Exhibit No.:	
Issues:	Weather Normalization of Test Year Sales
Witness:	Steven M. Wills
Sponsoring Party:	Union Electric Company
Type of Exhibit:	Direct Testimony
Case No.:	ER-2008-____
Date Testimony Prepared:	April 4, 2008

MISSOURI PUBLIC SERVICE COMMISSION

CASE NO. ER-2008-____

DIRECT TESTIMONY

OF

STEVEN M. WILLS

ON

BEHALF OF

UNION ELECTRIC COMPANY
d/b/a AmerenUE

St. Louis, Missouri
April, 2008

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DIRECT TESTIMONY

OF

STEVEN M. WILLS

CASE NO. ER-2008-____

I. INTRODUCTION

Q. Please state your name and business address.

A. Steven M. Wills, Ameren Services Company ("Ameren Services"), One Ameren Plaza, 1901 Chouteau Avenue, St. Louis, Missouri 63103.

Q. What is your position with Ameren Services?

A. I am the Managing Supervisor Quantitative Analytics in the Corporate Planning Department.

Q. What is Ameren Services?

A. Ameren Services provides various corporate, administrative and technical support services for Ameren Corporation ("Ameren") and its affiliates, including Union Electric Company d/b/a AmerenUE ("Company" or "AmerenUE"). Part of that work is performing important analyses, including weather normalization of test year sales for rate proceedings, which is the subject of my direct testimony in this case.

Q. Please describe your educational background and work experience.

A. I received a Bachelor's of Music degree from the University of Missouri-Columbia in 1996. I subsequently earned a Master's of Music degree from Rice University in 1998, then a Master's of Business Administration ("M.B.A.") degree with an emphasis in Economics from St. Louis University in 2002. While pursuing my M.B.A., I interned at Ameren Energy in the Pricing and Analysis Group. Following completion of my M.B.A. in

May 2002, I was hired by Laclede Gas Company as a Senior Analyst in its Financial Services Department. In this role I assisted the Manager of Financial Services in coordinating all financial aspects of rate cases, regulatory filings, rating agency studies, and numerous other projects.

In June 2004, I joined Ameren Services as a Forecasting Specialist. In this role I developed forecasting models and systems that supported the Ameren operating companies' involvement in the Midwest Independent Transmission System Operator, Inc.'s ("MISO") Day 2 Energy Markets. The forecasts that I developed were the basis for all of the companies' demand bids into the MISO markets. In November 2005, I moved into the Corporate Analysis Department in Ameren Services, where I was responsible for performing load research activities, electric and gas sales forecasts, and assisting with weather normalization for rate cases. In January 2007, I accepted a role I briefly held with Ameren Energy Marketing Company as an Asset and Trading Optimization Specialist before returning to Ameren Services as a Senior Commercial Transactions Analyst in July 2007. I was subsequently promoted to my present position as the Managing Supervisor of the Quantitative Analytics group.

Q. What are your responsibilities in your current position?

A. In my current position, I supervise a group of employees with responsibility for short-term electric load forecasting, long-term electric and gas sales forecasting, load research, weather normalization, and various other analytical tasks. My group's day-ahead load forecasts serve as the basis for the Company's demand bids into the MISO energy markets. We also perform forecasts of the Company's electric and gas sales for budgeting and resource planning purposes. Our load research work supports cost of service studies, settlements, and weather normalization, among other things.

II. PURPOSE OF TESTIMONY/BACKGROUND ON WEATHER NORMALIZATION

Q. What is the purpose of your direct testimony in this proceeding?

A. The purpose of my testimony is to describe the process AmerenUE used to weather normalize test year sales and to present the results of the weather normalization analysis. Additionally, I calculated a days' adjustment for the test year to apply to sales.

Q. What is weather normalization and why is it necessary?

A. The Company's sales are highly dependent on the weather conditions experienced in its service territory. This is primarily due to the large number of customers that heat and cool their premises with electric air conditioning, electric space heating, and gas space heaters that have associated electric blowers. When summer weather is unusually hot, air conditioning equipment must work harder to keep buildings cool. This results in an increase in the Company's sales above expected levels. Similarly if the summer is particularly mild, air conditioning loads, and therefore electric sales, will decline from expected levels. The converse is true in the winter. Colder temperatures cause increases in space heating-related electric sales, while warm weather reduces them. Weather normalization is the process of determining the level of sales that the Company should be expected to make on an ongoing basis under normal weather conditions.

When changing rates in a rate case, it is important to normalize sales for the impact of unusual weather. This is because the level of test year sales will become the denominator in the development of new electric rates (cents/kilowatt-hour ("kWh")). If the test year included weather-related increases in sales that are not expected to persist from year to year, the denominator of the rate will be too large and the resulting rate will be too low for the Company to recover its revenue requirement. Conversely, if the weather-related sales are lower than normal, the resultant rate will be too high. Therefore, it is necessary to adjust sales to a normal level in order to set a rate that will be most likely to permit the Company to collect its exact revenue requirement in years with normal sales.

Q. Please describe generally the process of weather normalizing electric sales.

A. The first step is to define "normal" weather. The National Oceanic and Atmospheric Administration ("NOAA") defines normal for a climatic element as the arithmetic average of that element computed over three consecutive decades (currently 1971-2000). This is the definition of normal that the Company has employed in this case. However, because of the unique nature of the problem of normalizing energy usage, a specific technique that is often referred to as the "rank and average" approach is applied to temperatures from these decades. This is the method utilized by the Missouri Public Service Commission Staff ("Staff"), and was used by both the Company and the Staff in the Company's most recent rate case (Case No. ER-2007-0002). I will elaborate further on this methodology later in my testimony.

The second step in the weather normalization process is to develop load-temperature relationships. Using a software package called HELM (Hourly Electric Load Model), daily loads at the rate class level are modeled statistically as a function of calendar and weather variables. These statistical relationships are the basis for the weather adjustments that are made to test year sales and will be discussed in more detail later in my testimony.

The final step in the weather normalization process is to bring together the actual and normal weather data with the statistical relationships of load and weather to calculate the adjustments necessary to bring test year sales to the level expected under normal conditions. These calculations will also be described further below.

III. ACTUAL AND NORMAL WEATHER DATA

Q. What weather data is required for the weather normalization process?

A. It is necessary to obtain actual and normal two-day weighted mean temperatures for each day in the test year that apply to the Company's service territory.

Q. What is a two-day weighted mean temperature ("TDMT")?

A. Mathematically, the TDMT is calculated by first taking an average of the high and low temperature reported for each day. This value is referred to as the daily average or mean temperature. Then for each day, the daily mean temperature is averaged with the prior day's daily mean temperature with 2/3 weight on the current day and 1/3 weight on the prior day. This calculation is done because the TDMT is a better predictor of electric loads than the simple daily mean temperature. As an example of why this is the case, electric loads tend to be higher on each successive very hot day. This phenomenon is observable in load data and is largely attributed to heat build-up. When coming off of a very hot day, buildings' internal temperatures are higher than they otherwise would be. Therefore air conditioning units must work harder to cool structures. The TDMT captures this effect by bringing forward the effect of the prior day's temperature into the value being used to explain the current day's electric usage.

Q. What weather station is used to describe the weather in the Company's service territory?

A. Weather readings taken at the NOAA station at the St. Louis International Airport ("Lambert Field") are used in the weather normalization process as representing the Company's service territory. As the St. Louis Metropolitan Area makes up a large majority of the Company's customer base and the entire load served by the Company is located in relatively nearby Missouri counties, this is appropriate. The Company acquires this weather data from the Midwestern Regional Climate Center's ("MRCC") Midwestern Climate and Information System database.

Q. Are there any adjustments made to the temperatures reported by the MRCC before they are used in the weather normalization process?

A. Actual temperatures for the test year are used as reported by the MRCC in the Company's calculations. However, in the calculation of normal weather, it is necessary to make adjustments to the historical readings to account for certain discontinuities in the data that have resulted from known changes made over time in the equipment used at Lambert Field and its location.

Q. Please describe the data used, including the adjustments you just mentioned, in the calculation of normal weather.

A. As noted earlier, NOAA defines normal for a climatic element as the average of that climatic element computed over three consecutive decades. NOAA's current definition of normal is the period from 1971-2000. Consistent with both Company and Staff approaches to weather normalization in prior AmerenUE rate cases, the Company is utilizing the 1971-2000 period as its definition of normal.

Over this period from 1971-2000, there have been changes made to the weather station at Lambert Field where the temperature measurements are taken. The most significant of these changes occurred in May 1996, when Lambert Field was changed to an Automated Surface Observing System station. At this time, both the equipment used to record temperatures and the location of that equipment changed in order to introduce a system that records weather data continuously and automatically. The new equipment and location resulted in readings that were lower than they would have been with the previous equipment and location. To illustrate this point, imagine two consecutive days that happen to have identical high and low temperature conditions. At midnight, assume that the weather station is disassembled and reconstructed with new equipment some distance away from where it was. The new equipment happens to read cooler than the equipment it replaced, since it is now in a grassy field instead of near blacktop pavement that absorbs heat. The temperature on the second day now reads more than 1 degree cooler than the first day. It would be inappropriate to use the temperature from the first day without any adjustment in a calculation that will be used on the second day.

Q. Please elaborate on the consequences of not making the appropriate adjustments.

A. We are using the average temperature from 1971-2000 to determine the normal level of sales for the test year. If the temperature readings from 1971-2000 have a known bias when compared with current readings from Lambert Field, the calculated normal temperatures that are based on those readings will not be applicable to the test year. The important thing is that the calculated normal temperature be accurate relative to the test year temperatures. The difference between the normal temperature and the actual temperature should represent climate variability, not artificial differences that can be introduced by changing observation practices.

Q. How are the magnitudes, direction, and timing of these adjustments determined?

A. The adjustments that the Company makes to the historical temperature data from Lambert Field are based on a collaborative analysis undertaken by Staff and the Company during Case No. EM-96-149. Climatologists engaged by the Company and Staff used a statistical technique called "double-mass analysis" to determine the timing, direction, and magnitude of the necessary adjustments. In the course of this analysis, the climatologists used multiple reference weather stations in close geographic proximity to Lambert Field to identify and characterize the discontinuities in the data. These adjustments were agreed to in Case No. EM-96-149 and were used again by both parties most recently in Case No. ER-2007-0002.

Q. Please describe the specific adjustments you applied to the historical temperatures.

A. There are three adjustments made to the historical temperatures. First, on January 11, 1978 a change occurred at Lambert Field that resulted in readings that were 0.3 degrees warmer than before. Next, on February 1, 1988 a change occurred that resulted in readings that were 0.45 degrees warmer than those prior. Finally, on May 16, 1996 a change occurred that resulted in temperature readings that were 1.69 degrees cooler than before. All adjustments are applied to the temperature readings before the date of the change. This practice brings historical temperatures in line with current readings at Lambert Field.

Q. Now that you have described the source of and adjustments to historical temperature data, please describe the process you use to develop daily normal temperatures for the test year.

A. First, daily TDMTs are calculated for the period of 1971-2000. Next, a technique called "rank and average" is applied to the historical TDMTs in order to develop normal values to use in the test year. The rank and average technique is used so that the resultant normal temperatures produce appropriate levels of electric usage when applied to the statistical models that capture the relationship between load and temperature. The rank and average technique starts by ranking all of the days within a season or year for each year from the highest TDMT to the lowest. Then for that season or year, the warmest day of each of the 30 years is averaged, the second warmest day of each of the 30 years is averaged, and so on until the coolest day of each of the 30 years is averaged. Through this process we get a series of daily temperatures that represent the normal hottest day for the season or year through the normal coldest day for the season or year. This result is desirable because it gives normal temperatures that also exhibit normal levels of extreme temperatures.

Q. Why is it important to have normal levels of extreme temperatures?

A. The response of load to temperature is non-linear. That means that a change in temperature of 1 degree from 40 to 41 degrees has a different impact than a change in temperature from 60 to 61 degrees, which in turn has a different impact than a change from 80 to 81 degrees. Because load behaves differently across the spectrum of possible temperatures, it is important to have a representative number of days in each part of the temperature range in order to reproduce the level of load that would be experienced across a year with normal temperature variability. The rank and average technique achieves this objective.

Q. Are there any other considerations that you make when using this technique?

A. Yes, there are many details to this calculation. In particular, there are various ways to handle certain issues around seasons and days of the week. The Company has performed the calculations consistent with its understanding of Staff's preferred approach and similar to how the Company and Staff ultimately agreed to perform these calculations in Case No. ER-2007-0002.

IV. LOAD – TEMPERATURE RELATIONSHIP

Q. How is the relationship between load and TDMT established?

A. The Company uses the Hourly Electric Load Model to develop statistical models that represent the relationship of load and temperature.

Q. What are the inputs to the HELM model?

A. The HELM model requires hourly loads for each customer rate class to be weather normalized. It also requires a calendar that describes the seasons and day-types (i.e. weekends, weekdays, etc.) to be used in the modeling process. Finally it requires daily actual TDMT for the period being used to develop the model.

Q. Since the Company bills its customers monthly, and therefore reads most of its customers' meters only monthly, how does the Company get hourly load data by customer rate class to input into the model?

A. The Company uses hourly load data developed through its Load Research Program in the model. AmerenUE maintains stratified random samples of customers from each rate class, for which it collects hourly load data. Using the hourly loads from the samples, billed sales, and the meter read schedule, the Company uses a statistical technique called ratio analysis to generate hourly class level loads. The class level loads are aggregated, adjusted for transmission and distribution line losses and compared to the system load by hour. The system load is an actual hourly metered value. The class level loads are calibrated so that they aggregate up to match the known system loads by hour. The resultant calibrated loads by rate class are used in the HELM model.

Q. Please discuss the modeling process that occurs in HELM.

A. HELM matches up daily load values (the sum of the 24 hourly values) with daily TDMTs and plots them on a scatter plot graph with TDMT on the horizontal axis and load on the vertical axis. The data points are grouped onto separate scatter plots by seasons and day-types. For example, all of the load-TDMT pairs for weekdays in July may be combined with the weekdays in August to form one group. The groupings are logical. For example, July and August are both hot summer months, so loads in those months are likely to behave similarly and are thus grouped together. On an 80 degree day in July you would expect the load to be similar to an 80 degree day in August because most customers are running their air conditioners consistently during these months. However, on an 80 degree day in May, many customers may not have turned on their air conditioners, so you would typically expect a lower load than you would see in July and August. Using the tools in HELM, all months are combined into appropriate seasonal groupings. Similar groupings are made by day-type. For example, it is logical that for some customer classes, Saturdays and Sundays would have a similar load pattern, so weekends may be grouped together.

Q. Once the months have been grouped into seasons and the appropriate day-types have been grouped together, what is the next step?

A. Then the relationship between load and TDMT is established. The HELM model uses regression models with linear splines to statistically represent the load-temperature relationship. A regression model is a statistical technique that is used to determine the best-fitting line through a group of data points. The term “linear splines” simply means that the line that is fit through the data points may be made up of several distinct line segments that describe different relationships at different temperatures.

Q. Please provide an example of this.

A. Consider a model that is being fit through the load-TDMT pairs for the spring months of April and May. During this time, both heating and cooling equipment may be used by the Company’s customers. The model may determine that when the temperature is between 40 and 50 degrees, a particular customer class’ usage may increase by 100-megawatt hours (“MWhs”) for each degree it gets colder. That means that when the TDMT falls from 42 to 41 degrees, space heating equipment works harder, resulting in 100 MWhs of increased usage. In this case, the HELM model would show a line segment with a slope of -100 through the load-TDMT pairs in that temperature range on our scatter plot. However, this same model may indicate that from 70 to 80 degrees, the same class’ usage increases by 150 MWhs for each degree warmer that it gets. This is because as temperature increased, heating equipment was switched off and air conditioning equipment was switched on. Over the data points on this part of the scatter plot, a line segment with a slope of 150 will be shown. The model establishes across all relevant temperature ranges what is expected to happen to customer loads as the temperature changes.

Q. How are these models used to normalize customer loads?

A. For each day, actual and normal TDMTs have been paired based on the normal weather calculations described above. For a given day, assume that the actual TDMT was 74 degrees and normal is 78 degrees. We will look to the statistical relationships developed in HELM, which may indicate that in this temperature range, each additional degree causes usage to increase by 100 MWhs. So in order to normalize load we will take the number of degrees that the actual temperature deviated from normal (78 degree normal - 74 degree actual = 4 degree adjustment from actual to normal) and multiply it by the usage per degree described by the model (4 degrees x 100 MWhs/degree = 400 MWhs). On that day, normal usage is 400 MWhs higher than the actual usage was.

V. NORMALIZING BILLED AND CALENDAR SALES

Q. Once you have normalized the daily loads that you developed in your load research process, how does this translate into normal sales for billing months?

A. The Company's billings for a given month do not necessarily represent all of the energy used within the calendar days of that month. This is because the Company's customers have their meters read in 21 groups (or cycles) each month according to a published schedule. So an August bill for one customer may be based on the period July 14 through August 13, while for another customer the August bill may include usage from July 26 through August 26. Groups of customers that have their meters read on the same date are referred to as sharing a billing cycle. In the weather normalization process, the Company is normalizing each billing cycle independently. We start with billed sales for each billing cycle (group of customers whose meters are read together) for each month. Since we know the dates the meters were read for each billing cycle, it is possible to estimate how much usage occurred on each day. Take for example a hypothetical billing cycle that began on July 14 and ended on August 13. A particular class of customers (e.g., Residential, Small General Service, etc.) may have been billed for 150,000 MWhs of usage in that period by the customers on that billing cycle. We then look at the total estimated class daily usage (from load research) for those dates. We may find that the total class used 3,000,000 MWhs over the dates between July 14 and August 13. Perhaps the total class usage on July 14^{th} was 100,000 MWhs. Therefore, 3.33% of the class' usage occurred that day (100,000 MWhs of class daily usage / 3,000,000 MWhs of class usage over the billing period). That 3.33% is applied to the sales of the actual billing cycle that is being normalized (150,000 MWhs x 3.33% = 5,000 MWhs on July 14^{th}). Using this methodology the actual billed sales are estimated by day for each billing cycle. Then for each day, the actual billed sales are adjusted based on the daily normalized loads produced by HELM. We know that the total class used 100,000 MWhs on July 14^{th}, and through the HELM process the normal load for July 14^{th} was determined to be 110,000 MWhs. So for that day, normal usage was 110% of actual (110,000 MWhs normal load / 100,000 MWhs actual load = 110%). So the billing cycle that used 5,000 MWhs on July 14^{th} has a normal load for that day of 5,500 MWhs (5,000 MWhs actual usage x 110% normal/actual ratio = 5,500 MWhs normal usage). For every customer class, month, and billing cycle combination, this calculation is done for each day that falls between the applicable meter reading dates. The sum of the daily billed actual sales across all months and billing cycles tie to the Company's billings for the year for the customer class being normalized. The sum of the daily billed normal sales across all months and billing cycles is the normal level of the Company's billings for the year.

Q. How are calendar month actual and normal sales estimated in this process?

A. When going through the calculations of actual and normal billed sales, daily actual and normal sales by billing cycle are developed. These sales are then just aggregated according to the days within a calendar month rather than according to meter read schedules.

VI. DAYS' ADJUSTMENT

Q. What is a days' adjustment?

A. The billed sales in the test year are based on the Company's meter reading schedule. Based on a number of factors, including when holidays occur, the billed usage for the year may include more or fewer days than a normal year. In the test year of April 2007 through March 2008, the average customer was billed for 367.1 days of usage. Test year sales should be adjusted to a level that would be realized if the average customer usage was metered for 365.25 days (one out of every 4 years is a leap year with one extra day, hence the .25 days added to the 365 days in non-leap years).

Q. How is the days' adjustment applied?

A. The ratio of normal days to test year days is calculated (365.25 / 367.10). Each month's sales are then multiplied by this ratio to adjust sales to a normal number of days.

VII. RESULTS

Q. Please describe the results of your weather normalization analysis.

A. At the time of filing the case, the analysis has been completed for the first nine months of the test year. In aggregate, the test year so far has been warmer than normal. Summer loads were normalized down to levels reflective of cooler normal summer temperatures. August 2007 in particular was one of the warmest calendar months on record in the Company's service territory. This month had a significant downward normalization adjustment. The months in the analysis that normally have heating load associated with them (November and December) have been normalized higher to account for the increase in heating sales that would be associated with normal (colder) weather. A table of all of the results by calendar month and by rate class is attached as Schedule SMW-E1. Results by billing month and the days' adjustment referred to earlier are presented in Schedules SMW-E2 and SMW-E3, respectively.

Q. Will you be updating your results in this case?

A. Yes. I will be completing the weather normalization analysis for the last three months of the test year (January – March 2008) when the data is all available. The updated analysis will be provided with the supplemental direct testimony to be filed by the Company.

Q. To whom did you provide your results?

A. I provided my results to AmerenUE witness James R. Pozzo in the Company's Missouri Regulatory Services Department, who used those results to develop normal billing units which were in turn used by AmerenUE witness Wilbon L. Cooper to calculate the proposed rates, by rate class. I also provided my results to Mr. Weiss, the Manager of Regulatory Accounting, who used them to develop certain allocation factors necessary to properly allocate costs among production, distribution and transmission, and to develop normalized net output for use in the production cost modeling used to support the Company's revenue requirement in this case

Q. Does this conclude your direct testimony?

A. Yes, it does.

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 Electric Service Provided to Customers in the Company's Missouri Service Area.	)))))	Case No. ER-2008-____

AFFIDAVIT OF STEVEN M. WILLS

STATE OF MISSOURI)
) **ss**
CITY OF ST. LOUIS)

Steven M. Wills, being first duly sworn on his oath, states:

1. My name is Steven M. Wills. I work in the City of St. Louis, Missouri, and I am employed by Ameren Services Company as Managing Supervisor Quantitative Analytics in the Corporate Planning Department.

2. Attached hereto and made a part hereof for all purposes is my Direct Testimony on behalf of Union Electric Company d/b/a AmerenUE consisting of 16 pages Attachment A and Schedules SMW-E1 through SMW-E3, 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.

Steven M. Wills
Steven M. Wills

Subscribed and sworn to before me this 4th day of April, 2008.

Danielle R. Moskop
Notary Public

My commission expires:

Danielle R. Moskop
Notary Public - Notary Seal
STATE OF MISSOURI
St. Louis County
My Commission Expires: July 21, 2009
Commission # 05745027

EXECUTIVE SUMMARY

Steven Wills

Managing Supervisor, Quantitative Analytics in the Corporate Planning Department for Ameren Services Company

* * * * * * * * * *

The purpose of my testimony is to introduce the methodology employed by AmerenUE ("Company") to weather normalize test year sales. Test year sales are used to develop billing determinants that are used to calculate new rates. Unusually warm or cool weather in a test year can cause the calculated rates to be set at a level that is likely to result in the Company either over-collecting or under-collecting its revenue requirement. Weather normalization is the process of determining the level of test year sales that will set a rate most likely to accurately collect the intended revenue requirement. Additionally, weather normalized sales are needed to perform production cost modeling and to develop variable cost allocation factors.

The process of weather normalizing sales includes developing statistical models that describe the relationship between customer class loads and weather in the test year, calculating normal weather variables to put into this statistical model, and calculating sales by billing month and calendar month based on the modeled results.

The inputs into the statistical model are hourly loads by customer class, daily two-day weighted mean temperature ("TDMT"), and the test year calendar. Hourly loads are obtained from the Company's load research program. TDMTs are calculated from temperature observations at St. Louis International Airport ("Lambert Field"). The purpose of calculating the TDMT is to introduce information about both the current day's and the prior day's temperatures into the model to help explain variation in load. The calendar input uses the actual calendar for the test year with seasons and days included in groups that have similar load characteristics. For example, weekends tend to have similar load patterns, so Saturdays and Sundays may be included in a group.

Once the inputs have been developed and the model has been executed in order to create the statistical relationship between weather and load, that relationship is used to adjust loads for the difference between the actual weather that occurred and normal weather. In order to do this, it is necessary to develop a normalized temperature for each day in the test year. Normal weather is based on temperatures realized over the years from 1971 - 2000. This time period is consistent with the definition of normal weather used by the National Oceanic and Atmospheric Administration ("NOAA") and by both the Company and the Missouri Public Service Commission Staff ("Staff") in recent cases. Historical temperature observations are adjusted to remove bias that has been introduced by changes in the temperature sensing equipment and location of the weather station. These adjustments are based on an agreement between the Company and the Staff first made in Case No. EM-96-149 that was relied upon again most recently by both parties in Case No. ER-2007-0002. The adjusted temperatures are run through a procedure called "rank and average." The rank and average procedure was used by the Company and Staff in Case No. ER-2007-0002. This procedure develops daily normal temperatures that will appropriately produce normal levels of load when run through the statistical models.

The statistical models of load and temperature are used in conjunction with the daily normal temperature data to develop daily normal loads for each rate class that is to be normalized. When this is complete, we have developed actual and normal daily loads. These two series of data are then used to adjust actual customer billing data from the test year to a normal level. The result of this process is normal loads for each billing month and calendar month within the test year.

At the time of preparing the initial case, the first nine months of the test year have been weather normalized. An update will be provided that will include the months of January through March of 2008. The period from April through December 2007 was generally warmer than normal. This was particularly true of August 2007, which was one of the warmest months on record in the Company's service territory. Based on this, the weather normalization analysis has resulted in reductions to test year sales in the summer months, as unusually warm temperatures resulted in increased air conditioning usage. The winter months were generally normalized by increasing test year sales to account for the higher level of space heating related electric sales that would be expected to occur in normal colder months.

Test Year Actual and Normal Calendar Month Sales (kWh)

Ameren UE - Residential Sales - Calendar Month - 2007			
Month	Actual	Normal	Ratio
4	848,505,571	782,045,894	92.2%
5	976,749,485	837,585,042	85.8%
6	1,257,539,078	1,172,212,854	93.2%
7	1,436,915,777	1,491,405,611	103.8%
8	1,777,519,004	1,344,133,890	75.6%
9	1,106,423,561	937,767,917	84.8%
10	884,496,035	807,401,839	91.3%
11	977,036,234	1,016,249,465	104.0%
12	1,392,544,801	1,447,003,466	103.9%

Ameren UE - LGS Sales - Calendar Month - 2007			
Month	Actual	Normal	Ratio
4	636,907,770	625,826,833	98.3%
5	703,457,895	667,993,210	95.0%
6	743,085,998	723,464,139	97.4%
7	792,259,726	798,994,610	100.9%
8	873,307,453	799,974,520	91.6%
9	721,309,850	683,364,607	94.7%
10	697,697,571	662,921,770	95.0%
11	610,241,419	615,925,552	100.9%
12	665,271,301	679,689,297	102.2%

Ameren UE - LPS Sales - Calendar Month - 2007			
Month	Actual	Normal	Ratio
4	333,186,328	333,332,825	100.0%
5	366,909,091	355,967,296	97.0%
6	367,148,900	364,280,975	99.2%
7	390,669,565	393,623,427	100.8%
8	420,798,211	401,390,419	95.4%
9	351,815,978	345,837,209	98.3%
10	390,401,709	383,320,645	98.2%
11	331,657,702	331,002,311	99.8%
12	320,958,995	323,377,366	100.8%

Test Year Actual and Normal Calendar Month Sales (kWh)

Ameren UE - SGS Sales - Calendar Month - 2007			
Month	Actual	Normal	Ratio
4	263,584,702	253,542,442	96.2%
5	300,446,483	274,937,399	91.5%
6	332,640,360	319,843,979	96.2%
7	355,205,514	360,710,712	101.5%
8	406,300,385	354,653,981	87.3%
9	309,944,048	286,916,815	92.6%
10	288,107,015	271,648,052	94.3%
11	268,910,174	273,690,929	101.8%
12	316,168,825	324,933,829	102.8%

Ameren UE - SPS Sales - Calendar Month - 2007			
Month	Actual	Normal	Ratio
4	318,104,304	316,267,744	99.4%
5	351,104,945	341,942,461	97.4%
6	360,350,946	355,079,311	98.5%
7	379,261,954	381,612,178	100.6%
8	400,445,343	378,727,834	94.6%
9	353,600,187	344,703,636	97.5%
10	341,260,701	330,374,139	96.8%
11	303,876,563	304,122,717	100.1%
12	302,082,861	304,351,656	100.8%

Ameren UE - Wholesale Sales - Calendar Month - 2007			
Month	Actual	Normal	Ratio
4	44,257,797	43,357,650	98.0%
5	50,836,680	47,084,926	92.6%
6	56,565,422	54,143,243	95.7%
7	61,650,711	62,916,437	102.1%
8	72,667,650	61,655,539	84.8%
9	54,539,592	50,079,602	91.8%
10	48,625,480	45,608,495	93.8%
11	46,176,311	46,935,503	101.6%
12	52,675,108	54,106,181	102.7%

Test Year Actual and Normal Billing Month Sales (kWh)

Ameren UE - Residential Sales - Billing Month - 2007			
Month	Actual	Normal	Ratio
4	878,693,135	898,981,661	102.3%
5	863,522,942	781,988,828	90.6%
6	1,070,855,731	946,315,797	88.4%
7	1,368,012,104	1,346,743,403	98.4%
8	1,545,815,252	1,410,354,861	91.2%
9	1,491,643,670	1,161,509,835	77.9%
10	1,026,645,871	857,498,678	83.5%
11	850,921,169	843,214,355	99.1%
12	1,182,161,852	1,231,840,180	104.2%

Ameren UE - LGS Sales - Billing Month - 2007			
Month	Actual	Normal	Ratio
4	643,561,725	650,834,833	101.1%
5	642,246,764	624,658,861	97.3%
6	706,220,585	675,248,266	95.6%
7	769,610,924	761,719,921	99.0%
8	793,091,532	772,585,900	97.4%
9	814,180,450	751,788,973	92.3%
10	719,752,755	671,847,187	93.3%
11	638,538,643	627,627,689	98.3%
12	661,172,350	670,659,445	101.4%

Ameren UE - LPS Sales - Billing Month - 2007			
Month	Actual	Normal	Ratio
4	332,359,689	324,926,093	97.8%
5	343,036,990	340,638,982	99.3%
6	365,922,637	356,442,300	97.4%
7	370,007,249	368,352,021	99.6%
8	389,797,027	388,793,661	99.7%
9	408,796,271	391,612,511	95.8%
10	361,451,172	354,666,098	98.1%
11	369,840,193	364,454,528	98.5%
12	337,337,768	337,465,530	100.0%

Test Year Actual and Normal Billing Month Sales (kWh)

Ameren UE - SGS Sales - Billing Month - 2007			
Month	Actual	Normal	Ratio
4	270,880,433	268,475,237	99.1%
5	274,187,016	259,696,682	94.7%
6	307,055,379	286,019,970	93.1%
7	345,962,411	341,281,213	98.6%
8	367,660,870	352,086,439	95.8%
9	362,173,825	320,897,313	88.6%
10	309,403,192	283,330,400	91.6%
11	265,823,477	261,225,128	98.3%
12	297,968,770	304,889,345	102.3%

Ameren UE - SPS Sales - Billing Month - 2007			
Month	Actual	Normal	Ratio
4	325,338,256	319,191,199	98.1%
5	330,810,333	325,812,769	98.5%
6	340,461,179	333,119,261	97.8%
7	376,669,190	374,180,586	99.3%
8	374,974,147	369,433,395	98.5%
9	385,191,428	367,291,078	95.4%
10	351,012,440	339,328,506	96.7%
11	317,069,090	311,889,638	98.4%
12	323,670,165	324,712,836	100.3%

Ameren UE - Wholesale Sales - Billing Month - 2007			
Month	Actual	Normal	Ratio
4	49,068,097	51,070,246	104.1%
5	43,978,410	43,058,548	97.9%
6	51,344,937	47,631,476	92.8%
7	58,853,523	56,665,897	96.3%
8	61,716,031	62,325,868	101.0%
9	77,891,460	66,898,683	85.9%
10	48,233,074	44,168,654	91.6%
11	47,865,510	45,406,142	94.9%
12	49,104,082	49,833,238	101.5%

Test Year Days' Adjustment

Test Year Days Adjustment - Billing Month				
Year	Month	Avg. Billing Days	Normal Billing Days	Days Adjustment
2007	4	30.33	30.18	99.497%
2007	5	29.81	29.66	99.497%
2007	6	30.86	30.70	99.497%
2007	7	30.43	30.28	99.497%
2007	8	29.71	29.56	99.497%
2007	9	30.52	30.37	99.497%
2007	10	29.71	29.56	99.497%
2007	11	30.10	29.94	99.497%
2007	12	31.71	31.55	99.497%
2008	1	33.62	33.45	99.497%
2008	2	30.57	30.42	99.497%
2008	3	29.71	29.56	99.497%
Annual		367.10	365.25	99.497%

Test Year Days Adjustment - Calendar Month				
Year	Month	Calendar Days	Normal Calendar Days	Days Adjustment
2007	4	30.00	30.00	100.000%
2007	5	31.00	31.00	100.000%
2007	6	30.00	30.00	100.000%
2007	7	31.00	31.00	100.000%
2007	8	31.00	31.00	100.000%
2007	9	30.00	30.00	100.000%
2007	10	31.00	31.00	100.000%
2007	11	30.00	30.00	100.000%
2007	12	31.00	31.00	100.000%
2008	1	31.00	31.00	100.000%
2008	2	29.00	28.25	97.414%
2008	3	31.00	31.00	100.000%
Annual		366.00	365.25	99.795%