

Exhibit No.:	
Issues:	Commitment to Provide Weatherization Assistance to AmerenUE Natural Gas Low-Income Customers and Energy Efficiency Services to Residential and Commercial Customers.
Witness:	John A. Buchanan
Sponsoring Party:	Missouri Department of Natural Resources - Missouri Energy Center
Type of Exhibit:	Direct Testimony
Case No.:	GR-2007-0003

**MISSOURI PUBLIC SERVICE COMMISSION**

**CASE NO. GR-2007-0003**

**DIRECT TESTIMONY**

**OF**

**JOHN A. BUCHANAN**

**ON**

**BEHALF OF**

**MISSOURI DEPARTMENT OF NATURAL RESOURCES**

**ENERGY CENTER**

Jefferson City, Missouri  
December 13, 2006

## **TABLE OF CONTENTS**

I. INTRODUCTION.....	1
II. PURPOSE AND SUMMARY OF TESTIMONY.....	2
III. LOW-INCOME WEATHERIZATION PROGRAM.....	3
IV. ENERGY EFFICIENT EQUIPMENT PROGRAM.....	9

1 **I. INTRODUCTION**

2 **Q. Please state your name and business address.**

3 A. John A. Buchanan, Missouri Department of Natural Resources, Missouri Energy Center,  
4 1101 Riverside Drive, Jefferson City, Missouri.

5 **Q. What is the Missouri Energy Center?**

6 A. The Missouri Energy Center (EC) is a non-regulatory state agency that works to protect the  
7 environment and stimulate the economy through energy efficiency and renewable energy  
8 resources and technologies. The EC is the designated state energy office in Missouri  
9 responsible for the administration of the federal Low Income Weatherization Assistance  
10 Program (LIWAP) and the federal State Energy Program (SEP) established by the United  
11 States Congress in 1978 and managed nationally by the United States Department of Energy.  
12 The EC is vested with the powers and duties set forth in Chapter 640.150, RSMo.

13 **Q. What is your position with the Missouri Energy Center?**

14 A. I am a Senior Planner in the EC's Energy Policy and Planning Program within the Director's  
15 Office at the Missouri Department of Natural Resources.

16 **Q. On whose behalf are you testifying?**

17 A. I am testifying on behalf of the Missouri Department of Natural Resources, an intervenor in  
18 these proceedings.

19 **Q. Please describe your educational background and business experience.**

20 A. I joined the Missouri Department of Natural Resources, Division of Energy, now the Energy  
21 Center, in July of 1980 as director of the Missouri Residential Conservation Service  
22 Program. In 1986, I was promoted to serve as the Senior Energy Planner within the  
23 Director's Office at the Division of Energy. In this capacity, I was involved in a variety of

1 programs and projects addressing energy, environmental, and natural resource issues. In  
2 October 1995, I was appointed as a Senior Energy Planner within the Policy and Planning  
3 Unit at the Division of Energy where my responsibilities included energy emergency  
4 planning, energy supply and price monitoring and energy-related policy development. Prior  
5 to my employment with the Department of Natural Resources, I served as Special Assistant  
6 to the Mayor in Columbia, Missouri for two years. I have a Bachelor of Arts degree from  
7 Columbia College. I am a former Fellow of the University of Missouri, where I received a  
8 Master of Science in Public Administration.

## 9 **II. PURPOSE AND SUMMARY OF TESTIMONY**

10 **Q. What is the purpose of your direct testimony in these proceedings?**

11 A. The purpose of my testimony is to address the Direct Testimony filed by Mr. Richard J. Mark  
12 on behalf of Union Electric Company d/b/a AmerenUE (UE) with a focus on the need for UE  
13 to continue its commitment to provide on-going funds to support the company's current  
14 weatherization assistance program and energy efficient equipment program for the  
15 company's residential and commercial customers pursuant to UE's last natural gas rate case  
16 GR-2003-0517.

17 **Q. Does Mr. Mark address UE's residential and commercial energy-efficient equipment  
18 program and UE's low-income weatherization assistance program?**

19 A. Yes. Mr. Mark provides details related to the Unanimous Stipulation and Agreement reached  
20 in UE's last natural gas rate case, GR-2003-0517, approved by the Commission in its Report  
21 and Order Approving Stipulation and Agreement issued on January 12, 2004. Mr. Mark  
22 addresses four specific programs established in that rate case: 1) the low-income  
23 weatherization program; 2) a residential and commercial energy-efficient equipment

1 program, proposed by the EC; 3) the experimental low-income program for Scott and  
2 Stoddard counties and, 4) a study of the fixed bill option for the winter of 2004 and 2005,  
3 proposed by the staff of the Missouri Public Service Commission (Staff). My testimony will  
4 address the weatherization program and the energy efficient equipment program proposed by  
5 the EC and approved by the Commission.

### 6 **III. LOW INCOME WEATHERIZATION PROGRAM**

7 **Q. Do you agree with Mr. Mark's descriptions and conclusions of the weatherization**  
8 **program?**

9 A. Yes. Mr. Mark provides a description and his conclusions of the program in his Direct  
10 Testimony (Richard J. Mark, Direct Testimony, pg. 7, line 1-8). Pursuant to GR-2003-0517,  
11 UE provided annual funding of \$155,000 that allowed an annual average of 80 UE natural  
12 gas space-heated homes to be weatherized. Six of the state's 18 community action agencies  
13 that manage EC's federal Low Income Weatherization Assistance Program (LIWAP)  
14 received funds directly from UE to weatherize homes served by UE. All funds provided by  
15 UE were used to weatherize low-income households with natural gas space heating  
16 consistent with the federal guidelines for the LIWAP.

17 **Q. Did UE support the weatherization program prior to the company's last rate case, GR-**  
18 **2003-0517?**

19 A. Yes. Pursuant to the terms and conditions of a Stipulation and Agreement filed and approved  
20 in UE's natural gas rate case GR-1997-393, UE implemented an experimental weatherization  
21 program for a two-year period ending on March 31, 2000, that was funded at the level of  
22 \$150,000 per year.

1 In UE's natural gas rate case GR-2000-512, by Order Approving Unanimous Stipulation and  
2 Agreement dated October 17, 2000, the company implemented a new weatherization  
3 program, funded by the company at an annual rate of \$125,000. The details of the program  
4 were determined through a collaborative process among representatives of the company,  
5 Staff, the Office of Public Counsel (OPC) and the Department of Natural Resources Energy  
6 Center.

7 It is important to note that in an electric over-earnings case filed by Staff, Case Number EC-  
8 2002-1, UE provided \$8 million in settlement to support electric energy efficiency programs  
9 (\$4 million for weatherization and \$4 million for other energy efficiency programs) over a  
10 four-year period. UE's natural gas residential and commercial customers were not  
11 specifically included in any of these energy efficiency programs.

12 UE, Staff, OPC, and the EC established a collaborative planning process to design and  
13 implement a series of energy efficiency programs for UE's electric residential and  
14 commercial customers pursuant to EC-2002-1.

15 **Q. Is there a relationship between UE's proposed rate increase and the weatherization**  
16 **program?**

17 A. Yes. In the past 3 years, UE has proposed two natural gas rate increases totaling \$37.6  
18 million. In its last rate case, GR-2003-0517, UE proposed a rate increase of \$26.7 million  
19 with approximately \$19.4 million or 72.4 percent directed to UE's residential customers and  
20 approximately \$6.2 million or 23.0 percent directed to UE's General Service customers,  
21 which include commercial customers.

22 In its current filing, UE proposes a rate increase of \$10.9 million. Approximately \$8.4  
23 million or 77 percent is directed to UE's residential customers, and approximately \$2.1

1 million or 19 percent is directed to UE's General Service customers, which include  
2 commercial customers.

3 As UE natural gas rates increase, residential customers experience increased financial  
4 pressure to meet their utility bill payments. Low income residential customers, in particular,  
5 face even greater hardship as they address the challenge of meeting energy expenses on a  
6 small and/or fixed household income. Weatherization services provide short-term and long-  
7 term benefits to customers by helping reduce energy demand and, thus, helping control  
8 energy bills and reduce late payment or uncollectible utility bills.

9 **Q. Please describe the general benefits of low-income residential weatherization.**

10 A. As noted earlier in my testimony, home heating is a high cost for individuals with low  
11 income. Overall, low-income households that qualify for weatherization spend more of their  
12 income on energy needs compared to non-low-income households. The decision and ability  
13 to pay one's utility bill often compete with other necessities. Many low-income individuals  
14 live in older homes equipped with older, less-efficient heating systems and generally lack  
15 energy-efficiency items such as insulation. Data from the United States Department of  
16 Energy show that families who receive weatherization improvements to their homes under  
17 programs consistent with federal LIWAP guidelines experience a reduction in space heating  
18 fuel consumption.

19 Specifically for homes using natural gas for heat, annual space heating fuel consumption is  
20 reduced by an average of 32.3 percent. For homes using electricity for heat, weatherization  
21 reduces space heating fuel consumption by an average of 25.6 percent. (Source: "Estimating  
22 The National Effects Of The U.S. Department of Energy's Weatherization Assistance  
23 Program With State-Level Data: A Metaevaluation Using Studies From 1993 to 2005", Oak

1 Ridge National Laboratory, September 2005.) Weatherization is a cost-effective means to  
2 help low-income individuals or families pay their energy bills year after year for the life of  
3 the energy-efficiency product. Weatherization reduces the amount of state and federal  
4 assistance needed to pay higher utility bills for families whose homes have been weatherized,  
5 keeps money in the local economy, results in a positive impact on the household's  
6 promptness in paying utility bills, reduces arrearages and helps to reduce environmental  
7 pollution through energy efficiency.

8 **Q. Are there utility benefits from low-income energy efficiency services?**

9 A. Yes. In addition to benefits to customers, it is important to examine the benefits of  
10 weatherization from the perspective of energy service providers. Extensive research has  
11 found that low-income energy-efficiency programs result in substantial non-energy savings  
12 to utilities. These non-energy savings include reductions in working capital expense,  
13 uncollectible accounts, and credit and collection expenses.

14 **Q. Do you have information regarding the success of the UE weatherization program?**

15 A. The UE weatherization program was modeled after the statewide LIWAP administered by  
16 the EC. Weatherization services are provided through community action agencies through  
17 public grant funds by the EC to support weatherization services throughout Missouri.  
18 The Central Missouri Counties' Human Development Corporation (CMCHDC) located in  
19 Columbia, Missouri, participated in the UE weatherization program established by GR-2003-  
20 0517 and the federal LIWAP. Through October 2006, the CMCHDC weatherized a total of  
21 49 eligible low-income homes under the UE weatherization program. The U.S. Department  
22 of Energy's National Energy Audit (NEAT) procedure is used by the CMCHDC as well as  
23 the other weatherization agencies throughout Missouri to determine the costs and benefits of



1 weatherization investments to a low-income residential household. The 49 homes served by  
2 UE and weatherized by CMCHDC had an average direct savings-to-investment ratio of  
3 1:3.43. In other words, UE natural gas space heated homes saved an average \$3.43 for each  
4 dollar invested under UE's weatherization program. The CMCHDC reported the savings-to-  
5 investment ratio identified by the NEAT procedure was as high as 1:6.35 for some homes; in  
6 other words, some UE natural gas space heated homes saved \$6.35 for every dollar spent  
7 under UE's weatherization program.

8 **Q. Briefly describe the benefits of weatherization as it relates to utility bill payment**  
9 **assistance.**

10 A. In June 2006, the EC prepared a report that presented the results of its analysis of the  
11 relationship between weatherization and the need for Energy Crisis Intervention Program or  
12 ECIP. ECIP provides financial assistance to households in danger of having utility service  
13 disconnected or that have been disconnected and do not have the resources to have services  
14 restored. The EC analyzed four years of LIWAP and ECIP data for the period October 1,  
15 2001 through September 30, 2005 supplied by three Missouri community action agencies:  
16 Central Missouri Community Action, Columbia; Missouri Ozarks Community Action,  
17 Richland; and Ozark Action, West Plains.

18 The purpose of the analysis was to determine whether households participating in Missouri's  
19 weatherization program had a reduced need for ECIP funds in years subsequent to the  
20 weatherization improvements to their homes. Following weatherization of their homes, the  
21 percentage of families that requested ECIP assistance fell by 28 percent, 34 percent and 63  
22 percent, respectively, among the three agencies listed above. In addition, the dollar amount  
23 of ECIP payments made to weatherized homes was reduced by 27 percent, 57 percent and 59

1 percent, respectively, among the three agencies listed above. Thus, weatherization benefits  
2 participants and provides measurable reductions in the demand and need for utility billing  
3 assistance. (Source: Analysis of Missouri Weatherization and Energy Crisis Intervention  
4 Program Data, Missouri Department of Natural Resources, Energy Center, June 23, 2006)

5 **Q. Please describe the need for low-income weatherization in Missouri.**

6 A. A significant number of low-income households are in need of energy- efficiency  
7 improvements. From 1978 (beginning of the LIWAP in Missouri) through September 2006,  
8 more than 150,000 homes have been weatherized in Missouri. The EC estimates that  
9 approximately 300,000 eligible homes remain (as identified by the U.S. Census Bureau,  
10 Table P93. Ratio of Income in 1999 to Poverty Level by Household Type – Missouri)  
11 excluding additional eligible low-income households identified after calendar year 2000 and  
12 low-income households weatherized prior to September 30, 1993, that are eligible for re-  
13 weatherization that allows newer efficiency technologies to be incorporated into the  
14 residential structure. (In Missouri State Fiscal Year 2001, the eligibility was increased from  
15 125% to 150% of the poverty level in response to the 2000 – 2001 heating crisis, resulting in  
16 approximately 100,000 additional homes meeting the eligibility criteria.) Ongoing and  
17 additional sources of low-income energy-efficiency services are needed.

18 **Q. What is the estimated number of Missourians currently on weatherization waiting lists?**

19 A. Statewide, more than 3,000 homes are currently on weatherization waiting lists.

20 **Q. How many new clients are added to that list annually?**

21 A. On average, more than 2,400 households are added to the waiting list annually.

1 **Q. How should the weatherization program be designed?**

2 A. The UE weatherization program should continue to be designed and implemented consistent  
3 with guidelines for the federal LIWAP.

4 **IV. ENERGY EFFICIENT EQUIPMENT PROGRAM**

5 **Q. Do you agree with Mr. Mark's description of UE's residential and commercial energy**  
6 **efficient equipment program?**

7 A. Yes. Mr. Mark provides a description of the program in his Direct Testimony (Richard J.  
8 Mark, Direct Testimony, pg. 9, line 3-22 and pg. 10, lines 1-22). Pursuant to the Stipulation  
9 and Agreement in Case No. GR-2003-0517, a collaborative consisting of UE, Staff, OPC and  
10 the EC was established to design the components of the residential and commercial energy  
11 efficient equipment program.

12 UE provided funding of \$55,000 in 2004, \$81,550 in 2005 and \$55,800 in 2006 to support  
13 rebate programs for "ENERGY STAR" qualified residential furnace replacement and  
14 residential programmable thermostats; residential hot water heater wraps, hot water pipe  
15 insulation and low flow showerheads; and commercial "ENERGY STAR" qualified energy  
16 efficient natural gas utilization equipment.

17 **Q. Do you agree with Mr. Mark's explanation of each program and the conclusions**  
18 **presented?**

19 A. In general, yes. Mr. Mark's overall explanation of the programs is correct. According to Mr.  
20 Mark, the residential furnace rebate program and the commercial gas utilization equipment  
21 programs were successful (Richard J. Mark, Direct Testimony, pg. 9, line 18-22 and pg. 10,  
22 line 1-22.) Mr. Mark notes that the rebate programs addressing programmable thermostats  
23 and low-cost measures including water heater wraps and pipe insulation were not as

1 successful but UE “continued these programs in an attempt to provide a benefit to those  
2 customers who are unable to participate in the alternative programs.” (Richard J. Mark,  
3 Direct Testimony, pg. 10, lines 15-22 and pg. 11, line 1-2)

4 The program was funded at \$55,000 in 2004. As noted by Mr. Mark, the residential furnace  
5 rebate program and the commercial natural gas equipment rebate programs were well-  
6 received. The response to programmable thermostats and low-cost measures was below the  
7 response level estimated by the collaborative. Due to the overwhelming response to the  
8 residential furnace and commercial gas utilization programs that depleted all available funds  
9 in these rebate categories, UE funded the program at \$81,550 in 2005.

10 Funds for programmable thermostats and low-cost measures categories were reduced due to  
11 the limited response, however, the residential furnace and commercial gas utilization  
12 equipment rebate funding levels were nearly doubled, with the residential rebates raised from  
13 \$33,334 in 2004 to \$63,100 in 2005. Commercial rebates were increased from \$8,333 in  
14 2004 to \$16,500 in 2005. During the 2005 program year, 249 residential customers replaced  
15 older less efficient natural gas furnaces with higher efficiency “ENERGY STAR” qualified  
16 furnaces. In addition, 22 UE commercial gas customers participated in the program.

17 Available funds for these rebate categories were exhausted by the end of the program period.

18 In the 2006 program year that began October 2006, total available funds were limited to  
19 \$55,850 since the program was authorized at \$165,000 over a three-year period. Funds for  
20 programmable thermostats were maintained at \$2,250 consistent with the number of rebates  
21 issued in the 2005 program period. Residential furnace rebates were funded at \$41,600 or  
22 \$21,500 below the 2005 program year level; and, commercial gas utilization equipment  
23 rebates were reduced \$4,500 to \$12,000.

1 Based on customer response in 2005 as well as the initial response to the third and final  
2 program period that began October 1, 2006, it is anticipated that all program funds should be  
3 depleted prior to the end of the program year in April 2007.

4 As of November 29, 2006, UE has paid or processed 62 rebate applications, or 30 percent of  
5 an estimated 208 residential customers that may participate in the 2006 rebate program  
6 period in operation from October 1, 2006 to April 1, 2007.

7 **Q. Do Mr. Mark and UE propose to continue the weatherization program and the energy**  
8 **efficient equipment program?**

9 A. Yes. According to Mr. Mark's testimony, UE is committed to finding ways to assist  
10 customers in need of help and is willing to consider continuing these kinds of low-income  
11 and energy efficiency programs or in developing new or additional programs of this type.  
12 Mr. Mark proposes "to work collaboratively with the Commission and other key stakeholders  
13 to continue current low income energy assistance programs and energy conservation  
14 programs as appropriate, as well as to develop new programs where beneficial." (Richard J.  
15 Marks, Direct Testimony, pg. 13, lines 13-20)

16 **Q. Should UE continue the weatherization program and the energy efficient equipment**  
17 **program at specific funding levels and to engage in a collaborative for other energy**  
18 **efficiency programs?**

19 A. Yes. UE has supported weatherization for low-income residential natural gas customers since  
20 1998. UE should be commended for their support of the weatherization program and the  
21 energy efficiency equipment program and for their offer to explore new opportunities for  
22 energy efficiency programs to support the energy needs of UE natural gas customers.

1 Since natural gas is used specifically to provide space heating and water heating (including  
2 boiler application) for UE residential and commercial customers, the EC proposes the  
3 continuation of the weatherization program and the energy efficient equipment program.

4 The energy efficient equipment program should be extended to allow additional customers to  
5 participate and to establish sufficient history to allow evaluation of the program results and  
6 benefits. The EC also welcomes the opportunity to discuss and design further energy  
7 efficiency programs through the current collaborative including UE, Staff and the OPC.

8 **Q. What funding level would be required to adequately support the weatherization**  
9 **program?**

10 A. For the residential weatherization program, the EC proposes to continue the program  
11 established in UE's last rate case, GR-2003-0517, with the cooperation of seven community  
12 action agencies that administer the LIWAP within UE's natural gas service territory.

13 The EC recommends an annual funding level of no less than \$263,000 to support the  
14 weatherization program until UE's next natural gas rate case or until such time as the  
15 commission rescinds the program by Order. This would provide sufficient funding to  
16 annually weatherize as many as 150 low-income households depending upon the amount of  
17 UE money needed to provide the cost-effective weatherization energy-efficiency  
18 improvements in each home.

19 **Q. What funding level would be required to adequately support the residential and**  
20 **commercial energy efficiency program by UE?**

21 A. The EC proposes to continue the energy efficient equipment program established in UE's last  
22 natural gas rate case, GR-2003-0517, but to adjust the program to provide rebates for  
23 "ENERGY STAR" qualified residential natural gas furnaces and boilers based on the current

1 success of the program. The EC proposes annual funding of no less than \$100,000 until  
2 UE's next natural gas rate case or until such time as the commission rescinds the program by  
3 Order.

4 The components of this program would include the following:

5 Residential Energy Efficient Equipment Program

- 6 1) An allocation of \$80,000 to fund a rebate program providing residential natural gas  
7 customer rebates for up to \$200 per household to replace existing natural gas furnaces  
8 with high efficiency "ENERGY STAR" qualifying natural gas furnaces (including  
9 residential boilers) as rated by the U.S. Environmental Protection Agency allowing an  
10 estimated 400 households to participate in this program annually. The EC proposes  
11 that the energy efficient equipment program operate 12 months per year rather than  
12 the current six month interval to allow greater market transformation and customer  
13 participation.

14 Commercial Energy Efficient Equipment Program

- 15 2) An allocation of \$20,000 to fund a rebate program providing commercial customer  
16 rebates of up to \$375 to replace existing standard natural gas utilization equipment  
17 with high efficiency "ENERGY STAR" qualifying natural gas utilization equipment,  
18 allowing an estimated 53 commercial customers to participate in this program  
19 annually. The EC proposes that the energy efficient equipment program operate 12  
20 months per year rather than the current six month interval to allow greater market  
21 transformation and customer participation.

22 Specific details regarding these programs would be established by the current collaborative  
23 representing UE, Staff, OPC, EC and other interested parties.

1 **Q. Please describe the specific geographic location where UE would offer the proposed**  
2 **residential and commercial natural gas energy efficiency program.**

3 A. The program should be offered throughout UE's natural gas service territory, consistent with  
4 UE's last program established by GR-2003-0517.

5 **Q. What is the estimated cost of the weatherization program and energy efficient**  
6 **equipment program on a per customer basis?**

7 A. The company currently provides service to approximately 110,490 residential natural gas  
8 customers and 12,696 general service customers that includes commercial natural gas  
9 customers as of June 30, 2006 for a total of 123,186 residential and general service  
10 customers.

11 Weatherization Program – At an annual funding level of \$263,000, the cost of this  
12 weatherization program would be approximately \$0.18 per month per customer.

13 Energy Efficient Equipment Program – At an annual funding level of \$100,000, the cost of  
14 the energy efficient equipment program would be approximately \$0.07 per month per  
15 customer.

16 **Q. Does this conclude your testimony?**

17 A. Yes. Thank you.



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

In the Matter of Union Electric Company     )  
d/b/a AmerenUE for Authority to File        )  
Tariffs Increasing Rates for Natural Gas     )           Case No. GR-2007-0003  
Service Provided to Customers in the        )  
Company's Missouri Service Area.            )

**AFFIDAVIT OF JOHN A. BUCHANAN**

**STATE OF MISSOURI     )**  
  )**ss**  
**CITY OF JEFFERSON     )**

John A. Buchanan, being duly sworn on his oath, states:

1. My name is John A. Buchanan. I work in the City of Jefferson, Missouri, and I am employed by the Missouri Department of Natural Resources as Senior Planner, Missouri Energy Center, Office of the Director.
2. Attached hereto and made a part hereof for all purposes is my Direct Testimony on behalf of the Missouri Department of Natural Resources – Missouri Energy Center consisting of 15 pages all of which have been prepared in written form for introduction into evidence in the above-referenced docket.
3. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct to the best of my knowledge.

\_\_\_\_\_  
John A. Buchanan

Subscribed and sworn to before me this \_\_\_\_\_ day of December, 2006.

\_\_\_\_\_  
Notary Public

My commission expires: