

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

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My commission expires June 1, 2009

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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.

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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?

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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

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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:

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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