

Exhibit No.:  
Issues: Class Cost of  
Service and  
Rate Design  
Witness: James C. Watkins  
Sponsoring Party: MoPSC 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**

**JAMES C. WATKINS**

**AQUILA, INC.**

**CASE NO. EO-2002-0384**

Jefferson City, Missouri  
September, 2005

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

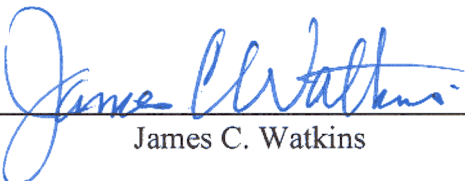
In the Matter of an Examination of the   )  
Class Cost of Service and Rate Design in   )  
the Missouri Jurisdictional Electric   )  
Service Operations of Aquila, Inc.,   )  
formerly known as UtiliCorp United, Inc.   )

Case No. EO-2002-0384

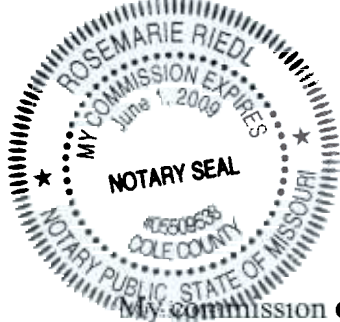
**AFFIDAVIT OF JAMES C. WATKINS**

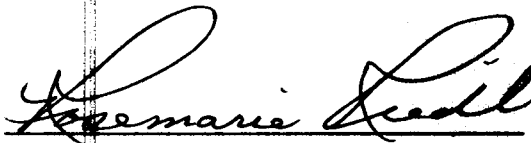
**STATE OF MISSOURI    )**  
**) ss**  
**COUNTY OF COLE**

James C. Watkins, 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 6 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.

  
James C. Watkins

Subscribed and sworn to before me this 16<sup>th</sup> day of September, 2005.



  
Notary Public

My commission expires June 1, 2009

1  
2  
3  
4  
5

**TABLE OF CONTENTS**

Overview..... 2

Class Cost of Service ..... 3

Recommendations..... 5

1

2

3

4

5

6

7

8

10

11

12

13

14

15

16

17

18

19

20

21

Direct Testimony of  
James C. Watkins

1 Q. What has been your role for the Staff in this case?

2 A. I am the case coordinator. In that role I have day-to-day overseen and  
3 directed the activities of the Staff assigned to work on the matters in this case. I am also  
4 responsible for conveying to the Commission the Staff's overall recommendations in this  
5 case.

6 Q. What is the purpose of your direct testimony?

7 A. I provide a brief overview of the Staff's examination of Aquila's class cost  
8 of service and rate design for its two Missouri service areas, Aquila Networks-MPS and  
9 Aquila Networks-L&P, which have differing customer rates. I also recommend  
10 appropriate shifts in customer class revenue responsibility based on the results of the  
11 Staff's class cost-of-service study. The Staff is not recommending any changes to  
12 Aquila's rate structures at this time.

13 **Overview**

14 Q. Please provide an overview of the Staff's examination of Aquila's class  
15 cost of service and rate design.

16 A. The Staff examined both how well Aquila's current rates are recovering  
17 the costs caused by each customer class and whether Aquila's rates are structured to  
18 recover the appropriate costs from each customer within each customer class. Staff  
19 witness James Busch performed the class cost-of-service study to determine the former,  
20 and Staff witness Janice Pyatte examined Aquila's rate structures to determine the latter.  
21 I calculated the time-of-use allocation factors used in the class cost-of-service study.

1           The Staff has determined that shifts in class revenue responsibility are required to  
2 align cost recovery with cost causation. The general service classes are paying too much  
3 for their electric service while the Large Power and Residential classes are paying too  
4 little.

5           The rate structures of Aquila Networks-MPS and Aquila Networks-L&P, while  
6 different, are both designed to appropriately account for cost differences between  
7 customers within the same customer class; however, there are instances where different  
8 rate schedules were implemented for certain groups of customers within the same  
9 customer class because of customer impacts, not because of cost differences. In those  
10 instances, the rate schedules should be combined.

11           The Staff anticipates that any rate changes the Commission approves in this case  
12 will be implemented in conjunction with any rate changes it approves in Aquila's current  
13 general electric rate increase case (Case No. ER-2005-0436) in which Aquila has  
14 requested a 20.3% increase in revenues in its Aquila Networks-MPS service area and a  
15 9.6% increase in revenues in its Aquila Networks-L&P service area. The Commission  
16 should consider the overall impact on individual customers in each service area from  
17 both rate changes.

18 **Class Cost of Service**

19           Q.     Did the Staff perform a customer class cost-of-service study in this case?

20           A.     Yes. Staff witness James Busch presents it in his direct testimony.

21           Q.     What is the significance of the Staff's cost-of-service study?

1           A.     The Staff's class cost-of-service study is a mathematically-based method  
2 of assigning costs to customer classes using the best available data and methods. It can  
3 be directly compared to other such studies in terms of its quality of analysis; however,  
4 when setting rates, its underlying assumptions should be critically considered. A cost-of-  
5 service study is not "the answer," it is just one important piece of information to consider  
6 when setting rates.

7           For the most part, an electric utility's costs are what economists refer to as "joint  
8 costs." These costs are incurred to serve a group of customers rather than each individual  
9 customer separately. The transmission system is built to serve all customers and is  
10 available to every customer, unlike a meter that measures the usage of only one customer.  
11 A cost-of-service study uses a "reasonable" method of allocating joint costs among  
12 customer classes based on usage characteristics. The underlying assumption is that these  
13 costs are generally related to those usage characteristics, not that they are actually caused  
14 directly by the usage of any one customer.

15           Back in the days when I taught economics, the example used to help students  
16 understand the concept of joint costs was "wool versus mutton," *i.e.*, it costs a certain  
17 amount to raise a sheep, the sheep provides wool and mutton, how much of the cost is  
18 related to producing wool and how much to producing mutton? Let me give you another  
19 example. Consider the cost of the family home. How much of the cost should be  
20 allocated to each family member? If it's a family of four, should one-fourth of the cost  
21 be allocated to each family member? How much of the cost should be allocated to the  
22 new baby, who wasn't even born when the house was purchased? How much to the

1 teenager, who is hardly ever at home? Would your answer change, if you assume that  
2 each family member will have to pay for the share of the costs that is allocated to him or  
3 her?

4 The point is that there is no single “right” answer. There are only answers that  
5 are reasonable and answers that are not. The Staff believes that it has used reasonable  
6 methods for allocating costs in its study, in particular its “time-of-use” method for  
7 allocating generation and transmission costs.

8 Q. Please describe the concept behind the time-of-use method the Staff used.

9 A. Actually, there are two concepts. The first is “capacity utilization.” This  
10 concept is that fixed capacity costs should be spread equally across the time period when  
11 that capacity is being used. The second concept is that if usage costs vary by time period,  
12 those costs should be assigned to specific time periods. Time-of-use allocators spread the  
13 costs assigned to each time period to customer classes based on the usage characteristics  
14 of the aggregate of customers in each class during that time period. In this case the time  
15 periods used by the Staff were hours. Based on its load research data, Aquila provided  
16 the parties with hourly class load data. The Staff assigned production and transmission  
17 costs to each hour, then allocated the cost in each hour to each class based on each class’s  
18 share of the total load in that hour.

### 19 **Recommendations**

20 Q. What does the Staff recommend to the Commission in this case?

21 A. The Staff recommends that the Commission:



1           1)     Adopt the Staff's class cost-of-service study as the basis for determining  
2 class revenue responsibility;

3           2)     Consider shifts in class revenue responsibility together with any overall  
4 increase in rates it approves in Case No. ER-2005-0436 in determining the impacts on  
5 individual customers both will cause;

6           3)     In both Aquila Networks—L&P and Aquila Networks—MPS, increase the  
7 revenue responsibility of each customer class that should have its rates increased on a  
8 revenue neutral basis by as much as the percentage increase required to increase the  
9 revenues of the Large Power Service customer class to match its cost of service, and  
10 reduce the revenue responsibility of the Small General Service (SGS) and Large General  
11 Service (LGS) customer classes by the percentage determined by dividing the resulting  
12 increase in revenues by the combined revenues of the SGS and LGS classes.

13           Q.     Do you have any further testimony at this time?

14           A.     No.

# CASE LIST

1. The Empire District Electric Company	Case No. ER-83-42
2. Kansas City Power & Light Company	Case No. ER-83-49
3. Union Electric Company	Case No. ER-83-163
4. Arkansas Power & Light Company	Case No. ER-83-206
5. The Empire District Electric Company	Case No. ER-83-364
6. Kansas City Power & Light Company	Case No. EO-84-4
7. Union Electric Company	Case No. EO-85-17
8. Arkansas Power & Light Company	Case No. ER-85-20
9. Arkansas Power & Light Company	Case No. EO-85-146
10. Union Electric Company	Case No. ER-85-160
11. Kansas City Power & Light Company	Case Nos. ER-85-128 & EO-85-185
12. Arkansas Power & Light Company	Case Nos. ER-85-265 & ER-86-4
13. Union Electric Company	Case Nos. EC-87-114 & EC-87-115
14. St. Joseph Light & Power Company	Case No. HR-88-116
15. Union Electric Company	Case No. EO-87-175
16. Missouri Public Service	Case No. ER-90-101
17. The Empire District Electric Company	Case No. ER-90-138
18. Kansas City Power & Light Company	Case No. EM-91-16
19. St. Joseph Light & Power Company	Case No. EO-88-158
20. The Empire District Electric Company	Case No. EO-91-74
21. Missouri Public Service	Case No. EO-91-245
22. Missouri Public Service	Case No. EO-93-37
23. St. Joseph Light & Power Company	Case No. ER-93-41
24. St. Joseph Light & Power Company	Case No. EO-93-351
25. St. Joseph Light & Power Company	Case No. ER-94-163
26. The Empire District Electric Company	Case No. ER-94-117
27. Citizens' Electric Corporation	Case No. ER-97-286
28. The Empire District Electric Company	Case No. ER-97-81
29. The Empire District Electric Company	Case No. ER-97-491
30. Missouri Public Service	Case Nos. ER-97-394 & ET-98-103
31. St. Joseph Light & Power Company	Case Nos. EC-98-573 & ER-99-247
32. Citizens' Electric Corporation	Case No. ET-99-113
33. Union Electric Company	Case No. EO-96-15
34. Union Electric Company	Case No. EO-2000-580
35. The Empire District Electric Company	Case No. ER-2001-299
36. Missouri Public Service	Case No. ER-2001-672 & EC-2002-265
37. Union Electric Company	Case No. EC-2002-1
38. Citizens' Electric Corporation	Case No. ER-2002-217
39. The Empire District Electric Company	Case No. ER-2001-1074 (ER-2001-425)
40. The Empire District Electric Company	Case No. ER-2002-424
41. Aquila, Inc. (MPS & L&P)	Case Nos. ER-2004-0034 & HR-2004-0024
42. The Empire District Electric Company	Case No. ER-2004-0570
43. Union Electric Company	Case No. EA-2005-0180