

Exhibit No.:
Issues: Cost of Service and
Interim Incentive
Energy Charge
Witness: Donald Johnstone
Type of Exhibit: Direct Testimony
Sponsoring Party: AGP
Case Number: HR-2005-0450
Date Testimony Prepared: October 14, 2005

Aquila, Inc. d/b/a
Aquila Networks - L & P

Case No. HR-2005-0450

Prepared Direct Testimony

Donald Johnstone

On behalf of

AG PROCESSING INC, A COOPERATIVE (AGP)

October 2005



BEFORE THE
PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the matter of Aquila, Inc. d/b/a)
Aquila Networks- L&P, for authority)
To file tariffs increasing steam) Case No. HR-2005-0450
Rates for the service provided to)
Customers in the Aquila Networks-)
L&P area.)

Affidavit of Donald Johnstone

State of Missouri)
County of Miller) ss

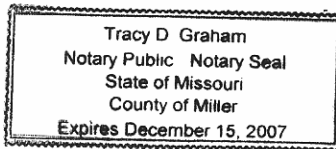
Donald Johnstone, of lawful age, on his oath states: that he has reviewed the attached written testimony in question and answer form, all to be presented in the above case, that the answers in the attached written testimony were given by him; that he has knowledge of the matters set forth in such answers; that such matters are true to the best of his knowledge, information and belief.

Donald Johnstone
Donald Johnstone

Subscribed and sworn before me this 13th day of October, 2005
~~February, 2004~~

Tracy D. Graham
Notary Public

[SEAL]



My Commission expires: _____

Before the
Missouri Public Service Commission

Aquila, Inc. d/b/a
Aquila Networks - L & P

Case No. HR-2005-0450

Prepared Direct Testimony of Donald Johnstone

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Before the
Missouri Public Service Commission

Aquila, Inc. d/b/a
Aquila Networks - L & P

Case No. HR-2005-0450

Prepared Direct Testimony of Donald Johnstone

1 Q PLEASE STATE YOUR NAME AND ADDRESS.

2 A Donald Johnstone. My address is 384 Black Hawk Drive, Lake Ozark, Missouri,
3 65049.

4 Q BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

5 A I am employed as President of Competitive Energy Dynamics, L. L. C.

6 Q PLEASE DESCRIBE YOUR QUALIFICATIONS AND EXPERIENCE.

7 A My qualifications and experience are set forth in Appendix A.

8 Q WHAT ARE THE PURPOSES OF YOUR TESTIMONY?

9 A I have been retained on behalf of AG PROCESSING INC, A COOPERATIVE
10 (“AGP”). My assignment is to review the costs associated with retail steam

1 service in general and in particular for AGP. I also address principles related to
2 the possible establishment of an Interim Incentive Energy Charge.

3 **DESCRIPTION OF STEAM SERVICE**

4 Q PLEASE DESCRIBE THE RETAIL STEAM SERVICE PROVIDED BY AQUILA.

5 A The retail steam business was acquired by Aquila, Inc. d/b/a/ Aquila Networks-
6 L&P (“L&P” or “Company”) as a part of its purchase of St. Joseph Light and
7 Power. It has consisted of firm steam service to five industrial customers
8 located in a physical proximity to L&P’s Lake Road Plant in St. Joseph,
9 Missouri. Of the five customers, AGP is the largest. All customers are required
10 to pay both a “Reserved Capacity Charge” and an “Energy Charge” per million
11 BTU delivered. The steam business is growing due to increased usage from
12 present customers and also with the addition of Triumph, a new customer that
13 will be the second largest after AGP.

14 For the test year, including known and measurable changes as filed by
15 the Company, the present rates are estimated to provide \$7 million in annual
16 operating revenue for L&P.¹ The steam service peaks in the winter, but
17 operates at a consistently high level throughout the year. In recent years much
18 of the steam has been produced by the coal fired boiler at the Lake Road Plant.
19 Gas fired boilers produce the remainder of the steam, albeit at a much higher

¹ Any reference to present rates, revenues, or the cost of service claimed by Aquila should not be construed as support for any particular cost item or the increase requested by Aquila.

1 cost. While the adjusted test year cost of fuel (as submitted in the Company
2 filing) is \$1.36 per million BTU for coal, the cost of gas is \$6.73 per million
3 BTU, about five times higher. Aquila has explained that these fuel prices were,
4 at the time it applied for this rate increase, expected to be representative of
5 prices the first year the new rates are in effect. These prices will be effected
6 by the Commission ordered true-up through October 31. The true-up will
7 address "all major changes to revenue, expenses, rate base, and capital
8 structure occurring through the true-up date."¹ Without prejudging the
9 particular costs for the L&P steam business, current market prices for gas have
10 been much higher in recent weeks. Given current conditions in the natural gas
11 market, this means that steam produced from natural gas could at times be
12 nearly eight times more expensive than steam produced from coal.

13 As the steam business grows, the additional energy will be sourced in
14 natural gas, thus creating additional extreme price pressures if the current
15 market prices persist. The recent gas prices exacerbate the price pressures
16 that were already significant.

17 **Q PLEASE DESCRIBE THE PROXIMITY OF THE AGP PLANT TO THE LAKE ROAD**
18 **PLANT.**

19 **A** AGP is without question the customer closest to the Lake Road Plant as the AGP
20 facility is immediately adjacent to it. The steam is literally delivered across

¹ Missouri Public Service Commission Case No. HR-2005-0450 Order Concerning Test Year And True-Up,
And Adopting Procedural Schedule, Issue Date: July 21, 2005, page 3.

1 the fence of the Lake Road Plant property. Consequently the distribution
2 mains needed to take the steam down the road to the other customers are
3 simply not needed and are of no use in providing service to AGP. Furthermore,
4 the energy losses that would otherwise be inherent in deliveries through the
5 distribution mains are avoided. I will discuss the implications further in the
6 rate design testimony that is scheduled to be submitted on October 28.

7 **Q PLEASE DESCRIBE THE LAKE ROAD PLANT OF L&P.**

8 A The steam portion of the plant produces steam for retail steam service and
9 steam is also used to generate electricity for retail electric customers. The net
10 continuous electrical capability of the steam portion of the plant is 151.8
11 megawatts (“MW”), as reported in the Aquila FERC Form 1 report for the year
12 ended December 31, 2004. In addition, the plant site is home to a combustion
13 turbine electric generator.

14 **Q YOU MENTIONED ABOVE THAT STEAM IS PROVIDED AS A FIRM SERVICE. HAS**
15 **THE SERVICE TO AGP BEEN RELIABLE?**

16 A Not as reliable as AGP would like. There have been interruptions in the steam
17 service and furthermore, any interruption in the steam service can lead to an
18 even longer interruption in AGP production. This occurs because it often
19 necessarily takes time to restart AGP processes when the steam interruption is
20 of a magnitude that leads to an interruption in the AGP processes. Also, any

1 interruptions in the steam service make it difficult for AGP to maintain the
2 consistently high quality product that is needed.

3 **COST OF SERVICE**

4 Q WHAT ARE THE COSTS OF THE LAKE ROAD PLANT THAT ARE ATTRIBUTABLE
5 TO FIRM RETAIL STEAM SERVICE?

6 A There several categories of costs. First, coal and natural gas fuel costs are the
7 primary variable costs. The fuel costs are incurred to fire the boilers that
8 make the steam. For the purposes of this case Aquila has developed an
9 estimate of the fuel requirements based on a simulation of the joint operation
10 of the Lake Road Plant for steam service and electric service. Most the time
11 the coal fired No. 5 boiler is operated in a base load mode for retail steam
12 service and that is reflected in the simulation.

13 A second category of costs are the fixed costs of the facilities that are
14 used solely to provide steam service. An example is the distribution facilities
15 typically used to send the steam to five of the six customers. The costs of
16 these facilities are appropriately recovered from the steam service customers
17 that use them.

18 A third category of costs are the fixed costs of Lake Road Plant facilities
19 used jointly for steam service and electric service. These costs are shared
20 between electric and steam customers.

1 A fourth category of costs are the operating and maintenance costs
2 associated with the facilities. Generally the responsibility for these costs
3 should follow the responsibility for capacity costs of the facilities and are
4 therefore shared between electric and steam customers.

5 There are also costs associated with general plant and with
6 administrative and general costs. These include both local costs and Aquila
7 corporate costs that are allocated, presumably based on a measure of cost
8 causation.

9 **Q GIVEN THE CIRCUMSTANCES OF AQUILA, L&P, RETAIL ELECTRIC SERVICE,**
10 **RETAIL GAS SERVICE, AND RETAIL STEAM SERVICE, HOW IS THE COST OF**
11 **STEAM SERVICE DETERMINED?**

12 **A** First, I note that while separate applications for rate increases have been filed
13 for the electric and steam services, there is no separate company that provides
14 the steam service. Instead, it is Aquila, Inc. d/b/a Aquila Networks-L&P. As a
15 practical matter this means that many of the costs are parsed out pieces of
16 Aquila corporate costs - to L&P and to the steam service.

17 Aquila witnesses refer to methods for estimating the cost of steam
18 service based on Aquila corporate cost allocation procedures and jurisdictional
19 cost allocation methods that apparently have been explained in past cases. I
20 find no clear explanation in this case of the rationale for all of the various costs
21 attributed to the steam service.

1 Q WHAT IS THE ANNUAL REVENUE FROM STEAM SERVICE AS COMPARED TO
2 ELECTRIC SERVICE?

3 A Test year present operating revenue is \$7 million for steam service and \$112
4 million for the Aquila Networks - L&P electric service. Thus, the steam service
5 operating revenue amounts to six percent of the electric service operating
6 revenue.

7 Q HOW SHOULD THE COST OF STEAM SERVICE BE DETERMINED?

8 A At one level the answer is a simple one. The cost of steam service is simply the
9 sum of the direct costs and any properly allocated costs incurred to provide the
10 service. As a practical matter, the interrelationships of the electric and steam
11 services, and also the interrelationships of the many Aquila business units,
12 make this a challenging task.

13 More specifically, I have several recommendations. First, Aquila must
14 bear the burden of showing that the costs it claims are in fact fair and
15 reasonable for the steam service. I do not believe a mere reference to
16 methods not submitted and explained in this case is necessarily adequate.

17 Second, the Commission should consider as a relevant factor the impact
18 of higher steam costs on the local economy. AGP alone represents 162 jobs.
19 Also, the facts that existing customers are expanding and that a large new
20 customer is being added are a positive part of the local economic impact, even
21 though price pressures are created for the steam service.

1 Third, the Commission should consider the fair and reasonable costs
2 directly associated with steam service as a relevant factor in its deliberations.
3 In other words, those costs not directly associated with steam service depend
4 on judgments as to whether or not, or to what extent, the costs are *apropos*
5 for collection from steam customers.

6 Finally, it will be necessary to establish just and reasonable rates based
7 on a consideration of all relevant factors.

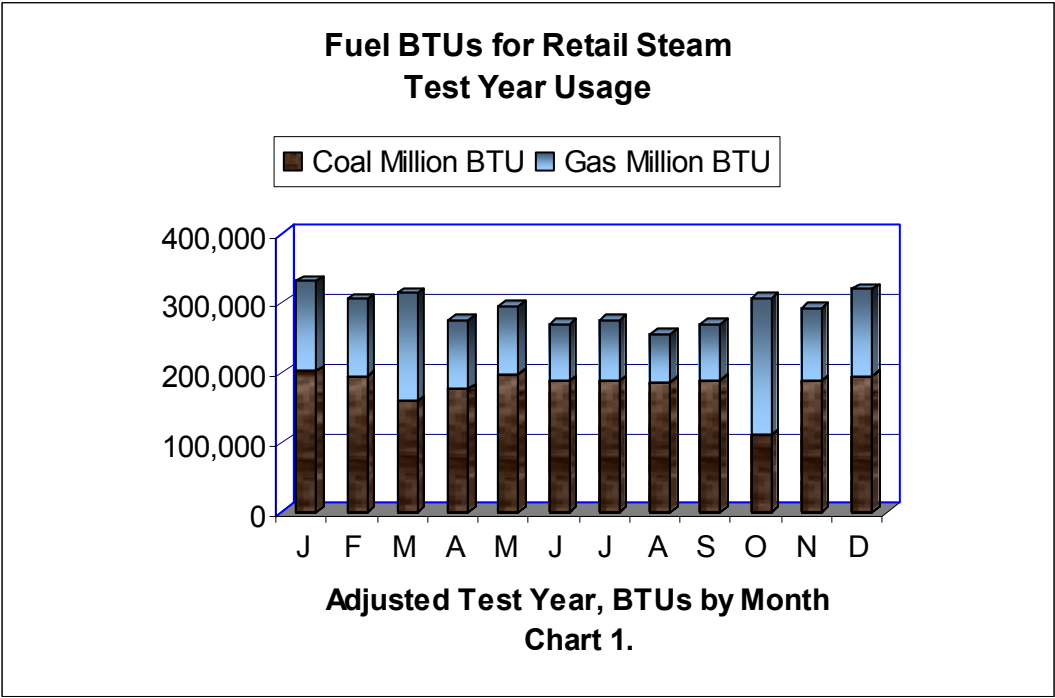
8 **FUEL COSTS**

9 **Q ARE THE COSTS OF FUEL A PARTICULAR CONCERN?**

10 **A Yes. The high prices and volatility in the natural gas costs and markets are a**
11 **concern. I understand that Aquila has engaged in hedging activities, although**
12 **there is no explanation of those activities in Aquila's direct testimony.**

13 **Q WHAT IS THE PROPORTION OF THE COAL AND GAS THAT IS USED TO PROVIDE**
14 **STEAM SERVICE?**

15 **A Most of the energy is derived from coal, but the larger portion of the cost is in**
16 **the natural gas. Taking the energy content first, Chart 1 illustrates month by**
17 **month the amounts of energy (in million BTU) derived from each fuel. For the**
18 **twelve months of the test year as adjusted by L&P, 62% of the energy came**
19 **from coal and the remaining 38% came from natural gas.**



1

2 Q WHAT IS THE FUEL COST ASSOCIATED WITH THE ADJUSTED TEST YEAR COAL

3 AND GAS USAGE?

4 A Aquila states an intent to recover the cost of fuel for the first year that new

5 rates will be in effect. On this basis, the coal cost is \$1.36 per million BTU

6 according to Aquila’s workpapers. The gas cost in the Aquila filing is \$6.73 per

7 million BTU based on a 12 month strip for 2006. However, gas costs have

8 changed markedly since the case was filed. Solely for the purpose of

9 illustration I will use the October 11 closing NYMEX¹ gas futures prices for the

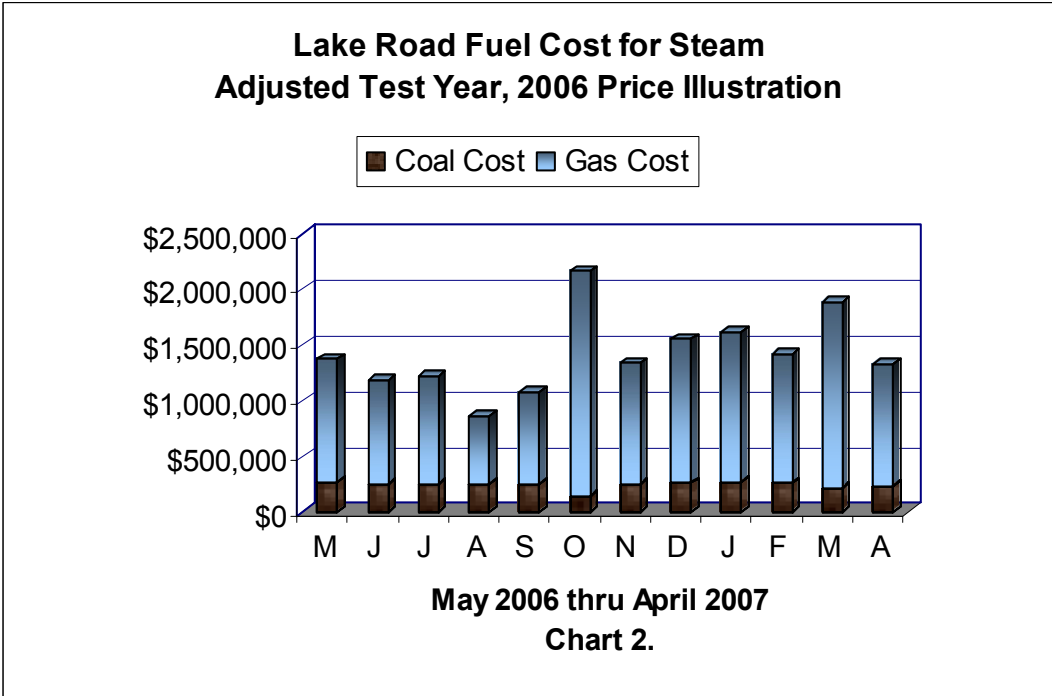
10 months of May 2006 thru April 2007 to illustrate the potential impact of gas

11 costs relative to coal costs. The average of the 12 monthly prices is \$10.55 per

¹ The New York Mercantile Exchange, Inc.

1 million BTU for natural gas.

2 With this wide spread in prices, natural gas costs would comprise roughly
3 82% of fuel costs, even though gas represents only 38% of the BTUs.



4

5 Q DOES AQUILA HEDGE ITS COST OF NATURAL GAS?

6 A Aquila engages in hedging activities. However, what is not revealed in its
7 direct testimony is the expected actual gas costs including the effect of related
8 financial instruments.

9 Q WHAT ARE THE INTERESTS OF AGP IN REGARD TO FUEL COSTS FOR STEAM?

10 A First, AGP, like any rational customer, has an interest in receiving service at
11 the lowest cost consistent with reliable service, that is, service that is in all

1 respects safe and adequate. In addition AGP has an interest in rate stability. I
2 support and recommend the need for a responsible approach to the
3 management of the volatility of the natural gas market so as to mitigate swings
4 in steam prices. Of course, with only a base rate mechanism, there will not be
5 swings apart from changes authorized in a base rate case.

6 AGP recognizes a likely problem for both L&P and steam customers if the
7 fuel cost for natural gas is set and fixed as a part of the base rates. On one
8 hand there is a risk that too high a price will be “locked in” which will result in
9 a possible detriment to the ratepayers and potential excessive profits to the
10 utility. On the other hand, fixing too low a fuel cost will simply result in
11 another rate filing, possibly in a very short time. Inevitably, a fixed base rate
12 will be either too high or too low as compared to actual fuel costs.
13 Consequently, I will advance some principles that may lead to a reasonable
14 solution.

15 **INTERIM INCENTIVE ENERGY CHARGE**

16 Q WHAT ARE THE CONSIDERATIONS THAT GO INTO A RECOMMENDATION FOR
17 THE RECOVERY OF FUEL COSTS WITH A MECHANISM OTHER THAN THE
18 TRADITIONAL APPLICATION OF BASE RATES?

19 A I am not a lawyer and do not intend to offer a legal opinion. I am,
20 nevertheless, aware of more than one recent instance of Commission approval

1 of the use of a mechanism referred to as an “Interim Energy Charge” (IEC). I
2 am also aware of a recently enacted provision of the Missouri statues [Section
3 386.266 RSMo.] that explicitly identifies some considerations pertinent to an
4 “Interim Energy Charge” (“IEC”) and a “Periodic Rate Adjustment” (“PRA”) for
5 electric utilities. The considerations include:

- 6 • Only prudently incurred fuel costs are eligible;
- 7 • Incentives to improve efficiency are encouraged;
- 8 • There is to be a true-up of revenues and allowed costs;
- 9 • There is to be a base rate case with new rates effective four years
10 hence;
- 11 • There is to be sufficient opportunity for a fair ROE; and
- 12 • All relevant factors are to be considered.

13 **Q ARE THE SAME CONSIDERATIONS APPROPRIATE FOR THIS PROCEEDING IF**
14 **THERE IS A RATE ADJUSTMENT MECHANISM FOR STEAM FUEL COSTS?**

15 **A** Yes. In large part these are common sense provisions. For example, it is well
16 established that any costs that are not prudently incurred should not be
17 recovered from ratepayers. Likewise, there should be true-up and audit
18 provisions to ensure this result. Any revenues collected due to costs that are
19 later found to violate the mechanism (due to the true-up provision or the
20 prudence requirement) would need to be refunded.

21 Another important consideration is the encouragement of incentive

1 mechanisms. To the extent that all fuel costs are passed thru on a more or less
2 automatic basis - with no impact on utility earnings -- the utility's incentive to
3 hold fuel costs to a minimum is greatly reduced. In contrast, traditional base
4 rate regulation has provided an important incentive to minimize actual costs.
5 In a rate case the rates are set at a level designed to provide an opportunity
6 for the utility to earn a fair return. But once rates are set, the actual return is
7 at risk from one rate case to the next. This means that the actual return
8 (utility profits) will always be relatively higher to the extent that the utility
9 minimizes costs between cases. Thus the utility has an incentive to minimize
10 its costs through efficient operations and, to the extent it does so, it is
11 rewarded by increased earnings. In my opinion this vulnerability of the utility's
12 profits is desirable because it creates a powerful incentive to minimize costs.
13 Unfortunately, this incentive does not always result in lower rates for the
14 ratepayers. Thus it can be one-sided. Overall the benefits are important and
15 the incentive should be preserved to the extent possible in the context of any
16 fuel cost adjustment mechanism.

17 **Q DO YOU HAVE COMMENTS ON THE NEED TO CONSIDER ALL RELEVANT**
18 **FACTORS AND THE NEED FOR A RATE CASE EVERY FOUR YEARS?**

19 **A** Yes. First, as to the rate case requirement, it is easy to see the logic. From a
20 consumer perspective, when a component as large as fuel is passed thru to
21 consumers with an adjustment mechanism, the rate case will help to ensure

1 that the base rates do not become excessive and remain so. The requirement
2 is symmetrical in that rates can either go up or go down as a result of the four
3 year rate case provision.

4 The remaining issue is the requirement for the Commission to consider
5 all relevant factors. This is always important when the revenue requirement is
6 being determined in a rate case. The extension of the requirement to the
7 matter of the adjustment mechanism is also appropriate for at least two
8 reasons. *First*, the fuel costs are a large portion of total costs. *Second*, the
9 mechanism can remain in effect as an adjustment to rates for up to four years.
10 Therefore, the mechanism should receive at least the same level of scrutiny as
11 base rates.

12 **Q WHAT ARE SOME OF THE RELEVANT FACTORS TO BE CONSIDERED?**

13 As a part of “all relevant factors” there must, among all other relevant
14 considerations, be a consideration of relevant customer perspectives. In the
15 context of any adjustment mechanism deriving from the instant proceeding the
16 relevant customer perspectives include the need for:

- 17 • An affirmative utility obligation to minimize fuel costs¹;
- 18 • An affirmative utility obligation to engage in fuel cost and price
19 stabilization mechanisms; and
- 20 • A substantial percentage share of the subject fuel cost should

¹ The minimization of fuel costs must be in the context of L&P’s responsibility to provide safe and adequate service, and all that is reasonably inferred as a part of that responsibility.

1 continue to be recovered in base rates, without periodic
2 adjustments to capture variations.

3 **Q WHY SHOULD THERE BE AN AFFIRMATIVE UTILITY OBLIGATION TO MINIMIZE**
4 **FUEL COSTS IF THERE IS AN ADJUSTMENT MECHANISM FOR FUEL COSTS?**

5 **A** The answer is found in an understanding of the incentives that exist and
6 incentives that are created or removed. The incentives, taken together, need
7 to be sufficient to align utility interests with ratepayer interests.

8 The purpose of establishing an affirmative obligation to minimize fuel
9 costs is to replace, to the extent possible, the financial incentive to minimize
10 costs that is reduced or eliminated by the change from base rate recovery of
11 fuel costs to an adjustable rate mechanism. A regulatory obligation on the
12 utility to minimize costs would be a movement to balance the interest of
13 customers in low cost service against the need to reflect cost changes on a
14 more timely basis.

15 In this regard, it is very important to distinguish the incentives under an
16 adjustment mechanism from the incentives under base rates. If the recovery
17 of variations in fuel costs is moved from base rates to an adjustable rate, the
18 financial incentives that would be inherent in base rate regulation are
19 eliminated. Earnings would no longer be enhanced or diminished due to
20 changes in the fuel costs. Consequently, without earnings at stake directly,
21 the only financial incentive left to motivate good performance is the threat of

1 a fuel cost disallowance in the event that the utility cannot prove prudence.
2 While the prudence review is important, in my opinion it is a weak substitute
3 for the financial incentive inherent in base rates. An affirmative obligation to
4 minimize fuel costs would at least be a step in the direction of maintaining a
5 reasonable incentive for the utility to minimize costs. This is accomplished by
6 raising the bar for expected performance and by leveling the field somewhat
7 for those that might be challenging the claimed fuel costs.

8 Another consideration is the fact that the typical structure of an
9 adjustment mechanism makes it likely that fuel costs will be charged to
10 customers before there is an effective review for prudence. An after-the-fact
11 review of costs already charged to customers provides only a diminished
12 incentive to lower costs. Instead, it tends to motivate what could be
13 characterized as “gaming” of the regulatory system. Gaming will not produce
14 low rates but, rather, excessive documentation and other activities intended to
15 shield utility decisions from an adverse prudence review. Consequently there
16 is a larger more difficult burden on the reviewers (commission staff and other
17 parties) to identify any imprudence as a means to incent and ensure low costs
18 for consumers. As a practical matter, it is difficult to look backwards to
19 establish what could have been done differently or what the result would have
20 been under prudent fuel procurement management.

21 In summary, without earnings directly at stake, the threat of a
22 retrospective fuel cost disallowance becomes the prime motivator or incentive

1 for the utility to minimize fuel costs. This misaligns ratepayer and utility
2 interests. An affirmative prospective obligation to minimize costs is needed to
3 help restore a beneficial alignment of consumer and utility interests.

4 **Q WHY SHOULD THERE BE AN AFFIRMATIVE UTILITY OBLIGATION TO ENGAGE IN**
5 **FUEL COST AND PRICE STABILIZATION MECHANISMS.**

6 A Simply put, customers prefer price stability over price
7 fluctuations. Base rates tend to provide that stability. An adjustment
8 mechanism swings the pendulum in the opposite direction with respect to fuel
9 costs. And again there is an incentive problem that arises if the utility is
10 simply allowed to pass thru undampened price volatility. Absent a consumer
11 protection measure, the full volatility associated with fuel costs would likely be
12 fully shifted from the utility to customers, even though there is an ability to
13 dampen the price volatility. Therefore, it is logical to require fuel cost and
14 price stabilization mechanisms where fuel cost volatility is a concern. The
15 possibilities range from a simple percentage cap on the size of any increase, to
16 hedging strategies, to an adjustment mechanism that by design does not pass
17 through all of the changes in fuel costs. What is important is to strive to align
18 the utility interests with those of the consumer. An appropriate rate design for
19 the adjustment mechanism will inherently maintain an incentive for the utility
20 to stabilize and minimize costs.

1 Q YOUR LAST POINT ADDRESSES A NEED TO CONTINUE TO HAVE A
2 SUBSTANTIAL PERCENTAGE OF THE FUEL COSTS COLLECTED IN BASE RATES,
3 WITHOUT PERIODIC ADJUSTMENTS. WHY IS THIS SO?

4 A To the extent that a meaningful percentage of fuel costs remains in base rates
5 and not subject to adjustment between rate cases, a meaningful amount of the
6 traditional base rate incentive to minimize costs will be maintained. Also
7 stability in the costs will be encouraged as that would stabilize earnings for the
8 utility while at the same time stabilizing retail rates. Consequently, utility
9 interests in low and stable costs for the purpose of maximizing earnings would
10 be better aligned with the consumer interests in low and stable rates. Thus, by
11 design, the incentives to minimize and stabilize fuel costs would be inherent in
12 the rates themselves and there would be a reduced need to rely on prudence
13 reviews and additional obligations created by regulation to incent utility
14 behavior. A final observation is that the risk of flawed purchasing practices or
15 inefficient operations would substantially remain on the party with direct
16 control over those actions - the utility. This appropriately enforces
17 accountability with financial consequences.

18 Q ARE YOU AT THIS TIME RECOMMENDING A PARTICULAR INTERIM INCENTIVE
19 ENERGY CHARGE MECHANISM?

20 A No, I am not. However, an interim incentive rate adjustment mechanism that
21 meets the recommendations outlined hereinabove would be seriously reviewed

1 by AGP. The fuel cost levels that would be included in base rates and in an
2 interim incentive energy charge mechanism must be considerations along with
3 the structure. However, since the true-up period for this case ends October
4 31, roughly two weeks from now, it is too soon for anyone to know what fuel
5 costs will ultimately be a part of the adjusted test year. Nevertheless, AGP
6 recognizes fuel cost recovery as a serious issue and for that reason is stating at
7 this time its position in regard to the principles that it supports.

8 Q DOES THIS CONCLUDE YOUR TESTIMONY?

9 A Yes it does.

Appendix A

Qualifications of Donald E. Johnstone

1 Q PLEASE STATE YOUR NAME AND ADDRESS.

2 A Donald E. Johnstone. My address is 384 Black Hawk Drive, Lake Ozark, MO
3 65049.

4 Q PLEASE STATE YOUR OCCUPATION.

5 A I am President of Competitive Energy Dynamics, L. L. C. and a consultant in the
6 field of public utility regulation.

7 Q PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND EXPERIENCE.

8 A In 1968, I received a Bachelor of Science Degree in Electrical Engineering from
9 the University of Missouri at Rolla. After graduation, I worked in the customer
10 engineering division of a computer manufacturer. From 1969 to 1973, I was an
11 officer in the Air Force, where most of my work was related to the Aircraft
12 Structural Integrity Program in the areas of data processing, data base design
13 and economic cost analysis. Also in 1973, I received a Master of Business
14 Administration Degree from Oklahoma City University.

15 From 1973 through 1981, I was employed by a large Midwestern utility
16 and worked in the Power Operations and Corporate Planning Functions. While
17 in the Power Operations Function, I had assignments relating to the peak
18 demand and net output forecasts and load behavior studies which included such

1 factors as weather, conservation and seasonality. I also analyzed the cost of
2 replacement energy associated with forced outages of generation facilities. In
3 the Corporate Planning Function, my assignments included developmental work
4 on a generation expansion planning program and work on the peak demand and
5 sales forecasts. From 1977 through 1981, I was Supervisor of the Load
6 Forecasting Group where my responsibilities included the Company's sales and
7 peak demand forecasts and the weather normalization of sales.

8 In 1981, I began consulting, and in 2000, I created the firm Competitive
9 Energy Dynamics, L.L.C. As a part of my twenty-four years of consulting
10 practice, I have participated in the analysis of various electric, gas, water, and
11 sewer utility matters, including the analysis and preparation of cost-of-service
12 studies and rate analyses. In addition to general rate cases, I have participated
13 in electric fuel and gas cost reviews and planning proceedings, policy
14 proceedings, market price surveys, generation capacity evaluations, and
15 assorted matters related to the restructuring of the electric and gas industries.
16 I have also assisted companies in the negotiation of power contracts
17 representing over \$1 billion of electricity.

18 I have testified before the state regulatory commissions of Delaware,
19 Hawaii, Illinois, Iowa, Kansas, Massachusetts, Missouri, Montana, New
20 Hampshire, Ohio, Pennsylvania, Tennessee, Virginia and West Virginia, and the
21 Rate Commission of the Metropolitan St. Louis Sewer District.