Exhibit No.:	
Issues:	Class Cost of Service Rate Design
Witness:	Janice Pyatte
Sponsoring Party:	MO PSC Staff
Type of Exhibit:	Direct Testimony
Case No.:	EO-2002-384
Date Testimony Prepared:	September 19, 2005

MISSOURI PUBLIC SERVICE COMMISSION

UTILITY OPERATIONS DIVISION

DIRECT TESTIMONY

OF

JANICE PYATTE

AQUILA, INC

CASE NO. EO-2002-384

Jefferson City, Missouri
September 2005

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of an Examination of the Class Cost of Service and Rate Design in the Missouri Jurisdictional Electric Service Operations of Aquila, Inc., formerly known as UtiliCorp United, Inc.	)))))	Case No. EO-2002-0384

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 Direct Testimony in question and answer form, consisting of 12 pages of Direct Testimony to be presented in the above case, that the answers in the following 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 16th day of September, 2005.

ROSEMARIE RIEDL
MY COMMISSION EXPIRES
June 1, 2009
NOTARY SEAL
#05509538
COLE COUNTY
NOTARY PUBLIC, STATE OF MISSOURI

Notary Public

My commission expires June 1, 2009

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DIRECT TESTIMONY

OF

JANICE PYATTE

AQUILA, INC.

CASE NO. EO-2002-384

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 Economic Analysis section of the Energy Department, Utility Operations Division.

Q. 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.

Q. What is the purpose of your direct testimony in this case?

A. I am responsible for organizing the load, billing unit, and revenue data used in Staff's analyses of the class cost of service (CCOS) and rate design examination of Aquila, Inc.'s Missouri jurisdictional electric operations: Aquila Networks-MPS (MPS) and Aquila Networks-L&P (L&P). I am responsible for the review of the rate structures used in the existing MPS and L&P rate schedules, as well as what appears to be Aquila's rate structure proposals. My testimony will also attempt to explain some fundamental concepts (and associated terminology) when it seems appropriate.

Q. How does your testimony relate to the testimony of other Staff witnesses in this case?

A. Staff is also providing direct testimony in this case from Mr. James C. Watkins and Mr. James A. Busch. Mr. Watkins is the coordinator for this case. His testimony describes the development and the rationale for the Staff's time-of-use allocation of production and transmission costs used in Staff's class cost of service studies. Mr. Busch discusses the methodology and presents the results of the Staff class cost of service studies done for MPS and L&P. I provided the load, billing unit, and revenue data that Mr. Busch used in his analyses of the class cost of service study.

Q. What are the major issues before the Commission in this case?

A. This case examines the electric class cost of service and electric rate design of MPS and L&P. Since this is a "rate design case," not a "rate case," the major issues to be addressed for each of the Aquila divisions are:

(1) What is the cost of providing service to the different Missouri retail rate classes?

(2) How does each class' cost of service compare to the revenues that current rates are generating from the customers who make up the class?

(3) How does one design rate structures and rate levels (prices) to be charged individual customers that best "track" these costs?

Various parties to this case, including Staff, will present one or more class cost of service studies to answer questions #1 and #2. It is unlikely that all of the studies will result in the same answer, so the contested issues will be the reasonableness of the methods used by each party to allocate total Missouri costs to classes.

Class Cost of Service

Q. What is the source of the data Staff used in this case?

A. Staff has reviewed and is using the basic data that Aquila provided to the parties in this case. The hourly class load data was generated by Aquila from its load research program. It has been weather-normalized on an hourly basis. Aquila did the special distribution cost studies performed for MPS and L&P.

Cost data from Aquila's last electric rate case in Missouri, Case No. ER-2004-0034 is the source of the cost data for MPS and L&P. The revenue data is also from Aquila's last rate case, adjusted to reflect the revenue increases that resulted from that case. In other words, any studies done for MPS or L&P with this data will be revenue-neutral to Aquila because total costs (expenses plus return on rate base) equal total revenues.

Q. Why is using cost and revenue data that is revenue-neutral advantageous?

A. When a class cost of service study is done on a revenue-neutral (to the Company) basis, the difference between each class's cost of service and the revenues

collected by current rates will net to zero (i.e., the revenue decreases to some classes must exactly equal the revenue increases to other classes); hence the use of the term "class revenue shifts."

Q. Please describe the development of the data Staff used in this case.

A. While Aquila developed the data being used in this case, the original parties participated in a series of technical conferences with Aquila aimed at specifying what data was to be developed and what methods were to be used to do so. This special process was used because the standard discovery (data request) process does not work when the required data is not routinely available nor can it be generated within the standard 20-day time period.

An advantage of using a coordinated, technical conference approach to discussing technical data-related issues before and during the process when the data is being created is that it ensures that each party can make its needs known up-front and has an opportunity to participate in the planning of the methods the Company will take to create certain data.

If all parties use the same data as inputs to the various studies that will be presented in this case, those studies should be directly comparable. Any differences in results should be strictly due to differences in methodology rather than to differences in data.

Q. What is a rate class?

A. Conceptually each rate class is composed of individual customers whose cost of service is similar and who are (or should be) subject to the same rates. It is not possible to directly measure the cost of service for each individual customer. What is

measurable, however, are customer-related factors such as energy usage, metered demand, and voltage level (who owns certain distribution facilities used by the customer), and class-related factors such as load shape (the pattern of energy usage over time) and diversity (how coincident the customer's peak is with the class peak). These factors are used to group customers who are likely to have similar costs. Classes need to be homogeneous in the statistical sense; namely, the variation in load and cost characteristics among the individuals within the class is smaller than the variation between classes.

Q. How do rate classes relate to the determination of class cost of service?

A. As described above, each rate class is composed of individual customers whose costs to serve are similar. The function of a class cost-of-service study is to measure the cost responsibility of each rate class as a whole. The choice of rate classes can affect the results of a class cost of service study because of the effects of load diversity in the allocation of distribution costs. Staff has carefully chosen the rate classes to be used in its class cost of service studies in a manner that we believe yields accurate study results.

Q. What rate classes were used by Staff for its class cost of service study of MPS?

A. Staff has defined the following rate classes (and the associated rate codes) for its MPS class cost of service study:

Residential (MO860, MO870)
Small General Service (MO710, MO711, MO716, MO740, MO800, MO810, MO811)
Large General Service (MO720, MO721, MO725)
Large Power (MO730, MO731, MO735, MO737)
Special Contract (MO919, MO650)

Lighting

Q. What rate classes were used by Staff for its class cost of service study of L&P?

A. Staff has defined the following rate classes (and the associated rate codes) for its L&P class cost of service study:

Residential (MO910, MO911, MO913, MO914, MO915, MO920, MO921)
Small General Service (MO930, MO931, MO932, MO933, MO934)
Large General Service (MO940)
Large Power Service (MO944)
Lighting

Q. Why did Staff aggregate all residential rate codes into a single residential class rather than define each rate code as a separate class?

A. The residential data that Aquila has provided indicates that all rate codes have the same cost characteristics in the summer but not necessarily in the winter. The distinguishing characteristic of the multiple residential rate codes is the end use (residential general use, residential use with electric space heat, residential use with electric water heat) for which electricity is, in part, being used. In my opinion, the proper way to analyze this situation is to:

(1) determine total residential cost responsibility by defining one, all-encompassing residential rate class to be used in the class cost of service study. This will ensure a proper allocation of total costs between residential and the other rate classes.

(2) perform a sub-class cost of service study that further splits residential costs among the various end-use rate codes and between seasons.

This methodology seems unnecessarily complicated when compared to allocating costs directly to each rate code, but I believe that it yields a more accurate result. Allocating costs directly to each residential rate code can magnify cost differences.

Q. Why has Staff chosen to combine all large general service rate codes into a single large general service class rather than define each rate code as a separate class?

A. The situation with large general service (and large power) rate codes is somewhat different than the situation with the residential rate codes and thus requires a somewhat different procedure. The distinguishing feature between large general service rate codes is the voltage level (secondary or primary) at which the customer is served.

My load analysis concluded that groups of primary and secondary customers of similar size displayed similar load shapes and thus similar time-of-use costs. The main cost differences between these groups of primary and secondary customers are those distribution costs associated with voltage level (i.e., losses and ownership of transformation equipment). Ultimately I believe that the rates designed for these customers should differ only by those costs associated with voltage level.

Allocating costs to these customers as a single rate class in a class cost of service study, rather than as two distinct rate classes, will more properly reflect both the results of my load analysis and the rate design objective. The voltage-level-specific data was used where appropriate (i.e., in allocating distribution costs) in Staff's study. No sub-class cost of service study needed to be done because differences in costs specifically due to differences in voltage level can easily be handled within the design of rates.

Q. How were commercial customers distinguished from industrial customers in Staff's class cost of service studies?

A. No attempt was made to distinguish commercial from industrial customers in Staff's class cost of service studies. "Commercial" and "industrial" are classifications that are not very useful for grouping customers by cost characteristics, even though they are important in the reporting of operating data to various federal agencies. The small general service, large general service, and large power service rate classes each contain a mixture of both commercial and industrial customers.

Q. Why did Staff make lighting a rate class to be analyzed?

A. The usual difficulty with allocating costs to a lighting class is adequately capturing the production and transmission costs associated with its load shape (pattern of electrical use over time). Doing so in this case was possible because Staff's time-of-use allocation method prices class loads on each hour of the year.

Q. What is the limitation of using only the results of a class cost of service study to design rates?

A. It is important to understand the distinction between "revenues" and "rates." Revenues refer to an aggregate amount of money. Rates are concerned with the individual prices (cents per kWh, $ per kW, etc.) that are charged individual customers. CCOS studies are only concerned with the total revenues recovered, regardless of how much each customer pays.

Rate Design

Q. What types of rate schedules does the Company currently have?

A. The company's tariff book includes rate schedules that provide for a wide range of services, including residential rate schedules that may be based on end-use; non-residential rate schedules for non-demand-metered customers; general application rate

schedules based upon customer size and load factor for non-residential, demand-metered customers; curtailable (interruptible) load; time-of-day pricing of loads; and lighting.

Q. What features should a rate structure used to recover costs from residential and very small, non-demand-metered non-residential possess?

A. Residential and very small, non-demand-metered non-residential customers require a rate structure that consists, at minimum, of : (i) a monthly $-per-bill charge that is independent of customer usage; (ii) a monthly cents-per-kWh charge that varies by season and is charged based upon monthly customer usage.

Q. Do the rate structures currently being used to recover costs from L&P residential and very small, non-demand-metered non-residential possess these features?

A. Yes. In fact, L&P has a plethora of rate schedules with similar rate structures and, in some cases, similar rate levels. Certain of the rate schedules apply to customers with different end uses (residential general use, residential use with electric space heating, residential use with electric water heating). Many of the energy charges have multiple rate blocks.

Q. Do the rate structures currently being used to recover costs from MPS residential and very small, non-demand-metered non-residential possess these features?

A. Yes. MPS also has multiple rate schedules with similar rate structures, including multi-block energy charges. The existing end use categories are residential general use and residential use with electric space heating. The non-residential rate schedules that fit into this category are small general service (MO710), schools & churches (MO740), and municipal service (MO800, MO810, MO811).

Q. What features should a rate structure used to recover costs from demand-metered customers possess?

A. Demand-metered customers require a rate structure that consists, at minimum, of: (i) a monthly $-per-bill charge that is independent of customer usage; (ii) a monthly $-per-kW charge that is subject to a minimum billing demand; (iii) a monthly cents-per-kWh charge that varies by season and is capable of accommodating customers of differing sizes; and (iv) some mechanism to reflect cost differences due to voltage level.

Q. Do the rate structures currently being used to recover costs from L&P demand-metered customers possess these features?

A. Yes. The L&P rate structure consists of a service charge, a distribution facilities charge, a seasonally-differentiated demand charge, and a seasonally-differentiated, multi-block, hours use energy charge. This facilities charge/hours use rate structure is similar to that used by Kansas City Power & Light Company.

Cost differences due to voltage level are treated as follows: losses are reflected as a percentage change to metered units prior to billing and customer ownership of transformation equipment is reflected as a credit or debit ($ per kW) to the facilities charge.

Q. Do the rate structures currently being used to recover costs from MPS demand-metered customers possess these features?

A. Yes. The MPS rate structure consists of a customer charge, a seasonally-differentiated base and seasonal demand charge, and a multi-block, hours use energy

charge. This base and seasonal/hours use rate structure is virtually identical to that used by AmerenUE.

The MPS rate schedules reflect the cost differences due to voltage level through the use of two separate set of rates: one to be charged secondary customers and the other to be charged primary customers.

Q. What is your appraisal of these two rate structures?

A. These two rate structures represent different means of recovering costs from individual customers. As far as I am aware, both rate structures currently do a satisfactory job of recovering total costs and accounting for cost differences between customers served on each rate schedule. Staff's position is that the current rate structures of both MPS and L&P are fine and that there are no compelling reasons to make any major changes to them.

Q. Are there other features to be considered when judging rate structures?

A. One important feature is the degree of "rate continuity" between rate schedules. Rate continuity provides price signals to customers that they should move from one rate schedule to another as they grow in size, usage, and load factor. Since economically rational customers make the choice as to which eligible rate schedule they are served on, rate continuity helps ensure that the load and cost characteristics of the new customers are similar to the load and cost characteristics that the rates were designed to recover. Extensive switching by customers from one rate schedule to another can nullify the effectiveness of a specific rate schedule, even if the rate structure is satisfactory.

Checking for rate continuity requires an examination of the rate levels at the design "cross-over point" as well as the structure of the rates on each schedule.

Q. Does this conclude your direct testimony?

A. Yes, it does.

Participation in MOPSC Cases
Witness: Janice Pyatte

Company	Case Number
The Empire District Electric Company	ER-2004-0570
Aquila, Inc. d/b/a Aquila Networks-MPS and L&P	ER-2004-0034 & HR-2004-0024
The Empire District Electric Company	ER-2002-424
Union Electric Company	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 The Empire District Electric Co.	EM-2000-369
UtiliCorp United and St. Joseph Light & Power Co.	EM-2000-292
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
The Empire District Electric Company	ER-97-81
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
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
Laclede Gas Company	GR-84-161
Union Electric Company	ER-84-168
Arkansas Power & Light Company	ER-83-206
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

Schedule 1