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Witness: Henry E. Warren
Sponsoring Party: Mo PSC Staff
Type of Exhibit: Rebuttal Testimony
Case No.: GR-2004-0209
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MISSOURI PUBLIC SERVICE COMMISSION

UTILITY OPERATIONS DIVISION

FILED

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REBUTTAL TESTIMONY

OF

Missouri Public
Service Commission

HENRY E. WARREN, PHD

MISSOURI GAS ENERGY

CASE NO. GR-2004-0209

Jefferson City, Missouri
May 2004

Exhibit No. 839
Case No(s) GR-2004-0209
Date 6-21-04 Rptr _____

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

In the Matter of Missouri Gas Energy's)
Tariff Sheets Designed to Increase Rates)
for Gas Service in the Company's)
Missouri Service Area)

Case No. GR-2004-0209

AFFIDAVIT OF HENRY WARREN

STATE OF MISSOURI)
) ss
COUNTY OF COLE)

Henry Warren, of lawful age, on his oath states: that he has participated in the preparation of the following Rebuttal Testimony in question and answer form, consisting of 7 pages of Rebuttal Testimony to be presented in the above case, that the answers in the following Rebuttal 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.


Henry Warren

Subscribed and sworn to before me this 21st day of May, 2004.


Notary Public

My commission expires _____

DAWN L. HAKE
Notary Public – State of Missouri
County of Cole
My Commission Expires Jan 9, 2005

REBUTTAL TESTIMONY

OF

HENRY E. WARREN, PhD

MISSOURI GAS ENERGY

CASE NO. GR-2004-0209

Q. Please state your name and business address.

A. My name is Henry E. Warren and my business address is P. O. Box 360, Jefferson City, Missouri, 65102.

Q. By whom are you employed and in what capacity?

A. I am employed by the Missouri Public Service Commission (PSC or Commission) as a Regulatory Economist in the Energy Department of the Utility Operations Division.

Q. How long have you been employed by the Commission?

A. I have worked at the Commission 11 years.

Q. What is your educational and professional background?

A. I received my Bachelor of Arts and my Master of Arts in Economics from the University of Missouri-Columbia, and a Doctor of Philosophy (PhD) in Economics from Texas A&M University. Prior to joining the PSC Staff (Staff), I was an Economist with the U.S. National Oceanic and Atmospheric Administration (NOAA). At NOAA I conducted research on the economic impact of climate and weather. I began my employment at the Commission on October 1, 1992, as a Research Economist in the

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1 Economic Analysis Department. My duties consisted of calculating adjustments to
2 test-year energy use based on test-year weather and normal weather, and I also assisted in
3 the review of Electric Resource Plans for investor owned utilities in Missouri. From
4 December 1, 1997, until May 2001, I was a Regulatory Economist II in the
5 Commission's Gas Department where my duties still included analysis of issues in
6 natural gas rate cases and were expanded to include reviewing tariff filings, applications
7 and various other matters relating to jurisdictional gas utilities in Missouri. On June 1,
8 2001, the Commission organized an Energy Department and I was assigned to this
9 Department. My duties in the Energy Department are similar to my duties in the Gas
10 Department.

11 Q. Are you a member of any professional organizations?

12 A. Yes, I am a member of the International Association for Energy
13 Economics and the Western Economics Association.

14 Q. Have you previously filed testimony before the Commission?

15 A. Yes, I have filed testimony in the cases listed in Schedule 1 attached to
16 this testimony.

17 Q. What is the purpose of your Rebuttal Testimony?

18 A. My Rebuttal Testimony covers the Pay As You Save (PAYS[®]) system
19 described in the Direct Testimony of Ms, Barbara A. Meisenheimer, The Office of Public
20 Counsel. This system is described by Ms. Meisenheimer as a financially self-sufficient
21 program that would assist moderate and middle-income households in making energy
22 bills more affordable without requiring ongoing contributions from Missouri Gas Energy
23 (MGE or Company) or its customers for the program.

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1 Q. How would you describe the basic concept of the PAYS®?

2 A. I have read some documents and references furnished by Ms.
3 Meisenheimer in her Data Request Responses from *PAYS America*, including the paper,
4 *Pay-As-You-Save Energy Efficiency Products, Restructuring Energy Efficiency*, Paul A.
5 Cillo and Harlan Lachman, National Association of Regulatory Utility Commissioners,
6 December 1999. The PAYS® system is offered through PAYS America, a non-profit
7 organization providing research and education about PAYS®. According to the
8 information, PAYS® would offer homeowners, landlords and tenants a method to
9 improve the energy efficiency of residences or buildings with retrofitting and more
10 energy efficient appliances and equipment with a long-term low-interest payback without
11 requiring a conventional loan, up-front payment, or debt obligation. The participating
12 customers, who benefit from the *approved efficiency measures* (measures), pay for these
13 measures through a tariffed charge on their utility bill, but only for as long as they occupy
14 the location where the measures were installed. The monthly charge is always lower than
15 the measure's estimated savings and it remains on the bill for that location until all costs
16 are recovered. Like a loan, PAYS® allows for payment over time, but unlike a loan the
17 PAYS® obligation ends for a particular customer when occupancy ends or the measure
18 fails to perform as specified. The PAYS® system proposes eliminating the existing
19 market barriers to the implementation of energy efficiency in households by offering
20 measures that are more financially attractive to utility customers.

21 Q. What are some of the basic elements of a PAYS® system?

22 A. Under the PAYS® model, described in the Cillo and Lachman paper
23 above, a fund would be created that would finance the purchase of measures from

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1 vendors. Payments for the cost of the measures would be collected through the MGE bill
2 over time using a PAYS[®] tariff. The program is designed so that utility savings exceed
3 payments for the measures in the near term and through the payment period, with the
4 additional requirement that the measure will be effective one-third longer than the
5 payment period. So, the customer's bill is actually lower than it would have been absent
6 installation of the measures. The measures for a particular residence or building would
7 be determined by an energy audit and subsequently an independent certification of
8 PAYS[®] measures so that the measures actually generate annual savings sufficient to
9 cover their annual payments and the term of the payments is for only three-quarters of the
10 estimated measure life. Longer term, higher cost retrofitting such as insulation would
11 also be included with payments running with the meter, i.e. if the occupant or owner of
12 the property receiving the measure changed, the monthly charge for the measure would
13 transfer to the successor utility customer.

14 Q. What is your evaluation of Ms. Meisenheimer's discussion of the benefits
15 of a system such as PAYS[®]?

16 A. I concur that the PAYS[®] system could benefit participating ratepayers by
17 providing a means for them to afford the set of PAYS[®] measures. If the PAYS[®] system
18 can be designed and implemented as described in the information provided by PAYS
19 America, a result could be the same level of comfort for the participating ratepayer with a
20 lower level of energy consumption, which should mean a comparable decrease in their
21 utility bills. A PAYS[®] system could also benefit all ratepayers and MGE by helping
22 utility bills become more affordable to the participating ratepayers. A program such as
23 the PAYS[®] system may need to be implemented in the context of resource planning

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1 incentives for the regulated utilities so that the paradox of energy conservation under
2 regulation is avoided, i.e. shrinking usage due to conservation leads to lower revenues for
3 the regulated utility, subsequently higher per unit rates are requested to maintain the
4 revenues needed to provide a specified rate of return, so the customer's costs for the
5 utility service do not decline as much as anticipated with decreased usage.

6 As Ms. Meisenheimer states, the PAYS[®] system is purported to be
7 self-sustaining. Once funding is available, the participant's payments through their bills
8 are intended to replenish the program funds. Consequently, the PAYS[®] system should be
9 a benefit to all ratepayers and not be an ongoing expense item. Although a limit may be
10 set on the amount of PAYS[®] funding to an individual customer, the program may be
11 more successful without a means test for participation as suggested by Ms.
12 Meisenheimer.

13 Q. What is the extent and success of previous PAYS[®] systems that have been
14 implemented?

15 A. According to information provided by Mr. Cillo and Mr. Lachman, PAYS
16 America, one version of the PAYS[®] system was implemented by the Public Service of
17 New Hampshire (PSNH), an investor owned electric utility, for their municipal customers
18 and another version of the PAYS[®] system was implemented by the New Hampshire
19 Electric Cooperative (NHEC), a rural electric cooperative. The limited implementation
20 of PAYS[®] by PSNH may have been due to their existing programs for residential and
21 commercial/industrial customers including Energy Star[®] Homes and Appliances and
22 other incentives for energy efficiency including rebate programs. NHEC measures
23 included in their PAYS[®] program were weatherization, Energy Star[®] Lighting, Lighting

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1 Controls and a Heat Pump Water Heater. A evaluation from PAYS America indicates
2 that all measures installed thus far for which data are available have met the criteria for
3 saving more on a monthly basis than the monthly charge for the measure.

4 Q. What differences between the MGE service area and the New Hampshire
5 Utility service areas where PAYS® has been implemented would cause the proposed
6 PAYS® system to be different?

7 A. Differences in the PAYS® system would occur due to differences in the
8 climate, and by the cost of natural gas, electricity, and water. The per unit cost of natural
9 gas is about 15% lower in Missouri and the per unit cost of electricity is about 30%
10 lower, which will change the measure's savings. Also, the willingness of customers to
11 encumber their utility bills with ongoing charges might be different.

12 Q. Is a PAYS® system being considered by any other utilities in Missouri?

13 A. Yes, I am aware of one other Missouri utility that is evaluating a proposal
14 for a PAYS® system.

15 Q. What is the effect of the PAYS® system being *resource blind* in its
16 implementation?

17 A. This type of PAYS® system would allow for measures without respect to
18 the type of energy that is conserved. So, the program would include high efficiency gas
19 water heaters and furnaces, it would also include compact florescent lights (CFL) and low
20 flow showerheads that would conserve electricity and water. A resource blind PAYS®
21 system would provide a broader spectrum of measures that could be implemented than if
22 measures are evaluated in terms of a single type of energy.

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1 Q. Do you concur with Ms. Meisenheimer's proposed funding for limited
2 pilot PAYS[®] system?

3 A. I agree with the proposal for a pilot PAYS[®] program, and for the need for
4 continued work on the program to determine how it could be effectively implemented.
5 Staff considered the funding of a PAYS[®] system along with the Company's current
6 low-income weatherization program and the current Experimental Low-Income Rate
7 (ELIR) program. Staff proposes a monthly adder of \$0.018 per residential customer
8 which would provide approximately \$100,000 annually for two years for a PAYS[®]
9 system. This amount is lower than the \$126,156 proposed by Ms. Meisenheimer, but
10 Staff's recommendation was arrived at with the concurrent consideration of the
11 low-income weatherization and ELIR programs, which are addressed by Staff Witness
12 Ms. Anne Ross in her Rebuttal Testimony.

13 Q. Does this conclude your Rebuttal Testimony?

14 A. Yes, it does.

MISSOURI GAS ENERGY

CASE NO. GR-2004-0209

PREVIOUS CASES IN WHICH PREPARED TESTIMONY WAS PRESENTED BY:

HENRY E. WARREN, PhD

<u>COMPANY NAME</u>	<u>CASE NUMBER</u>
St. Joseph Light and Power Company	GR-93-042 ¹
Laclede Gas Co.	GR-93-149
Missouri Public Service	GR-93-172 ¹
Western Resources	GR-93-240 ¹
Laclede Gas Co.	GR-94-220 ¹
United Cities Gas Co.	GR-95-160 ¹
The Empire District Electric Co.	ER-95-279 ¹
Laclede Gas Co.	GR-96-193 ¹
Missouri Gas Energy	GR-96-285 ¹
The Empire District Electric Co.	ER-97-081 ¹
Union Electric Co.	GR-97-393 ¹
Missouri Gas Energy	GR-98-140 ¹
Laclede Gas Co.	GR-98-374 ¹
St. Joseph Light & Power Company	GR-99-246 ¹
Laclede Gas Co.	GR-99-315 ¹
Union Electric Company (d/b/a AmerenUE)	GR-2000-512 ¹
Missouri Gas Energy	GR-2001-292 ¹
Laclede Gas Co.	GR-2001-629 ¹
Laclede Gas Co.	GR-2002-0356 ¹
Laclede Gas Co.	GT-2003-0117
Aquila Networks (MPS and L&P)	GR-2004-0072 ¹

¹ Testimony includes computations to adjust test year volumes, therms, or kWh to normal weather.