

Exhibit No.:

Issue:

Large Customer  
Annualization and  
Normalization

Witness:

Daniel I. Beck

Sponsoring Party:

MoPSC Staff

Type of Exhibit:

Direct Testimony

Case No.:

GR-2001-292

**MISSOURI PUBLIC SERVICE COMMISSION**

**UTILITY OPERATIONS DIVISION**

**DIRECT TESTIMONY**

**OF**

**DANIEL I. BECK**

**FILED**<sup>2</sup>

APR 19 2001

Missouri Public  
Service Commission

**MISSOURI GAS ENERGY**

**A DIVISION OF SOUTHERN UNION COMPANY**

**CASE NO. GR-2001-292**

Jefferson City, Missouri  
April 2001

1 **DIRECT TESTIMONY**

2 **OF**

3 **DANIEL I. BECK**

4 **MISSOURI GAS ENERGY**

5 **A DIVISION OF SOUTHERN UNION COMPANY**

6 **CASE NO. GR-2001-292**

7

8 Q. Please state your name and business address.

9 A. My name is Daniel I. Beck and my business address is P. O. Box 360,  
10 Jefferson City, Missouri 65102.

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

12 A. I am employed by the Missouri Public Service Commission (MOPSC or  
13 Commission) as a Utility Regulatory Engineer in the Utility Operations Division.

14 Q. Would you please review your educational background and work experience?

15 A. I graduated with a Bachelor of Science Degree in Industrial Engineering from  
16 the University of Missouri at Columbia. Upon graduation, I was employed by the Navy Plant  
17 Representative Office in St. Louis, Missouri as an Industrial Engineer. I began my employment  
18 at the Commission in November 1987 in the Research and Planning Department of the Utility  
19 Division (later renamed the Economic Analysis Department of the Policy and Planning  
20 Division) where my duties consisted of weather normalization, load forecasting, integrated  
21 resource planning, cost-of-service and rate design. In December 1997, I was transferred to the  
22 Rate Design/Tariff Section of the Commission's Gas Department where my duties include  
23 weather normalization, annualization, tariff review, cost-of-service and rate design. I am a

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1 Registered Professional Engineer in the State of Missouri. My registration number is  
2 EN 026953.

3 Q. Have you previously testified before this Commission?

4 A. Yes, I have. Schedule 1 is a list of cases in which I have testified.

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

6 A. The purpose of my direct testimony is to sponsor: (1) the annualization and  
7 weather normalization of usage and revenues related to the Large Volume Service Class (LVS),  
8 Small General Service (SGS), and Large General Service (LGS) Classes.

9 Q. What procedure did you follow in annualizing and normalizing large volume  
10 usage?

11 A. Normalization of large customer usage was done on a customer subgroup  
12 basis. I started with individual customer information, provided by Missouri Gas Energy, a  
13 division of Southern Union Company (MGE or Company) on monthly usage for each LVS  
14 customer, which was either weather sensitive or had a significant change that occurred during  
15 the test year. Adjustments made to this data include the following:

- 16 1. Shifting of billing units for customers who switched from one rate class to  
17 another during the test year. For each customer, I removed the volumes and  
18 customer numbers from the original rate class and added them to the data in the  
19 rate class in which they were billed at the end of calendar year 2000. This  
20 resulted in three adjustments.
- 21 2. Annualization of volumes for customers who left or came on to the MGE system  
22 during this period. In this case, I removed or added the associated usage and bills  
23 from the data. This resulted in two adjustments.
- 24 3. Adjustment of usage for customers who experienced a significant  
25 increase/decrease in usage during the period. This resulted in one adjustment.

26 Q. Were any of the LVS customers weather-normalized?  
27  
28  
29

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1           A. Yes. I weather-normalized the usage of several subsets of this class. These  
2 subsets were based on the following criteria: the district (geographical area) that the customer is  
3 in (the Company serves three geographical districts) and the Company's assessment of which  
4 customers were weather-sensitive. Regressions were run on a billing month basis and a monthly  
5 weather adjustment was computed. Normal weather was provided to me by Staff Witness  
6 Dennis L. Patterson.

7           Q. Please explain the regressions further.

8           A. A regression is simply a mathematical way to compute the relationship  
9 between a dependent variable and one or more independent variables. In this case, billing  
10 month usage is the dependent variable and the two independent variables are weather and the  
11 "December 2000 effect". Weather is specifically heating degree days. The "December 2000  
12 effect" is simply a variable to determine if December 2000's response to weather was  
13 significantly different than the eleven months' response to weather. I added the "December  
14 2000 effect" variable after reviewing the graph that is attached as Schedule 2 and determining  
15 that the December 2000 response appeared to be significantly different from the other months'  
16 response.

17           Q. Was the December 2000 response to weather significantly different than the  
18 other eleven months' response to weather?

19           A. Yes. The usage in December 2000 for the weather sensitive LVS customers  
20 was significantly less than one would expect. In this case, the regression was to estimate the  
21 magnitude of the "December 2000 effect."

22           Q. Is this "December 2000 effect" actually the effect of the Christmas and New  
23 Year's holidays?

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1           A. No. Schedule 2 is a graph showing the monthly usage of the weather-  
2 sensitive LVS customers for the test year; the estimated response to weather, which is the line  
3 shown; and the monthly usage for December 1999. December 1999 appears to be consistent  
4 with the test year response to weather while the December 2000 usage is clearly not consistent  
5 with the test year response to weather.

6           Q. What factors do you believe caused the "December 2000 effect"?

7           A. The simple answer is that each weather-sensitive customer made decisions  
8 that, in total, resulted in volumes and revenues were lower than would be expected for the  
9 weather that was experienced in December 2000. However, I believe that these decisions were  
10 primarily influenced by supplier curtailments. By supplier, I am not referring to MGE, since  
11 MGE is not the primary supplier of gas to the transportation customers, but instead I am  
12 referring to the marketer from whom the customer is purchasing their gas. If a supplier curtails  
13 gas to the customer, the customer must either reduce their usage or pay unauthorized use  
14 charges that are significantly higher than the MGE's PGA gas rate. Supplier curtailments and  
15 the associated unauthorized use charges for December 2000 were also an issue in Case No. GE-  
16 2000-393 where the Company stated that were \$356,715 in unauthorized use charges in  
17 December 2000.

18          Q. Wouldn't the weather adjustment correct the December 2000 effect?

19          A. No. The weather adjustment is an adjustment applied to the actual volumes  
20 and revenues. Any other effects that are in the actual data would not be corrected. In this case,  
21 the weather adjusted sales for December without an adjustment for "December 2000 effect"  
22 would be approximately equal the expected usage for a month with nearly half as many heating  
23 degree days.

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1 Q. Are most of the adjustments that you are sponsoring equal to the adjustments  
2 that the Company has made in its test year revenue calculations?

3 A. Yes. The only adjustments that are not consistent with the Company's  
4 adjustments are the LVS weather adjustment and the LVS "December 2000 effect" adjustment.  
5 For the LVS weather adjustment, both Staff and the Company have included an adjustment, but  
6 the adjustments are of different magnitudes (Staff \$17,151, Company -\$35,441). Staff included  
7 the LVS "December 2000 effect" adjustment, while the Company did not.

8 Q. How were the results of your customer annualization used?

9 A. Using the Company's existing tariffs, I priced out the adjustments described  
10 earlier. These adjustments were included in the Staff Accounting Schedules in the  
11 determination of adjusted current revenues. Schedule 3 summarizes the Large Volume Sales  
12 and Transportation tariff class revenue adjustments.

13 Q. Did you make any other revenue adjustments?

14 A. Yes. A few of the customers that I analyzed had been on the SGS or LGS  
15 tariff during part of the test year. As part of the Staff's rate-switching analysis, I adjusted the  
16 margin revenues for these classes when appropriate. For example, a customer that changed  
17 from an LGS to an LVS customer on July 31, 2000, would have actual test year usages in both  
18 the LGS and LVS Class billing determinants. I adjusted the billing determinants and associated  
19 revenues to reflect the fact that this customer is currently a LVS customer. These adjustments  
20 are also reflected on Schedule 3.

21 Q. Does this conclude your direct testimony in this part of the case?

22 A. Yes, it does. However, I will also be filing direct testimony on cost-of-  
23 service and rate design.

**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-2001-292

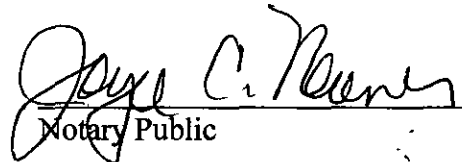
AFFIDAVIT OF DANIEL I. BECK

STATE OF MISSOURI     )  
                                   )     ss.  
COUNTY OF COLE     )

Daniel I. Beck, is, of lawful age, on his oath states: that he has participated in the preparation of the foregoing Direct Testimony in question and answer form, consisting of   5   pages to be presented in the above case; that the answers in the foregoing Direct Testimony were given by him; that he has knowledge of the matters set forth in such answers; and that such matters are true and correct to the best of his knowledge and belief.

  
\_\_\_\_\_  
DANIEL I. BECK

Subscribed and sworn to before me this 18<sup>th</sup> day of April 2001.

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

Joyce C. Neuner  
Notary Public, State of Missouri  
County of Osage  
My Commission Exp. 06/18/2001

My Commission Expires: \_\_\_\_\_

**MISSOURI GAS ENERGY, A DIVISION OF SOUTHERN UNION COMPANY**  
**Case No. GR-2001-292**

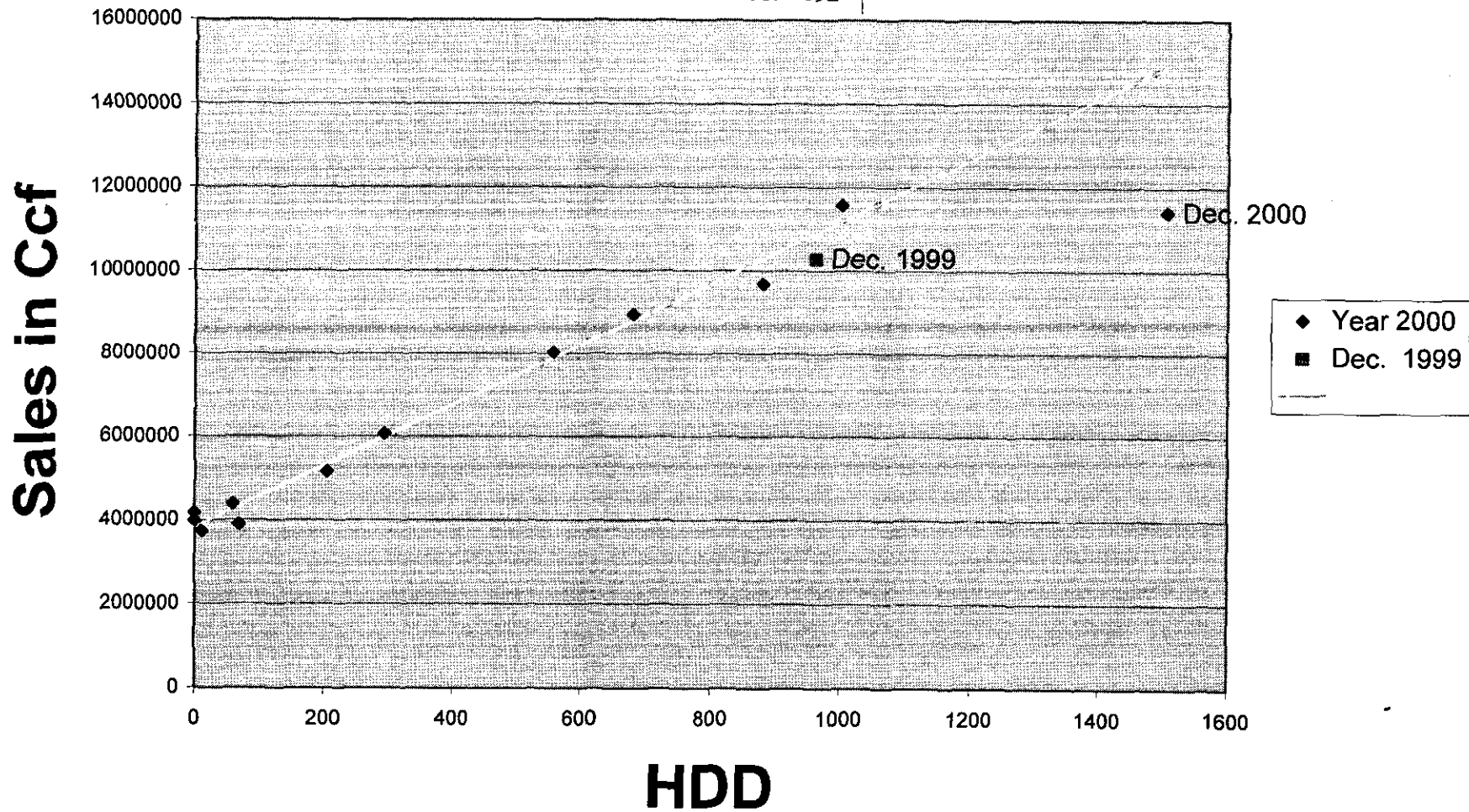
**List of Cases in which prepared testimony was presented by:**  
**DANIEL I. BECK**

<u>Company Name</u>	<u>Case No.</u>
Union Electric Company	EO-87-175
The Empire District Electric Company	EO-91-74
Missouri Public Service	ER-93-37
St. Joseph Power & Light Company	ER-93-41
The Empire District Electric Company	ER-94-174
Union Electric Company	EM-96-149
Laclede Gas Company	GR-96-193
Missouri Gas Energy	GR-96-285
Kansas City Power & Light Company	ET-97-113
Associated Natural Gas Company	GR-97-272
Union Electric Company	GR-97-393
Missouri Gas Energy	GR-98-140
Missouri Gas Energy	GT-98-237
Ozark Natural Gas Company, Inc.	GA-98-227
Laclede Gas Company	GR-98-374
St. Joseph Power & Light Company	GR-99-246
Laclede Gas Company	GR-99-315
Utilicorp United Inc. & St. Joseph Light & Power Co.	EM-2000-292
Union Electric Company d/b/a AmerenUE	GR-2000-512



# Total Weather Sensitive LVS Sales

Missouri Gas Energy  
Case No. GR-2001-292



Missouri Gas Energy  
A Division of Southern Union  
Case No. GR-2001-292

Adjustments Sponsored By Daniel I. Beck

Description	Adjustments to Account 481	Adjustment #	Large Volume Service - Sales/Transportation Charge Revenue	Adjustment #
Weather Normalization			\$17,151	S-6.5
Rate Switching from GS to LVS (1)	(\$82,352)	S-2.5	\$44,846	S-6.6
LVS Customer Deletions	(\$409)	S-2.6	(\$1,553)	S-6.7
Extreme Weather in December Adj.			\$116,783	S.6.8