal Energy Storage	\$0	\$0	\$0	\$38,777	\$0
	<b>Total Special</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$111,898</b>	<b>(\$306,090)</b>
MONxx	<b>Lighting</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$641,335</b>	<b>\$0</b>
	Unaccounted for					
MO888	Interdepartmental					
	<b>Total MO \$ from Permanent Rates</b>	<b>(\$1,241,875)</b>	<b>(\$4,462,394)</b>	<b>(\$617,201)</b>	<b>\$38,515,820</b>	<b>\$10,329,768</b>

(1) Sponsored by Staff witness Curt Wells  
(2) Sponsored by Amanda McMellen

**AQUILA NETWORKS - MPS ELECTRIC**  
**CASE NO. ER-2007-0004**  
**ADJUSTED MISSOURI RETAIL KWH SALES BY RATE CODE**  
**(CALENDAR YEAR 2005, UPDATED THROUGH SEPTEMBER 30, 2006)**

		<b>As Billed Sales (kWh) (1)</b>	<b>Annualizations to kWh Sales(1)</b>	<b>Normalizations to kWh Sales (2)</b>	<b>Annualizations for Growth &amp; Large Power(3)</b>	<b>Total Sales (kWh)</b>
	<b>Residential</b>					
MO860	Residential General Use	1,694,365,626	(10,274,071)	(52,362,375)	-	
MO870	Residential w/ Space Heat	945,272,548	(8,105,481)	8,309,206	-	
	<b>Total Residential</b>	<b>2,639,638,174</b>	<b>(18,379,553)</b>	<b>(44,053,169)</b>	<b>129,005,647</b>	<b>2,706,211,099</b>
	<b>Small General Service</b>					
MO710/711	Small GS	766,452,293	(5,177,626)	(7,522,277)	-	
MO716	Small GS w/kW mtr, Pri	812,080	-	-	-	
MO740	Schools & Churches	30,281,637	(159,273)	(451,206)	-	
MO800	Muni Water Pumps	7,439,925	-	-	-	
MO810	Muni Park & Rec	2,477,232	-	-	-	
MO811	Muni Park & Rec, 3-phase	2,445,016	-	-	-	
	<b>Total Small GS</b>	<b>809,908,183</b>	<b>(5,336,900)</b>	<b>(7,973,483)</b>	<b>(26,311,355)</b>	<b>770,286,445</b>
	<b>Large General Service</b>					
MO720	Large GS, Secondary	819,979,713	(9,061,547)	(5,314,134)	-	
MO725	Large GS, Primary	34,053,319	-	-	-	
MO721	RTP (721)	3,980,634	-	-	-	
	<b>Total Large GS</b>	<b>858,013,666</b>	<b>(9,061,547)</b>	<b>(5,314,134)</b>	<b>11,982,118</b>	<b>855,620,103</b>
	<b>Large Power</b>					
MO730	Large PS, Secondary	484,553,710	-	-	157,433,202	
MO735	Large PS, Primary	772,013,509	-	-	(108,124,284)	
MO731	RTP (731)	23,869,162	-	-	-	
MO737	RTP (737)	18,647,331	-	-	-	
	<b>Large Power</b>	<b>1,299,083,712</b>	<b>-</b>	<b>-</b>	<b>49,308,918</b>	<b>1,348,392,630</b>
	<b>Special</b>					
MO919	Special Contract (Modine)	5,560,251	-	-	(5,560,251)	-
MO650	Thermal Energy Storage	8,151,169	-	-	-	8,151,169
	<b>Total Special</b>	<b>13,711,420</b>	<b>-</b>	<b>-</b>	<b>(5,560,251)</b>	<b>8,151,169</b>
MONxx	<b>Lighting</b>	<b>44,565,552</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>44,565,552</b>
	Unaccounted for	1,000				1,000
MO888	Interdepartmental	342,000				342,000
	<b>Total MO kWh Sales</b>	<b>5,665,263,707</b>	<b>(32,777,999)</b>	<b>(57,340,786)</b>	<b>158,425,077</b>	<b>5,733,569,999</b>

(1) Compiled by Staff witness Curt Wells  
(2) Sponsored by Shawn Lange  
(3) Sponsored by Amanda McMellen

**AQUILA NETWORKS - MPS ELECTRIC**  
**CASE NO. ER-2007-0004**  
**DETAILS OF ADJUSTMENTS TO MISSOURI SALES BY RATE CODE**  
**(CALENDAR YEAR 2005, UPDATED THROUGH SEPTEMBER 30, 2006)**

		<b>Annualization for Billing Corrections</b>	<b>Normalization for Weather</b>	<b>Annualization for 365 Days</b>	<b>Annualizations for Growth &amp; Large Power(3)</b>
	<b>Residential</b>				
MO860	Residential General Use	(5,623,291)	(52,362,375)	(4,650,780)	
MO870	Residential w/ Space Heat	(7,363,801)	8,309,206	(741,680)	
	<b>Total Residential</b>	<b>(12,987,093)</b>	<b>(44,053,169)</b>	<b>(5,392,460)</b>	<b>129,005,647</b>
	<b>Small General Service</b>				
MO710/711	Small GS	(2,155,072)	(7,522,277)	(3,022,554)	
MO716	Small GS w/kW mtr, Pri	-	-	-	
MO740	Schools & Churches	(96,228)	(451,206)	(63,045)	
MO800	Muni Water Pumps	-	-	-	
MO810	Muni Park & Rec	-	-	-	
MO811	Muni Park & Rec, 3-phase	-	-	-	
	<b>Total Small GS</b>	<b>(2,251,301)</b>	<b>(7,973,483)</b>	<b>(3,085,599)</b>	<b>(26,311,355)</b>
	<b>Large General Service</b>				
MO720	Large GS, Secondary	(8,548,428)	(5,314,134)	(513,119)	
MO725	Large GS, Primary	-	-	-	
MO721	RTP (721)	-	-	-	
	<b>Total Large GS</b>	<b>(8,548,428)</b>	<b>(5,314,134)</b>	<b>(513,119)</b>	<b>11,982,118</b>
	<b>Large Power</b>				
MO730	Large PS, Secondary	-	-	-	157,433,202
MO735	Large PS, Primary	-	-	-	(108,124,284)
MO731	RTP (731)	-	-	-	
MO737	RTP (737)	-	-	-	
	<b>Large Power</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>49,308,918</b>
	<b>Special</b>				
MO919	Special Contract (Modine)	-	-	-	(5,560,251)
MO650	Thermal Energy Storage	-	-	-	
	<b>Total Special</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>(5,560,251)</b>
MONxx	<b>Lighting</b>		-	-	
	Unaccounted for				
MO888	Interdepartmental				
	<b>Total MO kWh Sales</b>	<b>(23,786,821)</b>	<b>(57,340,786)</b>	<b>(8,991,178)</b>	<b>158,425,077</b>

(1) Compiled by Staff witness Curt Wells  
(2) Sponsored by Shawn Lange  
(3) Sponsored by Amanda McMellen

(32,777,999)

43,748,667  
114,676,410



**AQUILA NETWORKS - L&P ELECTRIC**  
**CASE NO. ER-2007-0004**  
**ADJUSTED MISSOURI RETAIL RATE REVENUE BY RATE CODE**  
**(CALENDAR YEAR 2005, UPDATED THROUGH SEPTEMBER 30,2006)**

	<b>Billed Revenue from Permanent Rates (1)</b>	<b>Annualizations to Revenue (1)</b>	<b>Normalizations to Revenue (1)</b>	<b>Annualization for Growth (through 9/30/2006) (2)</b>	<b>Total Rate Revenue</b>
<b>Residential</b>					
MO910 Residential - General Use	\$21,015,785	\$1,669,173	(\$614,689)	\$0	
MO911 Multiple Occupancy	\$186,568	\$17,233	(\$5,591)	\$0	
MO920 Residential - Space Heat	\$15,298,955	\$1,238,716	\$463,241	\$0	
MO921 Multiple Occupancy	\$383,380	\$30,321	\$11,159	\$0	
MO913 Residential - Water Heat	\$5,225,487	\$417,611	(\$80,831)	\$0	
MO914 Multiple Occupancy	\$4,698	\$423	(\$90)	\$0	
MO915 Residential - Other Use	\$601,577	\$44,856	(\$8,784)	\$0	
MO916 Residential - Fixed Bill	\$796,284	\$69,452	\$0	\$0	
MO922 Residential - Limited Demand	\$27,488	\$2,127	\$692	\$0	
<b>Total Residential</b>	<b>\$43,540,221</b>	<b>\$3,489,913</b>	<b>(\$234,894)</b>	<b>\$181,831</b>	<b>\$46,977,070</b>
<b>Small General Service</b>					
MO930 General Service - Limited Demand	\$2,139,970	\$127,678	(\$5,173)	\$0	
MO931 General Service - General Use	\$3,339,165	\$211,833	(\$23,191)	\$0	
MO932 General Service - Limited w/ Space Heat	\$343,382	\$22,708	\$656	\$0	
MO933 General Service - Electric Space Heat	\$1,453,124	\$86,445	(\$520)	\$0	
MO934 General Service - Schools and Churches	\$395,580	\$23,061	(\$2,231)	\$0	
MO941 Non-Res Space/Water Heat	\$141,613	\$8,583	\$805	\$0	
<b>Total Small GS</b>	<b>\$7,812,834</b>	<b>\$480,307</b>	<b>(\$29,654)</b>	<b>\$91,140</b>	<b>\$8,354,627</b>
<b>MO940 Large General Service</b>	<b>\$18,576,834</b>	<b>\$1,012,974</b>	<b>(\$84,187)</b>	<b>\$1,046,101</b>	<b>\$20,551,722</b>
<b>MO944 Large Power Service</b>	<b>\$24,931,539</b>	<b>\$522,817</b>	<b>\$0</b>	<b>\$2,546,853</b>	<b>\$28,001,209</b>
<b>Lighting</b>					
MOSJx Street & Private Area Lighting	\$2,237,158	\$142,083	\$0	\$0	
MO971 Outdoor Night Lighting	\$34,342	\$2,181	\$0	\$0	
MO972 Street Lighting	\$32,526	\$2,066	\$0	\$0	
MO973 Traffic Signals	\$21,816	\$1,386	\$0	\$0	
<b>Total Lighting</b>	<b>\$2,325,842</b>	<b>\$147,715</b>	<b>\$0</b>	<b>\$0</b>	<b>\$2,473,557</b>
Interdepartmental	\$481				\$481
Unaccounted for	(\$80,322)				(\$80,322)
<b>Total MO \$ from Permanent Rates</b>	<b>\$97,107,428</b>	<b>\$5,653,727</b>	<b>(\$348,736)</b>	<b>\$3,865,925</b>	<b>\$106,278,344</b>

(1) Sponsored by Staff witness Curt Wells

(2) Sponsored by Staff witness Amanda McMellen

**AQUILA NETWORKS - L&P ELECTRIC**  
**CASE NO. ER-2007-0004**  
**DETAILS OF ADJUSTMENTS TO RATE REVENUE BY RATE CODE**  
**(CALENDAR YEAR 2005, UPDATED THROUGH SEPTEMBER 30, 2006)**

	Annualization for Billing Corrections	Annualization for Rate Change	Normalization for Weather	Annualization for 365 Days	Annualization for Growth/Load Changes/ Lg Power Ann (through 9/30/2006)	Total Adjustments
<b>Residential</b>						
MO910 Residential - General Use	(\$282)	\$1,770,548	(\$614,689)	(\$101,093)		\$1,054,484
MO911 Multiple Occupancy	\$1,586	\$15,901	(\$5,591)	(\$254)	\$0	\$11,641
MO920 Residential - Space Heat	(\$121)	\$1,363,868	\$463,241	(\$125,030)	\$0	\$1,701,957
MO921 Multiple Occupancy	\$0	\$34,084	\$11,159	(\$3,763)	\$0	\$41,480
MO913 Residential - Water Heat	\$0	\$446,223	(\$80,831)	(\$28,612)	\$0	\$336,780
MO914 Multiple Occupancy	\$0	\$404	(\$90)	\$20	\$0	\$333
MO915 Residential - Other Use	\$0	\$51,154	(\$8,784)	(\$6,298)	\$0	\$36,072
MO916 Residential - Fixed Bill	\$0	\$69,452	\$0	\$0	\$0	\$69,452
MO922 Residential - Limited Demand	\$0	\$2,431	\$692	(\$304)		\$2,819
<b>Total Residential</b>	<b>\$1,182</b>	<b>\$3,754,065</b>	<b>(\$234,894)</b>	<b>(\$265,334)</b>	<b>\$181,831</b>	<b>\$3,436,850</b>
<b>Small General Service</b>						
MO930 General Service - Limited Demand	(\$289)	\$135,110	(\$5,173)	(\$7,143)	\$0	\$122,505
MO931 General Service - General Use	(\$352)	\$210,673	(\$23,191)	\$1,512	\$0	\$188,642
MO932 General Service - Limited w/ Space Heat	\$4,489	\$21,901	\$656	(\$3,682)	\$0	\$23,364
MO933 General Service - Electric Space Heat	\$1,980	\$91,909	(\$520)	(\$7,444)	\$0	\$85,925
MO934 General Service - Schools and Churches	\$0	\$24,867	(\$2,231)	(\$1,806)	\$0	\$20,830
MO941 Non-Res Space/Water Heat	\$0	\$9,017	\$805	(\$435)	\$0	\$9,387
<b>Total Small GS</b>	<b>\$5,828</b>	<b>\$493,477</b>	<b>(\$29,654)</b>	<b>(\$18,998)</b>	<b>\$91,140</b>	<b>\$541,794</b>
<b>MO940 Large General Service</b>	<b>\$0</b>	<b>\$1,164,833</b>	<b>(\$84,187)</b>	<b>(\$151,859)</b>	<b>\$1,046,101</b>	<b>\$1,974,888</b>
<b>MO944 Large Power Service</b>	<b>\$0</b>	<b>\$522,817</b>	<b>\$0</b>	<b>\$0</b>	<b>\$2,546,853</b>	<b>\$3,069,670</b>
<b>Lighting</b>						
MOSJx Street & Private Area Lighting	\$0	\$142,083	\$0	\$0	\$0	\$142,083
MO971 Outdoor Night Lighting	\$0	\$2,181	\$0	\$0	\$0	\$2,181
MO972 Street Lighting	\$0	\$2,066	\$0	\$0	\$0	\$2,066
MO973 Traffic Signals	\$0	\$1,386	\$0	\$0	\$0	\$1,386
<b>Total Lighting</b>	<b>\$0</b>	<b>\$147,715</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$147,715</b>
Interdepartmental						
Unaccounted for						
<b>Total MO \$ from Permanent Rates</b>	<b>\$7,010</b>	<b>\$6,082,908</b>	<b>(\$348,736)</b>	<b>(\$436,191)</b>	<b>\$3,865,925</b>	<b>\$9,170,917</b>

(1) Sponsored by Staff witness Curt Wells

(2) Sponsored by Staff witness Amanda McMellen

**AQUILA NETWORKS - L&P ELECTRIC**  
**CASE NO. ER-2007-0004**  
**ADJUSTED MISSOURI RETAIL KWH SALES BY RATE CODE**  
**(CALENDAR YEAR 2005, UPDATED THROUGH SEPTEMBER 30, 2006)**

		<b>As Billed Sales (kWh) (1)</b>	<b>Annualizations to kWh Sales(1)</b>	<b>Normalizations to kWh Sales (2)</b>	<b>Annualizations for Growth &amp; Large Power(3)</b>	<b>Total Sales (kWh)</b>
	<b>Residential</b>					
MO910	Residential - General Use	315,971,730	(1,702,228)	(9,415,748)	-	
MO911	Multiple Occupancy	2,458,748	14,440	(85,313)	-	
MO920	Residential - Space Heat	317,641,929	(2,186,781)	9,262,907	-	
MO921	Multiple Occupancy	6,938,995	(65,828)	219,739	-	
MO913	Residential - Water Heat	88,309,321	(487,260)	(1,126,556)	-	
MO914	Multiple Occupancy	70,800	334	(1,356)	-	
MO915	Residential - Other Use	6,030,544	(109,193)	(140,256)	-	
MO916	Residential - Fixed Bill	11,945,245	-	-	-	
MO922	Residential - Limited Demand	528,514	(5,281)	14,145	-	
	<b>Total Residential</b>	<b>749,895,827</b>	<b>(4,541,797)</b>	<b>(1,272,438)</b>	<b>7,888,393</b>	<b>751,969,985</b>
	<b>Small General Service</b>					
MO930	General Service - Limited Demand	23,168,158	(125,922)	(35,952)	-	
MO931	General Service - General Use	47,657,979	19,791	(286,771)	-	
MO932	General Service - Limited w/ Space Heat	4,223,955	(156)	21,400	-	
MO933	General Service - Electric Space Heat	22,987,115	(92,896)	44,200	-	
MO934	General Service - Schools and Churches	4,690,165	(30,423)	(27,174)	-	
MO941	Non-Res Space/Water Heat	2,705,783	(7,605)	19,807	-	
	<b>Total Small GS</b>	<b>105,433,155</b>	<b>(237,211)</b>	<b>(264,490)</b>	<b>1,309,199</b>	<b>106,240,653</b>
MO940	<b>Large General Service</b>	<b>382,940,842</b>	<b>(2,586,295)</b>	<b>(1,008,490)</b>	<b>20,512,007</b>	<b>399,858,064</b>
MO944	<b>Large Power Service</b>	<b>655,270,954</b>		-	<b>77,539,126</b>	<b>732,810,080</b>
	<b>Lighting</b>					
MOS1x	Street & Private Area Lighting	19,816,936	-	-	-	
MO971	Outdoor Night Lighting	462,172	-	-	-	
MO972	Street Lighting	856,303	-	-	-	
MO973	Traffic Signals	482,065	-	-	-	
	<b>Total Lighting</b>	<b>21,617,476</b>	-	-	-	<b>21,617,476</b>
	Unaccounted for	-				-
	Interdepartmental	21,000				21,000
	<b>Total MO kWh Sales</b>	<b>1,915,179,254</b>	<b>(7,365,303)</b>	<b>(2,545,418)</b>	<b>107,248,724</b>	<b>2,012,517,258</b>

- (1) Compiled by Staff witness Curt Wells  
(2) Sponsored by Staff witness Shawn Lange  
(3) Sponsored by Staff witness Amanda McMellen

**AQUILA NETWORKS - L&P ELECTRIC**  
**CASE NO. ER-2007-0004**  
**DETAILS OF ADJUSTMENTS TO MISSOURI SALES BY RATE CODE**  
**(CALENDAR YEAR 2005, UPDATED THROUGH SEPTEMBER 30, 2006)**

	Annualization for Billing Corrections	Normalization for Weather	Annualization for 365 Days	Annualizations for Growth & Large Power(3)
<b>Residential</b>				
MO910 Residential - General Use	(4,771)	(9,415,748)	(1,697,457)	-
MO911 Multiple Occupancy	18,690	(85,313)	(4,250)	-
MO920 Residential - Space Heat	(3,291)	9,262,907	(2,183,490)	-
MO921 Multiple Occupancy	-	219,739	(65,828)	-
MO913 Residential - Water Heat	-	(1,126,556)	(487,260)	-
MO914 Multiple Occupancy	-	(1,356)	334	-
MO915 Residential - Other Use	-	(140,256)	(109,193)	-
MO916 Residential - Fixed Bill	-	-	-	-
MO922 Residential - Limited Demand	-	14,145	(5,281)	-
<b>Total Residential</b>	<b>10,628</b>	<b>(1,272,438)</b>	<b>(4,552,425)</b>	<b>7,888,393</b>
<b>Small General Service</b>				
MO930 General Service - Limited Demand	(3,645)	(35,952)	(122,277)	-
MO931 General Service - General Use	(5,757)	(286,771)	25,548	-
MO932 General Service - Limited w/ Space Heat	63,340	21,400	(63,496)	-
MO933 General Service - Electric Space Heat	35,437	44,200	(128,333)	-
MO934 General Service - Schools and Churches	-	(27,174)	(30,423)	-
MO941 Non-Res Space/Water Heat	-	19,807	(7,605)	-
<b>Total Small GS</b>	<b>89,375</b>	<b>(264,490)</b>	<b>(326,586)</b>	<b>1,309,199</b>
MO940 <b>Large General Service</b>	-	<b>(1,008,490)</b>	<b>(2,586,295)</b>	<b>20,512,007</b>
MO944 <b>Large Power Service</b>	-	-	-	<b>77,539,126</b>
<b>Lighting</b>				
MOSJx Street & Private Area Lighting	-	-	-	-
MO971 Outdoor Night Lighting	-	-	-	-
MO972 Street Lighting	-	-	-	-
MO973 Traffic Signals	-	-	-	-
<b>Total Lighting</b>	-	-	-	-
Unaccounted for				
Interdepartmental				
<b>Total MO kWh Sales</b>	<b>100,003</b>	<b>(2,545,418)</b>	<b>(7,465,306)</b>	<b>107,248,724</b>

- (1) Compiled by Staff witness Curt Wells  
(2) Sponsored by Staff witness Shawn Lange  
(3) Sponsored by Staff witness Amanda McMeilen

**TARIFF CONSOLIDATIONS / ELIMINATIONS THAT RESULTED FROM ER-2005-0436  
AQUILA NETWORKS - MPS**

<b>Rate Classes &amp; Rate Codes TY 2005</b>		<b>Rate Classes &amp; Rate Codes Post-March 2006</b>	
<u>Rate Code</u>		<u>Rate Code</u>	
<b>Residential</b>		<b>Residential</b>	
MO860	Residential General Use	MO860	Residential General Use
MO870	Residential w/ Space Heat	MO870	Residential w/ Space Heat
		New MO815	Residential - Other Use
<b>Small General Service</b>		<b>Small General Service</b>	
MO710/711	Small GS - Secondary	MO710/711	Small GS - Secondary
MO740	Schools & Churches	MO710/711	Small GS - Secondary
MO800	Muni Water Pumps	MO710/711	Small GS - Secondary
MO810	Muni Park & Rec	MO710/711	Small GS - Secondary
MO811	Muni Park & Rec, 3-phase	MO710/711	Small GS - Secondary
MO716	Small GS w/kW mtr, Pri	Frozen MO716	Small GS w/kW mtr, Pri
		New MO728	SGS Short-Term Service
<b>Large General Service</b>		<b>Large General Service</b>	
MO720	Large GS, Secondary	MO720	Large GS, Secondary
MO725	Large GS, Primary	MO725	Large GS, Primary
MO721	RTP (721)	MO721	RTP (721)
<b>Large Power</b>		<b>Large Power</b>	
MO730	Large PS, Secondary	MO730	Large PS, Secondary
MO735	Large PS, Primary	MO919	Special Contract (Modine)
MO731	RTP (731)	MO735	Large PS, Primary
MO737	RTP (737)	MO731	RTP (731)
		MO737	RTP (737)
<b>Special</b>		<b>Special</b>	
MO919	Special Contract (Modine)		
MO650	Thermal Energy Storage	MO650	Thermal Energy Storage
MONxx	<b>Lighting</b>	MONxx	<b>Lighting</b>

**TARIFF CONSOLIDATIONS / ELIMINATIONS THAT RESULTED FROM ER-2005-0436  
AQUILA NETWORKS - L&P**

<b>Rate Classes &amp; Rate Codes TY 2005</b>		<b>Rate Classes &amp; Rate Codes Post-March 2006</b>	
<u>Rate Code</u>		<u>Rate Code</u>	
	<b>Residential</b>		<b>Residential</b>
MO910/911	Residential - General Use	}	MO910/91: Residential - General Use
MO913/914	Residential - Water Heat		MO910/91: Residential - General Use
MO915	Residential - Other Use		MO915 Residential - Other Use
MO916	Residential - Fixed Bill		MO916 Residential - Fixed Bill
MO920/921	Residential - Space Heat		MO920/92: Residential - Space Heat
MO922	Res Sep Mtrd Space/Water Heat	Frozen	MO922 Residential - Sep Mtrd Heat
	<b>Small General Service</b>		
MO930	General Service - Limited Demand	}	MO930 General Service - Limited Demand
MO932	General Service - Limited w/ Space Heat		MO930 General Service - Limited Demand
MO934	General Service - Schools and Churches		MO930 General Service - Limited Demand
		New	MO928 SGS Short-Term Service
MO931	General Service - General Use	}	MO931 General Service - General Use
MO933	General Service - Electric Space Heat		MO931 General Service - General Use
MO941	Non-Res Sep Mtrd Space/Water Heat	Frozen	MO941 Non-Res Sep Mtrd Space/Water Heat
<b>MO940</b>	<b>Large General Service</b>		<b>MO940 Large General Service</b>
<b>MO944</b>	<b>Large Power Service</b>		<b>MO944 Large Power Service</b>
	<b>Lighting</b>		<b>Lighting</b>
MOSJx	Street & Private Area Lighting		MOSJx Street & Private Area Lighting
MO971	Outdoor Night Lighting		MO971 Outdoor Night Lighting
MO972	Street Lighting		MO972 Street Lighting
MO973	Traffic Signals		MO973 Traffic Signals

**AQUILA NETWORKS - MPS ELECTRIC**  
**CASE NO. ER-2007-0004**  
**ADJUSTED MISSOURI RETAIL RATE REVENUE BY RATE CODE**  
**AFTER TARIFF CONSOLIDATIONS / ELIMINATIONS**  
**(CALENDAR YEAR 2005, UPDATED THROUGH SEPTEMBER 30,2006)**

	KWH SALES	RATE REVENUE
<b>Residential</b>		
MO860 Residential General Use		
MO870 Residential w/ Space Heat		
MO815 Residential - Other Use		
<b>Total Residential</b>	<b>2,706,211,099</b>	<b>\$217,382,473</b>
<b>Small General Service</b>		
MO710/711 Small GS - Secondary		
MO716 Small GS w/kW mtr, Pri		
MO728 SGS - Short-Term Service		
<b>Total Small GS</b>	<b>770,286,445</b>	<b>\$56,355,040</b>
<b>Large General Service</b>		
MO720 Large GS, Secondary		
MO725 Large GS, Primary		
MO721 RTP (721)		
<b>Total Large GS</b>	<b>855,620,103</b>	<b>\$48,075,063</b>
<b>Large Power</b>		
MO730 Large PS, Secondary		
MO735 Large PS, Primary		
MO731 RTP (731)		
MO737 RTP (737)		
<b>Large Power</b>	<b>1,348,392,630</b>	<b>\$62,396,708</b>
MO650 Thermal Energy Storage	<b>8,151,169</b>	<b>\$382,954</b>
MONxx Lighting	<b>44,565,552</b>	<b>\$6,333,697</b>
Unaccounted for	<b>1,000</b>	<b>-\$128,219</b>
MO888 Interdepartmental	<b>342,000</b>	<b>\$10,404</b>
<b>Total MO \$ from Permanent Rates</b>	<b>5,733,569,999</b>	<b>\$390,808,121</b>

**AQUILA NETWORKS - L&P ELECTRIC**  
**CASE NO. ER-2007-0004**  
**ADJUSTED MISSOURI RETAIL RATE REVENUE BY RATE CODE**  
**AFTER TARIFF CONSOLIDATIONS / ELIMINATIONS**  
**(CALENDAR YEAR 2005, UPDATED THROUGH SEPTEMBER 30,2006)**

		KWH SALES	RATE REVENUE
	<b>Residential</b>		
MO910/911	Residential - General Use		
MO915	Residential - Other Use		
MO916	Residential - Fixed Bill		
MO920/921	Residential - Space Heat		
MO922	Res - Sep Mtrd Space/Water Heat		
	<b>Total Residential</b>	<b>751,969,985</b>	<b>\$46,977,070</b>
	<b>Small General Service</b>		
MO928	SGS - Short Term Service		
MO930	General Service - Limited Demand		
MO931	General Service - General Use		
MO941	Non-Res - Sep Mtrd Space/Water Heat		
	<b>Total Small GS</b>	<b>106,240,653</b>	<b>\$8,354,627</b>
<b>MO940</b>	<b>Large General Service</b>	<b>399,858,064</b>	<b>\$20,551,722</b>
<b>MO944</b>	<b>Large Power Service</b>	<b>732,810,080</b>	<b>\$28,001,209</b>
	<b>Lighting</b>		
MOSJx	Street & Private Area Lighting		
MO971	Outdoor Night Lighting		
MO972	Street Lighting		
MO973	Traffic Signals		
	<b>Total Lighting</b>	<b>21,617,476</b>	<b>\$2,473,557</b>
	Unaccounted for		(\$80,322)
	Interdepartmental	21,000	\$481
<b>Total MO \$ from Permanent Rates</b>		<b>2,012,517,258</b>	<b>\$106,278,344</b>