

Direct Testimony and Schedules
Jannell E. Marks

Before the South Dakota Public Utilities Commission
State of South Dakota

In the Matter of the Application of Northern States Power Company,
a Minnesota corporation
for Authority to Increase Rates for Electric Utility Service in South Dakota

Docket No. EL09-____
Exhibit____(JEM-1)

Sales Forecast

June 30, 2009

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1 **I. INTRODUCTION AND QUALIFICATIONS**

2
3 Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

4 A. My name is Jannell E. Marks. My business address is 550 15th Street, Denver,
5 Colorado 80202.

6
7 Q. BY WHOM ARE YOU EMPLOYED AND WHAT IS YOUR POSITION?

8 A. I am the Director of the Sales, Energy and Demand Forecasting Department
9 for Xcel Energy Services Inc. (“XES”), which is the service company
10 subsidiary of Xcel Energy Inc. (“XEI”).

11
12 Q. PLEASE SUMMARIZE YOUR QUALIFICATIONS AND EXPERIENCE.

13 A. I graduated from Colorado State University with a Bachelor of Science degree
14 in statistics. I began my employment with Public Service Company of
15 Colorado (“PSCo”) in 1982 in the Economics and Forecasting Department,
16 and in August 2000, following the merger of New Centuries Energy Inc.
17 (“NCE”) and Northern States Power Company (“NSP”), I assumed the
18 position of Manager, Economics and Energy Forecasting with XES. I was
19 promoted to my current position with XES in February 2007. My resume is
20 included as Exhibit___(JEM-1), Schedule 1.

21
22 Q. FOR WHOM ARE YOU TESTIFYING?

23 A. I am testifying on behalf of Northern States Power Company, a Minnesota
24 corporation (“Xcel Energy” or the “Company”), operating in South Dakota.

25
26 Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

1 A. I will provide the 2008 test year sales as adjusted to reflect normal weather and
2 unbilled sales. I also sponsor the Company's forecasts of sales and customers
3 for the 2009 and 2010 years. Because these forecasts project a reduction in
4 sales in 2009 with some recovery in 2010, the Company believes that the 2008
5 actual data, weather normalized and corrected for unbilled sales, is a
6 reasonable basis upon which to set rates in this proceeding. I recommend
7 that the South Dakota Public Utilities Commission ("Commission") rely on
8 these forecasts as evidence of the reasonableness of using adjusted 2008 actual
9 sales and customer counts for setting rates in this proceeding. In support of
10 my forecasts, I first describe the historical customer and megawatt hour
11 ("MWh") sales trends for Xcel Energy's South Dakota service territory. Then
12 I present details of the methods I used to develop the electric MWh sales and
13 customer forecast and the results.

14
15 Q. ARE THERE INDUSTRY TERMS YOU PLAN TO USE IN YOUR TESTIMONY?

16 A. Yes. The definitions of terms that are included in my testimony are provided
17 in Exhibit____(JEM-1), Schedule 2.

18

19 **II. 2008 TEST YEAR CUSTOMER AND SALES DATA**

20

21 Q. SINCE THE 2008 TEST YEAR IS A FULLY HISTORICAL TEST YEAR, IS IT
22 NECESSARY TO MAKE ANY ADJUSTMENTS TO THAT DATA FOR RATEMAKING
23 PURPOSES?

24 A. Yes. We used actual customer counts from the actual 2008 year for the 2008
25 Test Year. The 2008 actual sales data needs to be weather normalized and it
26 needs to be adjusted for unbilled sales. I describe each of these adjustments in
27 the following sections of my testimony.

1 Q. WHAT ARE THE 2008 ADJUSTED SALES AND CUSTOMER COUNTS USED FOR TEST
2 YEAR PURPOSES?

3 A. The adjusted sales and customer counts for 2008 are presented as
4 Exhibit___(JEM-1), Schedule 3.

5

6 **A. Weather Normalization**

7

8 Q. HOW DID XCEL ENERGY ADJUST ITS TEST YEAR SALES FOR THE INFLUENCE OF
9 WEATHER ON SALES?

10 A. As discussed in more detail later in my testimony, the Company develops
11 linear regression models to forecast sales for the Residential without Space
12 Heating, Residential with Space Heating, and Small Commercial and Industrial
13 classes. These linear regression models include weather, as measured in terms
14 of heating degree days and temperature humidity index (“THI”), as an
15 explanatory variable. For each of these classes, sales are not weather adjusted
16 prior to developing the respective statistical models. In this way, the historical
17 weather impact on historical consumption for each class can be modeled
18 through the respective coefficients for the heating degree day and THI
19 variables included in each class’ model. Test year sales were then weather
20 adjusted using the weather response coefficients from the linear regression
21 models and “normal” heating degree days and THI, which are based on the
22 20-year moving average of historical heating degree days and THI.

23

24 For the Large Commercial and Industrial and Public Street and Highway
25 Lighting classes, test year volumes have not been weather normalized. These
26 customers’ use of electricity is influenced by factors other than weather (for
27 example, hours of daylight). As a result, the weather impact due to deviation
28 from normal weather is indistinguishable from other variables.

1 Q. WHAT WAS XCEL ENERGY'S MEASURE OF WEATHER, AND WHAT WAS THE
2 SOURCE?

3 A. The measure of weather used was heating degree days and THI, using a 65-
4 degree temperature base. This information was obtained from the National
5 Oceanic and Atmospheric Administration ("NOAA") and measured at the
6 Sioux Falls weather station.

7

8 Q. IS IT APPROPRIATE TO USE THE SIOUX FALLS WEATHER STATION TO
9 REPRESENT XCEL ENERGY'S SOUTH DAKOTA SERVICE TERRITORY?

10 A. Yes, it is. The majority of Xcel Energy's South Dakota electric customers (94
11 percent) reside within the Sioux Falls metropolitan area.

12

13 The coefficients for the heating degree day and THI variables included in each
14 class' model were determined based on the historical relationship between
15 sales throughout Xcel Energy's South Dakota service territory and Sioux Falls
16 weather. Therefore, the coefficients accurately reflect the distribution of
17 customers geographically within the South Dakota service territory. Since this
18 geographic distribution is not expected to change during the test year, it is
19 appropriate to use this historical relationship and Sioux Falls weather.

20

21 Q. DID THE WEATHER REFLECT THE SAME BILLING DAYS AS THE SALES DATA?

22 A. Yes. The heating degree days and THI were weighted by the number of times
23 a particular day was included in a particular billing month. These weighted
24 heating degree days and THI were divided by the total billing cycle days to
25 arrive at average daily heating degree days and THI for a billing month.

26

27 Q. HOW WAS NORMAL WEATHER DETERMINED?

1 A. Normal daily weather was calculated based on the average of twenty years of
2 historical heating degree days and THI. These normal heating degree days and
3 THI were related to the forecasted billing month in the same manner as were
4 the actual heating degree days and THI.

5

6 Q. WHAT IS THE SOURCE OF WEATHER DATA?

7 A. As I explained above, the measure of weather used was heating degree days
8 and THI. Eight temperature readings per day were obtained, and the average
9 daily temperature was determined by averaging the eight temperature readings.
10 Heating degree days were calculated for each day by subtracting the average
11 daily temperature from 65 degrees Fahrenheit. For example, if the average
12 daily temperature was 45 degrees Fahrenheit, then 65 minus 45 or 20 heating
13 degree days were calculated for that day. If the average daily temperature was
14 greater than 65 degrees Fahrenheit, then that day recorded zero heating degree
15 days. The normal daily heating degree days used to weather normalize test
16 year sales were calculated by averaging 20 years of daily heating degree days
17 using data from 1988 to 2007.

18

19 THI were calculated for each day using the formula:

20

$$21 \quad \text{THI} = 17.5 + (0.55 * \text{Dry Bulb}) + (0.2 * \text{Dew Point})$$

22

23 The NOAA commonly uses this formula, and the dew point data was based
24 on the same eight readings of temperature discussed above.

25

26 **B. Unbilled Sales**

27 Q. CAN YOU EXPLAIN THE TERM “UNBILLED SALES”?

1 A. Yes. Xcel Energy reads electric meters each working day according to a
2 meter-reading schedule based on 21 billing cycles per billing month. Meters
3 read early in the month mostly reflect consumption that occurred during the
4 previous month. Meters read late in the month mostly reflect consumption
5 that occurred during the current month. The “billing month” sales for the
6 current month reflect consumption that occurred in both the previous month
7 and the current month. Thus, billing month sales lag calendar month sales.
8 Unbilled sales reflect electricity consumed in the current month that are not
9 billed to the customer until the succeeding month.

10

11 Q. WHAT IS THE PURPOSE OF THE UNBILLED SALES ADJUSTMENT?

12 A. The purpose is to align the test year revenues with the relevant test year
13 expenses, which have been reported on a calendar month basis.

14

15 Q. IS XCEL ENERGY REFLECTING UNBILLED REVENUE ON ITS BOOKS FOR
16 ACCOUNTING AND FINANCIAL PURPOSES?

17 A. Yes. Xcel Energy adopted this practice during fiscal year 1992.

18

19 Q. HOW WERE THE ESTIMATED MONTHLY NET UNBILLED SALES VOLUMES
20 DETERMINED?

21 A. Xcel Energy determined its test year monthly net unbilled sales as the
22 difference between the estimated monthly calendar month sales, and actual
23 billing month sales. I describe the process used to estimate calendar month
24 sales later in my testimony. The process to estimate calendar month sales for
25 the test year is the same as the forecast year, except actual billing month sales
26 and actual weather are used rather than projected billing month sales and

1 normal weather. The actual billing month sales were from the Company's
2 billing system.

3
4 **III. THE FORECASTED SALES FOR 2009 AND 2010 SUPPORT USING**
5 **THE 2008 ADJUSTED ACTUAL SALES FOR SETTING RATES.**

6
7 **A. Historical Customer and MWh Sales Trends**

8
9 Q. PLEASE DISCUSS THE RECENT TRENDS IN CUSTOMER GROWTH AND MWH
10 SALES GROWTH.

11 A. The total number of retail electric customers in Xcel Energy's South Dakota
12 service territory increased an average of 1,572 customers per year from 1998
13 through 2008, for an annual growth rate of 2.2 percent per year on average.
14 The largest class of customers is the Residential class, which represents 87
15 percent of total customers and has averaged a growth rate of 2.2 percent or
16 1,354 additions per year during the period from 1998 through 2008.

17
18 After normalizing for weather, Xcel Energy's South Dakota service territory
19 total electric retail sales have increased an average of 3.3 percent per year
20 during the period of 1998 through 2008. Both the Residential sales class and
21 the Commercial and Industrial sales class have averaged growth of 3.3 percent
22 per year during the period of 1998 through 2008. The average annual percent
23 change in customers and MWh sales by customer class during the period of
24 1998 through 2008 is presented in Table 1.

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4

Table 1
1998-2008 Average Percent Change

Customer Class	Number of Customers	Weather Normalized Sales	2008 % of Total Sales
Residential	2.2%	3.3%	33.3%
Commercial & Industrial	2.3%	3.3%	66.2%
Street Lighting	3.1%	3.9%	0.5%
Total Retail	2.2%	3.3%	100.0%

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B. Customer and Sales Forecast

Q. WHAT GEOGRAPHICAL AREA DO THE TEST YEAR SALES REFLECT?

A. My testimony and exhibits reflect electric usage and customers in Xcel Energy's South Dakota service territory.

Q. PLEASE DESCRIBE THE CUSTOMER CATEGORIES INCLUDED IN XCEL ENERGY'S CUSTOMER AND SALES FORECASTS.

A. The following customer classes comprise Xcel Energy's electric customer and sales forecasts:

- *Residential without Space Heating* – residential service for domestic purposes excluding space heating.
- *Residential with Space Heating* – residential service for domestic purposes including space heating.
- *Small Commercial and Industrial* – commercial and industrial service requiring less than 1,000 kilowatts (“kW”) billing demand per month on average per year.

- 1 • *Large Commercial and Industrial* – commercial and industrial service requiring
2 more than 999 kW billing demand per month on average per year.
- 3 • *Public Street and Highway Lighting* – street lighting service available for year-
4 round illumination of public streets, parkways, and highways.

5 While we also have another customer class, *Other Sales to Public Authorities* –
6 public authority service including municipal pumping service and fire and civil
7 defense siren service, there have been no sales in this class since April 2008.
8 Consequently, we did not include possible sales to this class in our forecast.

9
10 Q. HAVE THE DEFINITIONS OF THESE CUSTOMER CLASSES CHANGED DURING THE
11 1998 TO 2008 HISTORICAL SAMPLE PERIOD USED TO DEVELOP THE CUSTOMER
12 AND SALES FORECASTS?

13 A. Yes. Prior to 2001, Xcel Energy’s North operations (consisting of the former
14 NSP operating system) considered a Commercial and Industrial customer
15 “large,” if the customer exceeded a maximum demand of 99 kW at any point
16 in the previous 12-month period. To achieve consistency in reporting among
17 operating companies within XEI, in 2001 that threshold changed to 999 kW.
18 The 999 kW threshold was selected because it follows the Federal Energy
19 Regulatory Commission (“FERC”) suggested standards.

20
21 Q. HOW ARE CUSTOMER AND SALES FORECASTS USED IN THIS PROCEEDING?

22 A. The customer and sales forecasts are used to calculate the following:
23 a) 2010 year revenue under present rates; and
24 b) 2010 year revenue under proposed rates.

25 As I indicated, these forecasts are used to support using the 2008 test year
26 adjusted sales for setting rates.

27

1 **C. Results of the Forecasts**

2 Q. WHAT IS XCEL ENERGY'S FORECAST OF ELECTRIC SALES AND CUSTOMERS FOR
3 THE YEAR ENDING DECEMBER 31, 2010?

4 A. Exhibit___(JEM-1), Schedule 4 summarizes monthly 2010 year MWh sales
5 and number of customers for each customer class.

6
7 Q. HOW DOES THE 2010 YEAR ELECTRIC CUSTOMER GROWTH COMPARE WITH
8 HISTORICAL CUSTOMER GROWTH?

9 A. As I stated earlier, the total number of electric customers in the Xcel Energy
10 South Dakota service territory increased at an average annual rate of 2.2
11 percent from 1998 through 2008, or 1,572 customers per year on average.
12 The total number of electric customers is expected to increase at a 1.7 percent
13 annual growth rate in 2009, adding 1,373 customers, followed by a 1.5%
14 growth rate in 2010, adding 1,201 customers. The lower growth rates of 1.7
15 percent and 1.5 percent compared to the historical average growth rate of 2.2
16 percent reflects both the slowdown in residential housing activity that has
17 occurred so far this year and the projections for continued slow housing-
18 activity growth through 2009 and 2010. I will explain the methodologies used
19 to develop this forecast in the following section of my testimony.

20
21 Q. HOW DOES THE 2009 AND 2010 YEAR ELECTRIC SALES COMPARE WITH 2008
22 WEATHER NORMALIZED ELECTRIC SALES?

23 A. Table 2 provides Xcel Energy's weather normalized retail MWh sales by
24 customer class for 2008, 2009 and 2010, and provides the 2009 and 2010
25 annual growth rates, and includes the average annual growth rate for the 2009
26 through 2010 time period.

1 Total electric retail sales are expected to decrease 0.4 percent during the 2009
2 year compared to weather normalized 2008 electric sales, then increase 1.4%
3 during the 2010 year, for a 0.5% average annual rate of growth over the 2008
4 to 2010 time period. Residential sales are predicted to decrease 1.3 percent in
5 the 2009 year from 2008 sales, then to increase 1.6 percent in 2010 (0.2
6 percent annual average). Commercial and Industrial sales are projected to
7 remain flat in 2009 compared to 2008 (0.0 percent growth), followed by a 1.3
8 percent increase in 2010 (0.6 percent annual average). Street Lighting sales are
9 expected to increase 1.7 percent in 2009 and gain another 2.1 percent in 2010
10 (1.9 percent annual average). This slowdown in total projected retail sales
11 growth of 0.5 percent per year on average as compared to the historical
12 average growth rate of 3.3 percent is due to the current and projected weak
13 economy. I will explain the methodologies used to develop this forecast in the
14 following section of my testimony.

15 **Table 2**

16 **Weather Normalized Sales by Class (MWh)**

17

18

Customer Class	2008 Sales	2009 Sales	2009 % Change	2010 Sales	2010 % Change	Average Annual % Change
Residential	651,413	642,835	-1.3%	653,385	1.6%	0.2%
Total Commercial & Industrial	1,296,990	1,296,872	0.0%	1,313,709	1.3%	0.6%
Street Lighting	10,555	10,735	1.7%	10,958	2.1%	1.9%
Total Retail	1,958,958	1,950,442	-0.4%	1,978,052	1.4%	0.5%

19

20

1 Q. YOU ARE FORECASTING A SMALL AMOUNT OF GROWTH IN SALES IN 2010
2 COMPARED TO THE 2008 TEST YEAR. IS THIS FORECAST A MORE RELIABLE
3 BASIS UPON WHICH TO SET RATES THAN THE 2008 TEST YEAR ACTUAL SALES?

4
5 A. No. While I have applied the techniques we historically rely upon in our
6 forecasting process, the current economic conditions are unprecedented.
7 Based on known current conditions it would be imprudent to consider our
8 forecast as other than a possible best case scenario and not as a known and
9 measureable change that should be used to replace sales from the required
10 historical test year.

11
12 There is no consensus within the economic community of when the current
13 recession will end much less when it will recover sufficiently to support sales
14 growth, much less sales growth beyond the 2008 actual levels. Clearly, the
15 current economic conditions we are experiencing with lower sales than
16 occurred in 2008 could extend well into 2010, eliminating the forecasted
17 growth in sales. Given the current economic conditions, I support using the
18 actual 2008 sales for ratemaking purposes in this proceeding.

19
20 **D. Overview of Sales and Customer Forecasting Methodology**

21
22 Q. PLEASE DESCRIBE IN GENERAL TERMS THE METHODS USED TO FORECAST
23 SALES AND CUSTOMERS.

24 A. The Sales, Energy and Demand Forecasting Department coordinated the
25 electric sales and customer forecast preparation using a combination of
26 econometric and statistical forecasting techniques and analyses to develop the
27 sales and customer forecasts.

28

1 Q. HOW WERE THE SALES FORECASTS DEVELOPED FOR THE RESIDENTIAL, SMALL
2 COMMERCIAL AND INDUSTRIAL, AND PUBLIC STREET AND HIGHWAY
3 LIGHTING CUSTOMER CLASSES?

4 A. I developed Ordinary Least Squares (“OLS”) multiple regression models as
5 the foundation for the sales forecasts of the Residential without Space
6 Heating, Residential with Space Heating, Small Commercial and Industrial,
7 and Public Street and Highway Lighting customer classes. OLS multiple
8 regression techniques are very well known, proven methods of forecasting and
9 are commonly accepted by forecasters throughout the utility industry. This
10 method provides reliable, accurate projections, accommodates the use of
11 predictor variables, such as economic or demographic indicators and weather,
12 and allows clear interpretation of the model. Xcel Energy has been using
13 these types of OLS regression models since 1991.

14
15 Monthly sales forecasts for these customer classes were developed based on
16 OLS regression models designed to define a statistical relationship between
17 the historical sales and the independent predictor variables, including historical
18 economic and demographic indicators, historical electricity prices, historical
19 weather (expressed in heating degree days and temperature humidity index
20 (“THI”)), and historical number of customers. In all of the models, monthly
21 historical data from January 1998 through December 2008 was used to
22 determine these relationships. The modeled relationships were then simulated
23 over the forecast period by assuming normal weather (expressed in terms of
24 20-year-averaged heating degree days and THI, calculated using data from
25 1989 to 2008) and the projected levels of the independent predictor variables.

26

1 Q. WERE ANY SPECIAL VARIABLES USED TO ADDRESS THE PREVIOUSLY-
2 DISCUSSED COMMERCIAL AND INDUSTRIAL RECLASSIFICATION?

3 A. Yes. As I explained earlier in my testimony, in 2001, Xcel Energy changed the
4 threshold used to determine “small” and “large” Commercial and Industrial
5 customers. In order to maintain the January 1998 to December 2008 sample
6 time period and to account for the reclassification, a step-change binary
7 variable was incorporated in the Small Commercial and Industrial sales
8 regression model. The binary variable equaled “1” in months prior to the
9 reclassification in January 2001, and “0” for all months after the
10 reclassification. Because the reclassification was not completed in one month,
11 an additional binary variable was used in January 2001 to account for
12 additional customer shifts between the Small and the Large Commercial and
13 Industrial classes that occurred in that month.

14

15 Q. WHAT PROCESS WAS USED TO FORECAST SALES IN THE LARGE COMMERCIAL
16 AND INDUSTRIAL CUSTOMER CLASS?

17 A. Usage in the Large Commercial and Industrial customer class often is
18 impacted by factors that are difficult to capture in an OLS multiple regression
19 model. The 2009 monthly sales forecast for this class was developed by
20 averaging the historical billing month sales by month. The 2010 monthly sales
21 forecast was developed by escalating the 2009 monthly billing month sales by
22 0.5 percent. The 0.5 percent is consistent with the weak economic outlook for
23 2010. The billing month sales were then converted to calendar month sales
24 using the process described later in my testimony.

25

26 Q. WHAT PROCESS WAS USED FOR FORECASTING NUMBER OF CUSTOMERS?

1 A. The number of customers by customer class for the classes Residential
2 without Space Heating, Residential with Space Heating, Small Commercial and
3 Industrial, and Public Street and Highway Lighting is forecasted using
4 demographic data for South Dakota in OLS regression models and analysis of
5 historical growth trends. The customer forecast for the Large Commercial
6 and Industrial customer class was developed by holding constant the
7 December 2008 number of customers.

8
9 **E. Statistically Modeled Forecasts**

10
11 Q. PLEASE DESCRIBE THE REGRESSION MODELS AND ASSOCIATED ANALYSIS USED
12 IN XCEL ENERGY'S STATISTICAL PROJECTIONS OF SALES AND CUSTOMERS.

13 A. The regression models and associated analysis used in Xcel Energy's statistical
14 projections of sales are provided in Exhibit___(JEM-1), Schedule 5, and the
15 regression models and associated analysis used in Xcel Energy's statistical
16 projections of customers are provided in Exhibit___(JEM-1), Schedule 6.
17 These schedules include, by customer class, the models with their summary
18 statistics and output and descriptions for each variable included in the model.

19
20 Q. WHAT TECHNIQUES DID XCEL ENERGY EMPLOY TO EVALUATE THE
21 PLAUSIBILITY OF ITS QUANTITATIVE FORECASTING MODELS AND SALES
22 PROJECTIONS?

23 A. There are a number of quantitative and qualitative validity tests that are
24 applicable to OLS multiple regression analysis.

25
26 The coefficient of determination ("R-squared") test statistic is a measure of
27 the quality of the model's fit to the historical data. It represents the

1 proportion of the variation of the historical sales and customers around their
2 mean value that can be attributed to the functional relationship between the
3 historical data series and the explanatory variables included in the model. If
4 the R-squared statistic is high, the model is explaining a high degree of the
5 historical sales and customers variability. The regression models used to
6 develop the forecasts demonstrate very high R-squared statistics, ranging
7 between 97.6 percent and 99.9 percent.

8
9 The t-statistics of the variables indicate the degree of correlation between that
10 variable's data series and the sales and customer data series being modeled.
11 The t-statistic is a measure of the statistical significance of each variable's
12 individual contribution to the prediction model. Generally, the absolute value
13 of each t-statistic should be greater than 2.0 to be considered statistically
14 significant at the 95 percent confidence level. This criterion was applied to the
15 regression models used to develop the sales and customer forecast. The final
16 regression models used to develop the forecast tested satisfactorily under this
17 standard. In the Residential without Space Heating sales model, the t-statistics
18 for the May weather variable was less than 2.0, but it was still significant at the
19 90 percent confidence level and the variable was included in the model to
20 account for weather variability that occurs in the month of May. In the
21 Residential without Space Heating customer model, the t-statistic for a binary
22 variable that accounts for the change in billing systems in 2005 was less than
23 2.0, but it also was significant at the 90 percent confidence level and the
24 variable was included in the model to improve the model's explanatory power.

25
26 Each model was inspected for the presence of first-order autocorrelation, as
27 measured by the Durbin-Watson ("DW") test statistic. Autocorrelation refers

1 to the correlation of the model's error terms for different time periods. For
2 example, an overestimate in one period is likely to lead to an overestimate in
3 the succeeding period, and vice versa, under the presence of first-order
4 autocorrelation. Thus, when forecasting with an OLS regression model,
5 absence of autocorrelation between the residual errors is very important. The
6 DW test statistic ranges between 0 and 4 and provides a measure to test for
7 autocorrelation. In the absence of first-order autocorrelation, the DW test
8 statistic equals 2.0. The final regression models used to develop the sales
9 forecast tested satisfactorily for the absence of first-order autocorrelation, as
10 measured by the DW test statistic.

11
12 Graphical inspection of each model's error terms (*i.e.* actual less predicted) was
13 used to verify that the models were not misspecified, and that statistical
14 assumptions pertaining to constant variance among the residual terms and
15 their random distribution with respect to the predictor variables were not
16 violated. Analysis of each model's residuals indicated that the residuals were
17 homoscedastic (constant variance) and randomly distributed, indicating that
18 the OLS linear regression modeling technique was an appropriate selection for
19 each customer class' sales and customer counts that were statistically modeled.

20
21 The statistically modeled forecasts for each customer class have been reviewed
22 for reasonableness as compared to the respective monthly history for that
23 class. Graphical inspection reveals that the patterns of the forecast fit well
24 with the respective historical patterns for each customer class. The annual
25 total forecast sales and customer counts have been compared to their
26 respective historical trends for consistency.

27

1 Q. HOW ACCURATE HAVE XCEL ENERGY'S SALES AND CUSTOMER FORECASTS
2 BEEN HISTORICALLY?

3 A. On average, the historical forecasts of sales have been within 2.0 percent of
4 actual levels over the last three years after adjusting for weather, while the
5 historical forecasts of number of customers have been within 1.2 percent of
6 actual levels.

7

8 Q. DO YOU EXPECT SIMILAR FORECAST ACCURACY FOR 2010 IN LIGHT OF THE
9 CURRENT VOLATILITY IN ECONOMIC CONDITIONS?

10 A. I believe that the 2010 forecast does present some unique challenges, given
11 the economic volatility we are currently experiencing. While the Company's
12 models have historically been quite accurate, no model can completely
13 overcome impacts of economic uncertainty that exist in the current climate.
14 Thus, while the forecast for 2010 is the best available, given the information
15 currently in my possession, it is certainly subject to significant uncertainty,
16 given the volatile economic conditions we are currently experiencing.

17

18 **F. Data Preparation**

19

20 Q. PLEASE DESCRIBE THE DATA AND DATA SOURCES XCEL ENERGY USED TO
21 DEVELOP THE SALES AND CUSTOMER FORECASTS.

22 A. Historical billing month sales and number of customers were obtained from
23 Xcel Energy's billing system reports. The forecasting process relied on
24 historical sales and customers from January 1998 through December 2008.

25

26 Q. WHAT IS THE SOURCE OF THE COMPANY'S PRE-FEBRUARY 2005 SALES
27 INFORMATION?

1 A. All of the pre-February 2005 billing data is from Xcel Energy's legacy billing
2 system ("CSS").

3

4 Q. WHAT IS THE SOURCE OF THE COMPANY'S POST-FEBRUARY 2005 SALES
5 INFORMATION?

6 A. In February 2005, the Company converted from CSS to the CRS billing
7 system. Most 2005 data will be from CRS. The definition of a billing month
8 is different under CRS from the definition of a billing month under CSS.
9 Consequently, the data presented by the post-February 2005 CRS monthly
10 billed sales will not be entirely consistent with the data presented by CSS prior
11 to 2005. However, the definitional differences have been addressed by
12 calculating both billing month weather and billing cycle days using the same
13 billing cycle information as the billing month sales.

14

15 Q. COULD YOU PLEASE EXPLAIN OTHER AREAS OF DIFFERENCE?

16 A. Yes. With the conversion from CSS to CRS, the number of customers in
17 2005 appears lower than it would have been under CSS. Analysis conducted
18 prior to system conversion indicated that CRS would report fewer customers
19 than CSS just based on tests of the change in the definition of active services.
20 These resulted from small definitional changes in what constitutes an active
21 services account needed to bring uniformity between the former NCE system
22 and the former NSP system. However, these customer-count definitional
23 changes did not impact the amount of sales billed to customers.
24 Exhibit___(JEM-1), Schedule 7, provides a detailed comparison of definitional
25 changes.

26

1 Q. DID YOU MAKE ANY ADJUSTMENT TO THE CUSTOMER COUNTS AS A RESULT OF
2 THESE CHANGES?

3 A. No, I did not adjust the customer counts. However, I did use binary variables
4 in the Residential without Space Heating and Small Commercial and Industrial
5 customer regression models to account for these definitional changes. The
6 use of the binary variable in the regression models provided a better statistical
7 fit to the historical data.

8

9 Q. WHAT WAS YOUR SOURCE OF ECONOMIC AND DEMOGRAPHIC DATA?

10 A. The historical and forecasted economic, and demographic variables were
11 obtained from Global Insight, Inc., a respected economic-forecasting firm
12 frequently relied on by forecasting professionals. These variables include
13 population, households, employment, personal income, and Gross State
14 Product, for the state of South Dakota. This information is used to determine
15 the historical relationship between customers and sales, and economic and
16 demographic measures.

17

18 **G. Calendar Month Sales Derivation**

19

20 Q. HOW WERE THE ESTIMATED MONTHLY CALENDAR MONTH SALES
21 DETERMINED?

22 A. For the Residential without Space Heating, Residential with Space Heating,
23 and Small Commercial and Industrial classes, Xcel Energy calculated the
24 projected calendar month sales based on the projected billing month sales.
25 The calendar month sales were calculated in terms of the sales load
26 component that is not associated with weather (“base load”), and the sales
27 load component that is influenced by weather (“total weather load”). The
28 weather was measured in terms of normal heating degree days and THI, as

1 described above. The base load sales and the total weather sales components
2 were calculated for each class. The two components were then combined to
3 provide the total calendar month volumes.

4
5 The calendar month base load component was calculated as follows:

6
7 *Step 1* The billing month total weather load was calculated. This was
8 accomplished by multiplying the billing month sales weather
9 normalization regression coefficients (defined in terms of billing
10 month heating degree days, THI and number of customers), times
11 billing month normal heating degree days and THI, times the
12 projected customers.

13 *Step 2* The billing month base load was calculated by taking the difference
14 between the projected total billing month sales and the billing month
15 total weather load (as calculated in Step 1).

16 *Step 3* The billing month base load sales per billing day was determined by
17 dividing the billing month base load sales (from Step 2) by the average
18 number of billing days per billing month.

19 *Step 4* The calendar month base load sales were then calculated by
20 multiplying the billing month base load sales per billing day (from
21 Step 3) times the number of days in the calendar month.

22
23 The calendar month total weather load component was calculated the same
24 way the billing month total weather load was calculated (as described in Step 1
25 above). However, the calculation was performed by substituting the calendar
26 month sales weather normalization regression coefficient (defined in terms of
27 calendar month heating degree days, THI and number of customers) and the
28 calendar month normal heating degree days and THI.

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The calendar month total sales were calculated by combining the calendar month base load and calendar month total weather load components.

For the Large Commercial and Industrial class, Xcel Energy calculated the calendar month sales simply based on the projected billing month sales in the same manner as detailed for Residential with Space Heating, Residential without Space Heating, and Small Commercial and Industrial classes. However, for the Large Commercial and Industrial and Public Authority classes, there are no total weather load sales. The 2010 year calendar-month total sales for this class were calculated only in terms of their base load, where the billing month base load equaled the projected billing month sales.

The Public Street and Highway Lighting class is billed on a calendar month basis. Therefore, for this class, the calendar month sales equal the billing month sales.

IV. CONCLUSION

- Q. CAN YOU PLEASE SUMMARIZE YOUR DIRECT TESTIMONY?
- A. The historical 2008 test year sales have been properly weather normalized and adjusted to reflect unbilled sales. We compared those results to the forecast of customers and sales for 2009 and 2010. Those forecasts reflect a loss of sales in 2009 and a small level of growth in 2010. These forecasts reflect the current and projected weak economic conditions. I believe these forecasts provide additional support for using adjusted 2008 sales data for setting rates.

1 Q. PLEASE SUMMARIZE YOUR RECOMMENDATIONS FOR THE COMMISSION TO
2 CONSIDER.

3 A. I recommend that the Commission adopt my 2008 adjusted sales and
4 customers counts, as reflected in Exhibit__(JEM-1), Schedule 3 for the
5 purpose of determining the revenue requirement and final rates in this
6 proceeding.

7

8 Q. DOES THIS CONCLUDE YOUR TESTIMONY?

9 A. Yes, it does.

Resume

Jannell E. Marks
Director, Sales, Energy and Demand Forecasting
550 15th Street, Denver, Colorado 80202

February 2007 – Present

Director, Sales, Energy and Demand Forecasting

Responsible for the development of forecasted sales data and economic conditions for Xcel Energy's operating companies, and the presentation of this information to Xcel Energy's senior management, other Xcel departments, and externally to various regulatory and reporting agencies. Also responsible for developing and implementing forecasting, planning, and load analysis studies for regulatory proceedings. Testified on forecasting issues before the Colorado Public Utilities Commission, the Minnesota Public Utilities Commission, and the North Dakota Public Service Commission.

August 2000 – February 2007

Manager, Energy Forecasting, Xcel Energy

Responsible for the development and presentation of forecasted data for Xcel Energy's operating companies. Also responsible for reporting historical and statistical information to various regulatory agencies and others. Testified on forecasting issues before the Public Utility Commission of Texas, the Colorado Public Utilities Commission, and the Minnesota Public Utilities Commission.

May 1997 – August 2000

Manager, Demand, Energy and Customer Forecasts, New Century Energies, Inc.

Responsible for developing demand, energy, and customer forecasts for New Century Energies, Inc.'s operating companies. Also directed the preparation of statistical reporting for regulatory agencies and others regarding historical and forecasted reports. Testified on forecasting issues before the Public Utility Commission of Texas and the Colorado Public Utilities Commission.

1991-1997

Senior Research Analyst, Public Service Company of Colorado

Responsible for developing the customer and sales forecasts for Public Service Company of Colorado and the economic, customer, sales and demand forecasts for Cheyenne Light, Fuel and Power Company.

1982-1991

Research Analyst, Public Service Company of Colorado

Education

Colorado State University – Bachelor of Science: Statistics

1982

Definitions of Terms

Base Load - Component of sales not associated with weather.

Billing Cycle Days - Based on the meter reading schedule for the 21 billing cycles. For example, there are approximately 651 (21 cycles * 31 days) billing cycle days during a typical billing month period.

Billing Month Sales - Billed sales based on the meter reading schedule for the 21 billing cycles.

Calendar Month Sales - Estimated sales, equal to the billing month sales, adjusted for the estimated unbilled sales of the current calendar month, less the estimated unbilled sales from the previous calendar month.

Commission – South Dakota Public Utilities Commission.

Company – Northern States Power Company d/b/a Xcel Energy.

CRS – Customer Resource System; Xcel Energy’s billing system since February 2005.

CSS – Xcel Energy’s billing system prior to February 2005.

DW Test Statistic - Durbin-Watson test statistic; tests for the presence of first-order autocorrelation. In the absence of first-order autocorrelation, the statistic equals 2.0.

Error Terms - The difference between the actual values of the data series being modeled (customers or sales) and the regression model’s predicted, or “fitted” values for that series. Also called Residual Terms.

FERC – Federal Energy Regulatory Commission.

Heating Degree Days - Measure of weather. Calculated by subtracting the average daily temperature from a base of 65 degrees Fahrenheit.

kW – Kilowatt; measure of electricity demand.

Definitions of Terms (continued)

KWh – Kilowatt-hour; measure of electricity sales.

MWh – Megawatt-hour; measure of electricity sales; one MWh = 1,000 KWh.

NCE – New Centuries Energy Inc.

NOAA – National Oceanic and Atmospheric Administration.

NSP – Northern States Power Company.

OLS Multiple Regression - Ordinary Least Squares Linear Regression employing multiple independent variables to model the variation of the dependent variable about its mean value.

PSCo – Public Service Company of Colorado.

R-squared - Coefficient of determination; measures the quality of the model's fit to the historical data. The higher the R-squared statistic, the better the model is explaining the historical data.

Residual Terms - The difference between the actual values of the data series being modeled (customers or sales) and the regression model's predicted, or "fitted" values for that series. Also called Error Terms.

t-Statistic - Measures the importance of the independent variable to the regression. The higher the absolute value of the t-statistic, the more likely it is that the variable has a relationship to the dependent variable and is making an important contribution to the equation.

Test Year – January 1, 2008-December 31, 2008.

THI – Temperature-humidity index.

Total Weather Load - Component of sales influenced by weather.

Unbilled Sales – Electric consumed in the current month but not billed to customers until the succeeding month.

Definitions of Terms (continued)

XEI – Xcel Energy Inc.

XES – Xcel Energy Services Inc.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Xcel Energy - South Dakota State													
2	2010 Year Sales and Customers by Customer Class													
3														
4	Weather Normalized Calendar Month Sales (MWh)													
5														
6		<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>Jun</u>	<u>Jul</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>	<u>Year</u>
7														
8	Residential without Space Heat	52,112	44,989	45,607	40,840	43,774	56,594	72,307	65,484	48,460	42,321	47,292	58,315	618,093
9	Residential with Space Heat	4,742	4,000	3,529	2,159	2,177	2,069	2,483	2,340	1,834	2,139	2,621	5,197	35,292
10	Small Commercial & Industrial	76,864	75,178	70,957	70,335	79,852	79,805	89,221	86,858	81,159	76,261	80,768	79,193	946,451
11	Large Commercial & Industrial	29,861	26,093	23,426	27,228	32,214	31,423	36,465	34,728	34,313	32,930	29,225	29,352	367,259
12	Public Street & Highway Lightin	1,165	1,026	972	881	792	727	699	744	834	940	1,018	1,160	10,958
13	Other Sales to Public Authority	0	0	0	0	0	0	0	0	0	0	0	0	0
14														
15	Total Retail	164,743	151,287	144,491	141,444	158,809	170,617	201,176	190,154	166,601	154,589	160,923	173,217	1,978,052

20 Xcel Energy - South Dakota State
 21 2010 Year Sales and Customers by Customer Class

22
 23 Number of Customers

		<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>Jun</u>	<u>Jul</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>	<u>Average</u>
24														
25														
26														
27	Residential without Space Heat	68,887	68,968	69,048	69,128	69,208	69,288	69,367	69,447	69,558	69,669	69,781	69,892	69,353
28	Residential with Space Heat	2,936	2,940	2,944	2,947	2,951	2,955	2,959	2,963	2,967	2,970	2,974	2,978	2,957
29	Small Commercial & Industrial	10,383	10,395	10,407	10,419	10,431	10,443	10,455	10,467	10,483	10,500	10,517	10,533	10,453
30	Large Commercial & Industrial	20	20	20	20	20	20	20	20	20	20	20	20	20
31	Public Street & Highway Lightin	370	371	371	371	372	372	372	373	373	374	374	375	372
32	Other Sales to Public Authority	0	0	0	0	0	0	0	0	0	0	0	0	0
33														
34	Total Retail	82,596	82,694	82,790	82,885	82,982	83,078	83,173	83,270	83,401	83,533	83,666	83,798	83,156

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**Xcel Energy South Dakota Residential without Space Heat
 2010 Year MWh Electric Sales**

Variable	Coefficient	StdErr	T-Stat	P-Value	Definition
CONST	-39254.138	3713.453	-10.571	0.00%	Constant term
SD.GSP2000C_SD	1.610	0.091	17.752	0.00%	Real Gross State Product, South Dakota
BillingDayscellnet.BillDaysCellnet21	1079.187	97.616	11.055	0.00%	Billing Days
SDRXWeather.H65_bill_RX_SD_Jan	0.000	0.000	15.477	0.00%	January HDD65 * January customers
SDRXWeather.H65_bill_RX_SD_Feb	0.00009271	0.000	11.971	0.00%	February HDD65 * February customers
SDRXWeather.H65_bill_RX_SD_Mar	0.00007602	0.000	8.702	0.00%	March HDD65 * March customers
SDRXWeather.H65_bill_RX_SD_Apr	0.00005301	0.000	4.195	0.01%	April HDD65 * April customers
SDRXWeather.H65_bill_RX_SD_Nov	0.00004834	0.000	3.223	0.17%	November HDD65 * November customers
SDRXWeather.H65_bill_RX_SD_Dec	0.00010842	0.000	11.546	0.00%	December HDD65 * December customers
SDRXWeather.T65_bill_RX_SD_May	0.00215979	0.001	1.718	8.85%	May THI65 * May customers
SDRXWeather.T65_bill_RX_SD_Jun	0.00295035	0.000	13.447	0.00%	June THI65 * June customers
SDRXWeather.T65_bill_RX_SD_Jul	0.00257740	0.000	39.832	0.00%	July THI65 * July customers
SDRXWeather.T65_bill_RX_SD_Aug	0.00253678	0.000	46.044	0.00%	August THI65 * August customers
SDRXWeather.T65_bill_RX_SD_Sep	0.00268564	0.000	26.776	0.00%	September THI65 * September customers
SDRXWeather.T65_bill_RX_SD_Oct	0.00233726	0.000	5.447	0.00%	October THI65 * October customers
AR(1)	0.46220505	0.090	5.129	0.00%	First order autoregressive term

**Xcel Energy South Dakota Residential without Space Heat
2010 Year MWh Electric Sales**

Regression Statistics

Iterations	9
Adjusted Observations	131
Deg. of Freedom for Error	115
R-Squared	0.984
Adjusted R-Squared	0.982
Durbin-Watson Statistic	2.084
Durbin-H Statistic	#NA
AIC	14.583
BIC	14.934
F-Statistic	479.881
Prob (F-Statistic)	0.0000
Log-Likelihood	-1116.46
Model Sum of Squares	13832681140
Sum of Squared Errors	220993256
Mean Squared Error	1921680.49
Std. Error of Regression	1386.25
Mean Abs. Dev. (MAD)	1038.83
Mean Abs. % Err. (MAPE)	2.37%
Ljung-Box Statistic	28.79
Prob (Ljung-Box)	0.2282

**Xcel Energy South Dakota Residential without Space Heat
2010 Year MWh Electric Sales**

Docket No. EL09-____
Exhibit____(JEM-1)
Schedule 5, Page 3 of 24

Year	Month	Actual	Pred	Resid	%Resid	StdResid
1998	1	37,918.000				
1998	2	31,110.000	31,124.517	-14.517	-0.05%	-0.010
1998	3	30,461.000	30,183.458	277.542	0.91%	0.200
1998	4	29,854.000	29,174.607	679.393	2.28%	0.490
1998	5	29,942.000	28,323.106	1,618.894	5.41%	1.168
1998	6	33,198.000	32,833.198	364.802	1.10%	0.263
1998	7	49,188.000	46,668.260	2,519.740	5.12%	1.818
1998	8	47,170.000	45,078.420	2,091.580	4.43%	1.509
1998	9	46,387.000	46,170.939	216.061	0.47%	0.156
1998	10	33,290.000	31,505.071	1,784.929	5.36%	1.288
1998	11	30,988.000	30,194.559	793.441	2.56%	0.572
1998	12	35,358.000	37,489.972	-2,131.972	-6.03%	-1.538
1999	1	42,056.000	42,673.941	-617.941	-1.47%	-0.446
1999	2	32,681.000	32,440.721	240.279	0.74%	0.173
1999	3	31,164.000	31,409.887	-245.887	-0.79%	-0.177
1999	4	30,312.000	30,594.881	-282.881	-0.93%	-0.204
1999	5	27,659.000	27,364.917	294.083	1.06%	0.212
1999	6	37,683.000	37,535.751	147.249	0.39%	0.106
1999	7	50,046.000	49,655.069	390.931	0.78%	0.282
1999	8	53,829.000	52,254.773	1,574.227	2.92%	1.136
1999	9	41,867.000	44,567.548	-2,700.548	-6.45%	-1.948
1999	10	29,143.000	28,175.007	967.993	3.32%	0.698
1999	11	28,982.000	30,200.208	-1,218.208	-4.20%	-0.879
1999	12	36,316.000	37,499.057	-1,183.057	-3.26%	-0.853
2000	1	42,757.000	42,113.098	643.902	1.51%	0.464
2000	2	34,889.000	35,333.444	-444.444	-1.27%	-0.321
2000	3	31,266.000	32,411.847	-1,145.847	-3.66%	-0.827
2000	4	30,587.000	31,195.568	-608.568	-1.99%	-0.439
2000	5	29,953.000	31,599.287	-1,646.287	-5.50%	-1.188
2000	6	36,535.000	35,553.243	981.757	2.69%	0.708
2000	7	51,396.000	49,729.729	1,666.271	3.24%	1.202
2000	8	53,517.000	51,161.027	2,355.973	4.40%	1.700
2000	9	47,162.000	46,109.577	1,052.423	2.23%	0.759
2000	10	33,622.000	32,572.809	1,049.191	3.12%	0.757
2000	11	33,025.000	33,293.232	-268.232	-0.81%	-0.193
2000	12	40,657.000	42,884.740	-2,227.740	-5.48%	-1.607
2001	1	44,705.000	46,346.460	-1,641.460	-3.67%	-1.184
2001	2	36,342.052	36,617.877	-275.825	-0.76%	-0.199
2001	3	35,519.063	35,313.899	205.164	0.58%	0.148

**Xcel Energy South Dakota Residential without Space Heat
2010 Year MWh Electric Sales**

Docket No. EL09-____
Exhibit____(JEM-1)
Schedule 5, Page 4 of 24

Year	Month	Actual	Pred	Resid	%Resid	StdResid
2001	4	33,890.057	33,263.752	626.305	1.85%	0.452
2001	5	32,945.568	32,304.336	641.232	1.95%	0.463
2001	6	36,841.310	38,021.646	-1,180.336	-3.20%	-0.851
2001	7	54,985.304	56,631.165	-1,645.861	-2.99%	-1.187
2001	8	61,628.700	62,126.158	-497.458	-0.81%	-0.359
2001	9	46,611.875	45,283.653	1,328.222	2.85%	0.958
2001	10	33,155.129	31,716.262	1,438.867	4.34%	1.038
2001	11	32,697.102	33,080.777	-383.675	-1.17%	-0.277
2001	12	39,644.813	39,784.915	-140.102	-0.35%	-0.101
2002	1	44,891.722	45,892.395	-1,000.673	-2.23%	-0.722
2002	2	37,303.717	37,620.361	-316.644	-0.85%	-0.228
2002	3	37,010.243	37,326.566	-316.323	-0.85%	-0.228
2002	4	35,999.123	36,429.371	-430.248	-1.20%	-0.310
2002	5	32,030.272	33,236.633	-1,206.361	-3.77%	-0.870
2002	6	42,012.834	41,223.676	789.158	1.88%	0.569
2002	7	66,986.268	68,674.788	-1,688.520	-2.52%	-1.218
2002	8	60,230.203	59,065.860	1,164.343	1.93%	0.840
2002	9	52,393.013	55,460.703	-3,067.690	-5.86%	-2.213
2002	10	36,344.658	36,358.581	-13.923	-0.04%	-0.010
2002	11	35,497.100	36,093.004	-595.904	-1.68%	-0.430
2002	12	43,306.124	44,558.762	-1,252.638	-2.89%	-0.904
2003	1	46,658.752	47,439.130	-780.378	-1.67%	-0.563
2003	2	40,719.624	40,310.672	408.952	1.00%	0.295
2003	3	38,662.774	38,984.771	-321.997	-0.83%	-0.232
2003	4	34,935.625	35,959.669	-1,024.044	-2.93%	-0.739
2003	5	33,622.572	34,146.231	-523.659	-1.56%	-0.378
2003	6	38,154.891	38,609.135	-454.244	-1.19%	-0.328
2003	7	54,823.425	55,158.960	-335.535	-0.61%	-0.242
2003	8	60,586.622	58,766.443	1,820.179	3.00%	1.313
2003	9	55,018.368	55,230.589	-212.221	-0.39%	-0.153
2003	10	35,037.349	36,029.815	-992.466	-2.83%	-0.716
2003	11	36,394.729	36,101.594	293.135	0.81%	0.211
2003	12	45,449.507	45,974.975	-525.468	-1.16%	-0.379
2004	1	48,471.913	49,300.442	-828.529	-1.71%	-0.598
2004	2	42,758.009	43,008.692	-250.683	-0.59%	-0.181
2004	3	38,267.789	39,047.993	-780.204	-2.04%	-0.563
2004	4	35,668.708	37,451.182	-1,782.474	-5.00%	-1.286
2004	5	35,070.199	35,621.892	-551.693	-1.57%	-0.398
2004	6	41,876.664	41,640.854	235.810	0.56%	0.170
2004	7	51,932.572	50,304.969	1,627.603	3.13%	1.174
2004	8	52,657.203	51,750.376	906.827	1.72%	0.654

**Xcel Energy South Dakota Residential without Space Heat
2010 Year MWh Electric Sales**

Docket No. EL09-____
Exhibit____(JEM-1)
Schedule 5, Page 5 of 24

Year	Month	Actual	Pred	Resid	%Resid	StdResid
2004	9	48,089.003	48,963.510	-874.507	-1.82%	-0.631
2004	10	39,175.966	39,337.149	-161.183	-0.41%	-0.116
2004	11	36,557.718	37,430.823	-873.105	-2.39%	-0.630
2004	12	45,793.526	45,901.326	-107.800	-0.24%	-0.078
2005	1	52,524.398	52,031.607	492.791	0.94%	0.355
2005	2	39,009.819	40,895.079	-1,885.260	-4.83%	-1.360
2005	3	40,503.358	42,016.493	-1,513.135	-3.74%	-1.092
2005	4	39,029.886	38,012.913	1,016.973	2.61%	0.734
2005	5	35,090.345	36,237.678	-1,147.333	-3.27%	-0.828
2005	6	46,553.168	46,081.841	471.327	1.01%	0.340
2005	7	63,049.050	64,160.853	-1,111.803	-1.76%	-0.802
2005	8	72,273.000	70,756.269	1,516.731	2.10%	1.094
2005	9	54,982.076	55,001.631	-19.555	-0.04%	-0.014
2005	10	41,269.826	41,356.840	-87.014	-0.21%	-0.063
2005	11	35,690.830	37,066.410	-1,375.580	-3.85%	-0.992
2005	12	46,789.000	45,694.295	1,094.705	2.34%	0.790
2006	1	50,300.141	51,301.013	-1,000.872	-1.99%	-0.722
2006	2	40,113.081	41,017.860	-904.779	-2.26%	-0.653
2006	3	45,216.621	44,996.024	220.597	0.49%	0.159
2006	4	36,267.201	36,696.697	-429.496	-1.18%	-0.310
2006	5	36,729.299	39,723.494	-2,994.195	-8.15%	-2.160
2006	6	53,923.268	50,885.051	3,038.217	5.63%	2.192
2006	7	60,403.389	58,512.944	1,890.445	3.13%	1.364
2006	8	76,199.844	77,242.782	-1,042.939	-1.37%	-0.752
2006	9	49,092.443	47,378.262	1,714.181	3.49%	1.237
2006	10	40,444.215	41,081.635	-637.420	-1.58%	-0.460
2006	11	39,689.074	38,776.350	912.724	2.30%	0.658
2006	12	44,986.464	44,647.767	338.697	0.75%	0.244
2007	1	57,141.961	54,600.492	2,541.469	4.45%	1.833
2007	2	46,495.860	46,174.398	321.462	0.69%	0.232
2007	3	47,311.431	45,687.087	1,624.344	3.43%	1.172
2007	4	39,249.568	40,951.273	-1,701.705	-4.34%	-1.228
2007	5	42,340.580	41,261.083	1,079.497	2.55%	0.779
2007	6	48,712.663	51,599.360	-2,886.697	-5.93%	-2.082
2007	7	66,967.320	66,047.256	920.064	1.37%	0.664
2007	8	74,203.107	76,952.496	-2,749.389	-3.71%	-1.983
2007	9	55,045.203	52,989.515	2,055.688	3.73%	1.483
2007	10	47,147.444	48,025.886	-878.442	-1.86%	-0.634
2007	11	39,903.334	39,329.775	573.559	1.44%	0.414
2007	12	47,343.419	46,799.116	544.303	1.15%	0.393
2008	1	59,940.604	58,575.287	1,365.317	2.28%	0.985

**Xcel Energy South Dakota Residential without Space Heat
2010 Year MWh Electric Sales**

Docket No. EL09-____
Exhibit____(JEM-1)
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Year	Month	Actual	Pred	Resid	%Resid	StdResid
2008	2	50,573.557	49,047.394	1,526.163	3.02%	1.101
2008	3	45,217.863	45,227.871	-10.008	-0.02%	-0.007
2008	4	45,959.974	45,169.304	790.670	1.72%	0.570
2008	5	38,822.304	39,941.976	-1,119.672	-2.88%	-0.808
2008	6	44,031.942	43,110.481	921.461	2.09%	0.665
2008	7	63,235.672	62,750.838	484.834	0.77%	0.350
2008	8	64,031.691	65,964.600	-1,932.909	-3.02%	-1.394
2008	9	56,998.815	54,223.982	2,774.833	4.87%	2.002
2008	10	44,796.797	45,641.946	-845.149	-1.89%	-0.610
2008	11	37,108.884	36,281.528	827.356	2.23%	0.597
2008	12	56,218.574	52,430.124	3,788.450	6.74%	2.733
2009	1		57,944.362			
2009	2		46,302.816			
2009	3		47,061.724			
2009	4		42,897.059			
2009	5		39,047.806			
2009	6		50,328.968			
2009	7		67,767.340			
2009	8		64,906.224			
2009	9		58,069.317			
2009	10		43,590.689			
2009	11		38,655.578			
2009	12		52,006.178			
2010	1		54,707.939			
2010	2		46,353.758			
2010	3		49,321.762			
2010	4		44,087.613			
2010	5		39,219.529			
2010	6		51,844.823			
2010	7		66,208.488			
2010	8		69,405.140			
2010	9		59,390.876			
2010	10		43,087.278			
2010	11		41,668.491			
2010	12		51,179.423			

**Xcel Energy South Dakota Residential with Space Heat
 2010 Year MWh Electric Sales**

Variable	Coefficient	StdErr	T-Stat	P-Value	Definition
CONST	-1274.408	331.562	-3.844	0.02%	Constant term
SD.CYPNR_SD	45.149	8.004	5.640	0.00%	Real per Capita Personal Income, South Dakota
BillingDayscellnet.BillDaysCellnet21	51.713	8.257	6.263	0.00%	Billing Days
SDRHWeather.H65_bill_RH_SD_Jan	0.00071076	0.000	36.949	0.00%	January HDD65 * January customers
SDRHWeather.H65_bill_RH_SD_Feb	0.00070093	0.000	36.495	0.00%	February HDD65 * February customers
SDRHWeather.H65_bill_RH_SD_Mar	0.00067022	0.000	30.561	0.00%	March HDD65 * March customers
SDRHWeather.H65_bill_RH_SD_Apr	0.00055283	0.000	16.377	0.00%	April HDD65 * April customers
SDRHWeather.H65_bill_RH_SD_May	0.00035010	0.000	5.304	0.00%	May HDD65 * April customers
SDRHWeather.H65_bill_RH_SD_Oct	0.00020644	0.000	2.453	1.57%	October HDD65 * October customers
SDRHWeather.H65_bill_RH_SD_Nov	0.00043849	0.000	11.041	0.00%	November HDD65 * November customers
SDRHWeather.H65_bill_RH_SD_Dec	0.00063289	0.000	27.911	0.00%	December HDD65 * December customers
SDRHWeather.T65_bill_RH_SD_Jun	0.00161019	0.001	2.879	0.48%	June THI65 * June customers
SDRHWeather.T65_bill_RH_SD_Jul	0.00152013	0.000	9.328	0.00%	July THI65 * July customers
SDRHWeather.T65_bill_RH_SD_Aug	0.00154228	0.000	11.191	0.00%	August THI65 * August customers
SDRHWeather.T65_bill_RH_SD_Sep	0.00143990	0.000	5.583	0.00%	September THI65 * September customers
BinaryTrans.Jul08	559.438	112.636	4.967	0.00%	Binary variable July 2008
AR(1)	0.373	0.094	3.954	0.01%	First order autoregressive term

**Xcel Energy South Dakota Residential with Space Heat
2010 Year MWh Electric Sales**

Regression Statistics

Iterations	9
Adjusted Observations	131
Deg. of Freedom for Error	114
R-Squared	0.986
Adjusted R-Squared	0.984
Durbin-Watson Statistic	2.099
Durbin-H Statistic	#NA
AIC	9.575
BIC	9.948
F-Statistic	492.868
Prob (F-Statistic)	0.0000
Log-Likelihood	-789.96
Model Sum of Squares	100655242
Sum of Squared Errors	1455094
Mean Squared Error	12763.98
Std. Error of Regression	112.98
Mean Abs. Dev. (MAD)	81.03
Mean Abs. % Err. (MAPE)	3.31%
Ljung-Box Statistic	31.11
Prob (Ljung-Box)	0.1507

**Xcel Energy South Dakota Residential with Space Heat
2010 Year MWh Electric Sales**

Docket No. EL09-____
Exhibit____(JEM-1)
Schedule 5, Page 9 of 24

Year	Month	Actual	Pred	Resid	%Resid	StdResid
1998	1	3,919.000				
1998	2	3,173.000	3,270.461	-97.461	-3.07%	-0.863
1998	3	3,195.000	3,031.041	163.959	5.13%	1.451
1998	4	2,490.000	2,393.896	96.104	3.86%	0.851
1998	5	1,702.000	1,668.247	33.753	1.98%	0.299
1998	6	1,540.000	1,540.593	-0.593	-0.04%	-0.005
1998	7	1,868.000	1,877.244	-9.244	-0.49%	-0.082
1998	8	1,858.000	1,782.301	75.699	4.07%	0.670
1998	9	1,829.000	1,813.637	15.363	0.84%	0.136
1998	10	1,543.000	1,520.103	22.897	1.48%	0.203
1998	11	2,123.000	2,053.146	69.854	3.29%	0.618
1998	12	2,975.000	3,029.103	-54.103	-1.82%	-0.479
1999	1	4,420.000	4,359.204	60.796	1.38%	0.538
1999	2	3,194.000	3,205.824	-11.824	-0.37%	-0.105
1999	3	3,222.000	2,984.781	237.219	7.36%	2.100
1999	4	2,338.000	2,435.272	-97.272	-4.16%	-0.861
1999	5	1,733.000	1,646.671	86.329	4.98%	0.764
1999	6	1,552.000	1,676.921	-124.921	-8.05%	-1.106
1999	7	1,957.000	1,916.482	40.518	2.07%	0.359
1999	8	2,018.000	2,000.223	17.777	0.88%	0.157
1999	9	1,636.000	1,779.191	-143.191	-8.75%	-1.267
1999	10	1,525.000	1,524.349	0.651	0.04%	0.006
1999	11	1,794.000	1,969.940	-175.940	-9.81%	-1.557
1999	12	2,765.000	2,974.032	-209.032	-7.56%	-1.850
2000	1	4,106.000	3,837.897	268.103	6.53%	2.373
2000	2	3,454.000	3,502.379	-48.379	-1.40%	-0.428
2000	3	2,575.000	2,687.123	-112.123	-4.35%	-0.992
2000	4	2,182.000	2,274.989	-92.989	-4.26%	-0.823
2000	5	1,689.000	1,697.004	-8.004	-0.47%	-0.071
2000	6	1,628.000	1,575.872	52.128	3.20%	0.461
2000	7	1,977.000	1,937.638	39.362	1.99%	0.348
2000	8	2,032.000	1,958.464	73.536	3.62%	0.651
2000	9	1,778.000	1,798.636	-20.636	-1.16%	-0.183
2000	10	1,655.000	1,581.190	73.810	4.46%	0.653
2000	11	2,162.000	2,076.569	85.431	3.95%	0.756
2000	12	4,076.000	3,867.124	208.876	5.12%	1.849
2001	1	4,531.000	4,619.187	-88.187	-1.95%	-0.781
2001	2	4,120.621	3,878.704	241.917	5.87%	2.141
2001	3	3,484.455	3,741.466	-257.011	-7.38%	-2.275

**Xcel Energy South Dakota Residential with Space Heat
2010 Year MWh Electric Sales**

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Year	Month	Actual	Pred	Resid	%Resid	StdResid
2001	4	2,746.481	2,580.335	166.146	6.05%	1.471
2001	5	1,896.568	1,771.970	124.598	6.57%	1.103
2001	6	1,738.127	1,704.273	33.854	1.95%	0.300
2001	7	2,082.238	2,173.649	-91.411	-4.39%	-0.809
2001	8	2,283.100	2,279.205	3.895	0.17%	0.034
2001	9	1,765.990	1,815.582	-49.592	-2.81%	-0.439
2001	10	1,586.863	1,575.635	11.228	0.71%	0.099
2001	11	1,940.657	2,023.469	-82.812	-4.27%	-0.733
2001	12	2,840.265	2,989.967	-149.702	-5.27%	-1.325
2002	1	3,883.979	3,980.315	-96.336	-2.48%	-0.853
2002	2	3,478.283	3,343.734	134.549	3.87%	1.191
2002	3	3,425.145	3,435.259	-10.114	-0.30%	-0.090
2002	4	2,803.874	2,706.467	97.407	3.47%	0.862
2002	5	1,880.390	1,846.625	33.765	1.80%	0.299
2002	6	1,790.840	1,677.091	113.749	6.35%	1.007
2002	7	2,417.370	2,367.702	49.668	2.05%	0.440
2002	8	2,172.222	2,129.791	42.431	1.95%	0.376
2002	9	1,900.933	1,967.913	-66.980	-3.52%	-0.593
2002	10	1,709.620	1,610.945	98.675	5.77%	0.873
2002	11	2,469.443	2,345.219	124.224	5.03%	1.100
2002	12	3,404.852	3,513.976	-109.124	-3.20%	-0.966
2003	1	3,974.813	4,058.525	-83.712	-2.11%	-0.741
2003	2	3,966.196	3,859.941	106.255	2.68%	0.940
2003	3	3,495.769	3,600.041	-104.272	-2.98%	-0.923
2003	4	2,418.675	2,403.504	15.171	0.63%	0.134
2003	5	1,794.251	1,862.758	-68.507	-3.82%	-0.606
2003	6	1,648.342	1,618.950	29.392	1.78%	0.260
2003	7	2,010.305	2,043.972	-33.667	-1.67%	-0.298
2003	8	2,166.766	2,106.884	59.882	2.76%	0.530
2003	9	1,958.437	2,004.684	-46.247	-2.36%	-0.409
2003	10	1,553.564	1,661.915	-108.351	-6.97%	-0.959
2003	11	2,275.997	2,267.591	8.406	0.37%	0.074
2003	12	3,549.926	3,558.303	-8.377	-0.24%	-0.074
2004	1	4,132.704	4,201.851	-69.147	-1.67%	-0.612
2004	2	4,156.457	4,173.010	-16.553	-0.40%	-0.147
2004	3	3,072.871	3,141.150	-68.279	-2.22%	-0.604
2004	4	2,217.124	2,390.862	-173.738	-7.84%	-1.538
2004	5	1,791.979	1,780.396	11.583	0.65%	0.103
2004	6	1,730.500	1,696.452	34.048	1.97%	0.301
2004	7	1,939.255	1,918.177	21.078	1.09%	0.187
2004	8	1,872.396	1,922.019	-49.623	-2.65%	-0.439

**Xcel Energy South Dakota Residential with Space Heat
2010 Year MWh Electric Sales**

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Year	Month	Actual	Pred	Resid	%Resid	StdResid
2004	9	1,800.064	1,823.286	-23.222	-1.29%	-0.206
2004	10	1,640.359	1,663.696	-23.337	-1.42%	-0.207
2004	11	2,007.604	2,158.568	-150.964	-7.52%	-1.336
2004	12	3,264.929	3,340.091	-75.162	-2.30%	-0.665
2005	1	4,508.332	4,499.601	8.731	0.19%	0.077
2005	2	3,181.024	3,427.129	-246.105	-7.74%	-2.178
2005	3	3,346.279	3,375.068	-28.789	-0.86%	-0.255
2005	4	2,463.382	2,410.367	53.015	2.15%	0.469
2005	5	1,641.919	1,897.741	-255.822	-15.58%	-2.264
2005	6	1,794.676	1,760.034	34.642	1.93%	0.307
2005	7	2,140.064	2,170.200	-30.136	-1.41%	-0.267
2005	8	2,419.000	2,440.300	-21.300	-0.88%	-0.189
2005	9	1,882.438	1,945.589	-63.151	-3.35%	-0.559
2005	10	1,598.114	1,648.863	-50.749	-3.18%	-0.449
2005	11	1,848.247	2,082.268	-234.021	-12.66%	-2.071
2005	12	3,348.000	3,396.470	-48.470	-1.45%	-0.429
2006	1	3,786.819	3,878.668	-91.849	-2.43%	-0.813
2006	2	2,990.673	3,159.934	-169.261	-5.66%	-1.498
2006	3	3,535.222	3,527.621	7.601	0.21%	0.067
2006	4	2,244.558	2,244.682	-0.124	-0.01%	-0.001
2006	5	1,899.860	1,928.366	-28.506	-1.50%	-0.252
2006	6	1,895.710	1,899.469	-3.759	-0.20%	-0.033
2006	7	2,069.482	1,988.973	80.509	3.89%	0.713
2006	8	2,637.436	2,563.929	73.507	2.79%	0.651
2006	9	1,920.541	1,769.381	151.161	7.87%	1.338
2006	10	1,765.419	1,883.461	-118.042	-6.69%	-1.045
2006	11	2,425.399	2,328.264	97.135	4.00%	0.860
2006	12	3,157.882	3,263.767	-105.885	-3.35%	-0.937
2007	1	4,370.165	4,305.166	64.999	1.49%	0.575
2007	2	4,238.282	4,270.655	-32.373	-0.76%	-0.287
2007	3	3,824.063	3,753.100	70.963	1.86%	0.628
2007	4	2,497.905	2,602.888	-104.983	-4.20%	-0.929
2007	5	2,060.001	1,927.267	132.734	6.44%	1.175
2007	6	1,915.286	1,969.102	-53.816	-2.81%	-0.476
2007	7	2,313.171	2,330.692	-17.521	-0.76%	-0.155
2007	8	2,463.516	2,628.424	-164.908	-6.69%	-1.460
2007	9	2,067.801	1,854.170	213.631	10.33%	1.891
2007	10	1,960.957	1,960.049	0.908	0.05%	0.008
2007	11	2,189.299	2,280.709	-91.410	-4.18%	-0.809
2007	12	3,483.872	3,520.202	-36.330	-1.04%	-0.322
2008	1	4,973.228	4,964.188	9.040	0.18%	0.080

**Xcel Energy South Dakota Residential with Space Heat
2010 Year MWh Electric Sales**

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Exhibit____(JEM-1)
Schedule 5, Page 12 of 24

Year	Month	Actual	Pred	Resid	%Resid	StdResid
2008	2	4,568.821	4,526.821	42.000	0.92%	0.372
2008	3	4,003.580	3,849.372	154.208	3.85%	1.365
2008	4	3,200.518	3,161.710	38.808	1.21%	0.343
2008	5	2,202.112	2,113.450	88.662	4.03%	0.785
2008	6	1,898.212	1,822.448	75.764	3.99%	0.671
2008	7	2,886.281	2,880.920	5.361	0.19%	0.047
2008	8	2,305.126	2,290.741	14.385	0.62%	0.127
2008	9	2,192.078	2,090.826	101.252	4.62%	0.896
2008	10	2,047.970	1,984.306	63.664	3.11%	0.564
2008	11	2,270.490	2,152.335	118.154	5.20%	1.046
2008	12	4,553.250	4,230.720	322.531	7.08%	2.855
2009	1		5,091.515			
2009	2		4,224.290			
2009	3		4,059.273			
2009	4		2,921.014			
2009	5		2,004.216			
2009	6		1,990.172			
2009	7		2,444.290			
2009	8		2,328.378			
2009	9		2,118.620			
2009	10		1,938.640			
2009	11		2,335.675			
2009	12		4,086.392			
2010	1		4,791.681			
2010	2		4,228.309			
2010	3		4,256.176			
2010	4		2,958.720			
2010	5		1,951.337			
2010	6		1,996.914			
2010	7		2,329.000			
2010	8		2,437.682			
2010	9		2,107.090			
2010	10		1,837.454			
2010	11		2,452.734			
2010	12		3,905.697			

**Xcel Energy South Dakota Small Commercial and Industrial
 2010 Year MWh Electric Sales**

Variable	Coefficient	StdErr	T-Stat	P-Value	Definition
CONST	-86495.389	10224.305	-8.460	0.00%	Constant term
SD.EE_SD	378.133	26.265	14.397	0.00%	Total Employment, South Dakota
SDSmCIWeather.H65_bill_SmCI_SD_JanFebNovDec	0.00057179	0.000	5.870	0.00%	HDD65 * customers; November, December, January, February
SDSmCIWeather.H65_bill_SmCI_SD_MarAprMay	0.00038171	0.000	2.625	0.99%	HDD65 * customers; March, April, May
SDSmCIWeather.T65_bill_SmCI_SD_Jun	0.02218539	0.004	6.077	0.00%	June THI65 * June customers
SDSmCIWeather.T65_bill_SmCI_SD_Jul	0.01011341	0.001	9.335	0.00%	July THI65 * July customers
SDSmCIWeather.T65_bill_SmCI_SD_Aug	0.00993332	0.001	11.044	0.00%	August THI65 * August customers
SDSmCIWeather.T65_bill_SmCI_SD_Sep	0.01370545	0.002	8.520	0.00%	September THI65 * September customers
SDSmCIWeather.T65_bill_SmCI_SD_Oct	0.03795003	0.007	5.643	0.00%	October THI65 * October customers
Binary.CIReclass01Pre	-34235.258	893.917	-38.298	0.00%	Binary variable for 2001 C&I reclassification
Binary2.Jun2005	26591.158	3622.707	7.340	0.00%	Binary variable June 2005
Binary2.Jul2005	19315.073	3708.940	5.208	0.00%	Binary variable July 2005
Binary2.Aug2005	28685.395	3680.594	7.794	0.00%	Binary variable August 2005
Binary2.Nov2005	19447.434	3492.902	5.568	0.00%	Binary variable November 2005
Binary2.Jan2001	17007.554	3554.309	4.785	0.00%	Binary variable January 2001
Binary2.Dec2003	11939.597	3499.651	3.412	0.09%	Binary variable December 2004
Binary2.May2005	9095.611	3498.407	2.600	1.06%	Binary variable May 2005
Binary2.Mar2007	10172.346	3625.339	2.806	0.59%	Binary variable March 2007

**Xcel Energy South Dakota Small Commercial and Industrial
2010 Year MWh Electric Sales**

Regression Statistics

Iterations	1
Adjusted Observations	132
Deg. of Freedom for Error	114
R-Squared	0.979
Adjusted R-Squared	0.976
Durbin-Watson Statistic	1.709
Durbin-H Statistic	#NA
AIC	16.411
BIC	16.805
F-Statistic	315.949
Prob (F-Statistic)	0.0000
Log-Likelihood	-1252.46
Model Sum of Squares	63487962703
Sum of Squared Errors	1347504295
Mean Squared Error	11820213.11
Std. Error of Regression	3438.05
Mean Abs. Dev. (MAD)	2549.44
Mean Abs. % Err. (MAPE)	5.25%
Ljung-Box Statistic	41.73
Prob (Ljung-Box)	0.0138

**Xcel Energy South Dakota Small Commercial and Industrial
 2010 Year MWh Electric Sales**

Year	Month	Actual	Pred	Resid	%Resid	StdResid
1998	1	23,937.000	20,106.893	3,830.107	16.00%	1.114
1998	2	21,965.000	19,284.531	2,680.469	12.20%	0.780
1998	3	21,337.000	17,680.995	3,656.005	17.13%	1.063
1998	4	21,010.000	16,866.799	4,143.201	19.72%	1.205
1998	5	21,699.000	15,757.111	5,941.889	27.38%	1.728
1998	6	22,969.000	19,920.440	3,048.560	13.27%	0.887
1998	7	25,710.000	25,763.070	-53.070	-0.21%	-0.015
1998	8	26,239.000	25,374.083	864.917	3.30%	0.252
1998	9	25,892.000	28,227.046	-2,335.046	-9.02%	-0.679
1998	10	22,501.000	24,242.779	-1,741.779	-7.74%	-0.507
1998	11	21,603.000	19,473.710	2,129.290	9.86%	0.619
1998	12	23,098.000	21,321.975	1,776.025	7.69%	0.517
1999	1	26,031.000	24,713.880	1,317.120	5.06%	0.383
1999	2	22,846.000	22,580.966	265.034	1.16%	0.077
1999	3	22,240.000	20,957.849	1,282.151	5.77%	0.373
1999	4	21,890.000	20,402.742	1,487.258	6.79%	0.433
1999	5	20,749.000	19,761.196	987.804	4.76%	0.287
1999	6	24,238.000	28,007.548	-3,769.548	-15.55%	-1.096
1999	7	27,150.000	30,924.891	-3,774.891	-13.90%	-1.098
1999	8	28,622.000	32,875.746	-4,253.746	-14.86%	-1.237
1999	9	25,564.000	30,792.160	-5,228.160	-20.45%	-1.521
1999	10	22,051.000	22,091.373	-40.373	-0.18%	-0.012
1999	11	21,371.000	23,497.250	-2,126.250	-9.95%	-0.618
1999	12	24,492.000	25,967.175	-1,475.175	-6.02%	-0.429
2000	1	27,719.000	28,353.200	-634.200	-2.29%	-0.184
2000	2	24,662.000	28,087.291	-3,425.291	-13.89%	-0.996
2000	3	23,722.000	24,877.798	-1,155.798	-4.87%	-0.336
2000	4	23,023.000	24,500.003	-1,477.003	-6.42%	-0.430
2000	5	24,870.000	23,432.493	1,437.507	5.78%	0.418
2000	6	26,809.000	27,991.521	-1,182.521	-4.41%	-0.344
2000	7	30,241.000	32,425.583	-2,184.583	-7.22%	-0.635
2000	8	31,444.000	33,128.423	-1,684.423	-5.36%	-0.490
2000	9	30,316.000	31,794.499	-1,478.499	-4.88%	-0.430
2000	10	26,501.000	24,312.501	2,188.499	8.26%	0.637
2000	11	25,688.000	24,761.029	926.971	3.61%	0.270
2000	12	29,243.000	29,185.451	57.549	0.20%	0.017
2001	1	82,345.000	82,345.000	0.000	0.00%	0.000
2001	2	64,095.063	64,292.374	-197.311	-0.31%	-0.057
2001	3	64,573.916	61,485.840	3,088.076	4.78%	0.898

Year	Month	Actual	Pred	Resid	%Resid	StdResid
2001	4	54,834.371	59,802.197	-4,967.826	-9.06%	-1.445
2001	5	56,493.975	57,906.014	-1,412.039	-2.50%	-0.411
2001	6	59,727.778	63,686.945	-3,959.167	-6.63%	-1.152
2001	7	67,712.143	71,638.628	-3,926.485	-5.80%	-1.142
2001	8	71,391.900	75,737.080	-4,345.180	-6.09%	-1.264
2001	9	66,245.464	67,536.351	-1,290.887	-1.95%	-0.375
2001	10	58,002.772	58,786.187	-783.415	-1.35%	-0.228
2001	11	54,780.392	58,743.749	-3,963.357	-7.23%	-1.153
2001	12	58,782.117	60,537.346	-1,755.229	-2.99%	-0.511
2002	1	63,031.553	62,719.428	312.125	0.50%	0.091
2002	2	57,628.534	61,304.760	-3,676.226	-6.38%	-1.069
2002	3	57,419.975	59,835.199	-2,415.224	-4.21%	-0.702
2002	4	58,155.873	58,979.953	-824.080	-1.42%	-0.240
2002	5	54,976.427	57,643.450	-2,667.023	-4.85%	-0.776
2002	6	61,567.972	64,620.767	-3,052.795	-4.96%	-0.888
2002	7	73,690.034	76,079.592	-2,389.558	-3.24%	-0.695
2002	8	71,611.052	71,576.230	34.822	0.05%	0.010
2002	9	70,069.375	71,718.383	-1,649.008	-2.35%	-0.480
2002	10	60,472.308	64,364.336	-3,892.028	-6.44%	-1.132
2002	11	58,128.853	60,747.587	-2,618.734	-4.51%	-0.762
2002	12	64,921.215	62,547.511	2,373.704	3.66%	0.690
2003	1	66,708.018	63,429.553	3,278.465	4.91%	0.954
2003	2	62,244.124	63,464.922	-1,220.798	-1.96%	-0.355
2003	3	61,373.134	60,568.852	804.282	1.31%	0.234
2003	4	59,379.781	58,560.718	819.063	1.38%	0.238
2003	5	60,054.138	57,506.462	2,547.676	4.24%	0.741
2003	6	63,755.814	60,878.243	2,877.571	4.51%	0.837
2003	7	70,890.927	68,372.917	2,518.010	3.55%	0.732
2003	8	72,500.666	71,131.877	1,368.789	1.89%	0.398
2003	9	72,608.069	71,240.526	1,367.543	1.88%	0.398
2003	10	60,839.229	60,284.448	554.781	0.91%	0.161
2003	11	59,903.125	60,771.173	-868.048	-1.45%	-0.252
2003	12	75,235.140	75,235.140	0.000	0.00%	0.000
2004	1	75,346.571	64,593.667	10,752.904	14.27%	3.128
2004	2	63,473.003	65,281.265	-1,808.262	-2.85%	-0.526
2004	3	60,465.096	61,146.217	-681.121	-1.13%	-0.198
2004	4	60,250.065	60,272.329	-22.264	-0.04%	-0.006
2004	5	60,778.588	59,749.836	1,028.752	1.69%	0.299
2004	6	65,459.020	64,877.745	581.275	0.89%	0.169
2004	7	69,857.267	66,896.624	2,960.643	4.24%	0.861
2004	8	71,088.694	67,825.064	3,263.630	4.59%	0.949

Year	Month	Actual	Pred	Resid	%Resid	StdResid
2004	9	70,627.729	67,828.737	2,798.992	3.96%	0.814
2004	10	65,100.864	67,566.413	-2,465.549	-3.79%	-0.717
2004	11	61,522.894	62,353.673	-830.779	-1.35%	-0.242
2004	12	67,490.675	65,199.159	2,291.516	3.40%	0.667
2005	1	72,162.626	67,977.972	4,184.654	5.80%	1.217
2005	2	60,745.373	65,804.174	-5,058.801	-8.33%	-1.471
2005	3	58,227.675	64,008.998	-5,781.323	-9.93%	-1.682
2005	4	58,210.254	62,586.632	-4,376.378	-7.52%	-1.273
2005	5	71,120.466	71,120.466	0.000	0.00%	0.000
2005	6	96,108.838	96,108.838	0.000	0.00%	0.000
2005	7	97,043.664	97,043.664	0.000	0.00%	0.000
2005	8	108,742.000	108,742.000	0.000	0.00%	0.000
2005	9	78,720.401	74,672.198	4,048.203	5.14%	1.177
2005	10	74,963.960	73,069.489	1,894.471	2.53%	0.551
2005	11	84,605.030	84,605.030	0.000	0.00%	0.000
2005	12	70,164.000	69,043.124	1,120.876	1.60%	0.326
2006	1	75,304.701	69,685.479	5,619.222	7.46%	1.634
2006	2	65,361.215	68,756.771	-3,395.556	-5.20%	-0.988
2006	3	73,257.831	67,653.028	5,604.803	7.65%	1.630
2006	4	62,623.798	65,890.643	-3,266.845	-5.22%	-0.950
2006	5	59,964.968	65,071.323	-5,106.355	-8.52%	-1.485
2006	6	83,612.222	78,109.450	5,502.772	6.58%	1.601
2006	7	79,917.241	76,632.913	3,284.328	4.11%	0.955
2006	8	88,285.307	85,686.706	2,598.601	2.94%	0.756
2006	9	78,587.977	72,804.175	5,783.802	7.36%	1.682
2006	10	72,056.326	68,213.921	3,842.405	5.33%	1.118
2006	11	66,690.741	69,493.257	-2,802.516	-4.20%	-0.815
2006	12	69,115.180	71,340.308	-2,225.128	-3.22%	-0.647
2007	1	79,313.971	73,333.068	5,980.903	7.54%	1.740
2007	2	66,319.254	74,484.768	-8,165.514	-12.31%	-2.375
2007	3	81,051.389	81,051.389	0.000	0.00%	0.000
2007	4	67,159.065	69,251.755	-2,092.690	-3.12%	-0.609
2007	5	73,947.294	68,014.191	5,933.103	8.02%	1.726
2007	6	78,315.079	80,474.876	-2,159.797	-2.76%	-0.628
2007	7	85,275.188	83,624.509	1,650.679	1.94%	0.480
2007	8	93,475.410	88,580.901	4,894.509	5.24%	1.424
2007	9	77,280.986	81,200.711	-3,919.725	-5.07%	-1.140
2007	10	82,138.755	82,201.643	-62.888	-0.08%	-0.018
2007	11	68,049.864	71,184.632	-3,134.768	-4.61%	-0.912
2007	12	71,833.219	74,730.724	-2,897.505	-4.03%	-0.843
2008	1	81,595.607	77,813.843	3,781.764	4.63%	1.100

Year	Month	Actual	Pred	Resid	%Resid	StdResid
2008	2	74,938.333	77,568.641	-2,630.308	-3.51%	-0.765
2008	3	73,108.928	73,421.151	-312.223	-0.43%	-0.091
2008	4	73,489.399	72,002.380	1,487.019	2.02%	0.433
2008	5	69,517.083	70,201.152	-684.069	-0.98%	-0.199
2008	6	76,661.877	72,412.023	4,249.854	5.54%	1.236
2008	7	86,158.327	81,845.900	4,312.427	5.01%	1.254
2008	8	83,503.057	86,835.844	-3,332.787	-3.99%	-0.969
2008	9	84,936.485	80,104.741	4,831.744	5.69%	1.405
2008	10	80,846.537	76,832.538	4,013.999	4.96%	1.168
2008	11	64,866.035	73,178.841	-8,312.806	-12.82%	-2.418
2008	12	74,601.558	77,443.942	-2,842.384	-3.81%	-0.827
2009	1		78,736.916			
2009	2		77,281.864			
2009	3		74,321.276			
2009	4		72,484.305			
2009	5		70,875.489			
2009	6		78,810.046			
2009	7		84,484.595			
2009	8		84,319.261			
2009	9		82,818.474			
2009	10		75,409.703			
2009	11		72,974.624			
2009	12		76,555.430			
2010	1		78,024.302			
2010	2		77,130.760			
2010	3		74,621.700			
2010	4		72,862.271			
2010	5		71,452.711			
2010	6		80,063.140			
2010	7		84,990.576			
2010	8		86,641.980			
2010	9		84,354.067			
2010	10		76,693.584			
2010	11		74,945.872			
2010	12		78,075.067			

**Xcel Energy South Dakota Public Street and Highway Lighting
 2010 Year MWh Electric Sales**

Variable	Coefficient	StdErr	T-Stat	P-Value	Definition
SD.HH_SD	9.154	0.623	14.686	0.00%	Households; South Dakota
Binary.Jan	-1744.957	189.140	-9.226	0.00%	Binary variable January
Binary.Feb	-1885.063	188.674	-9.991	0.00%	Binary variable February
Binary.Mar	-1941.714	188.639	-10.293	0.00%	Binary variable March
Binary.Apr	-2033.660	188.578	-10.784	0.00%	Binary variable April
Binary.May	-2124.631	188.803	-11.253	0.00%	Binary variable May
Binary.Jun	-2191.580	188.849	-11.605	0.00%	Binary variable June
Binary.Jul	-2221.323	188.718	-11.771	0.00%	Binary variable July
Binary.Aug	-2178.595	188.814	-11.538	0.00%	Binary variable August
Binary.Sep	-2091.335	188.934	-11.069	0.00%	Binary variable September
Binary.Oct	-1988.683	188.802	-10.533	0.00%	Binary variable October
Binary.Nov	-1913.178	189.004	-10.122	0.00%	Binary variable November
Binary.Dec	-1774.051	189.200	-9.377	0.00%	Binary variable December
Binary2.Feb2005	-450.480	26.178	-17.208	0.00%	Binary variable February 2005
Binary2.Oct2005	691.577	29.862	23.159	0.00%	Binary variable October 2005
Binary2.Dec2005	620.288	29.736	20.860	0.00%	Binary variable December 2005
Binary2.Jun1999	217.430	28.847	7.537	0.00%	Binary variable June 1999
Binary2.May1999	-203.764	28.853	-7.062	0.00%	Binary variable May 1999
Binary2.Nov2005	232.070	32.993	7.034	0.00%	Binary variable November 2005
Binary2.Feb2007	111.510	26.194	4.257	0.00%	Binary variable February 2007
Binary2.Oct2006	105.421	26.333	4.003	0.01%	Binary variable October 2006
BinaryTrans.Jan08	63.222	26.203	2.413	1.75%	Binary variable January 2008
AR(1)	0.579	0.077	7.505	0.00%	First order autoregressive term

**Xcel Energy South Dakota Public Street and Highway Lighting
2010 Year MWh Electric Sales**

Regression Statistics

Iterations	9
Adjusted Observations	131
Deg. of Freedom for Error	108
R-Squared	0.985
Adjusted R-Squared	0.982
Durbin-Watson Statistic	2.084
Durbin-H Statistic	#NA
AIC	6.861
BIC	7.366
F-Statistic	316.971
Prob (F-Statistic)	0.0000
Log-Likelihood	-607.63
Model Sum of Squares	5942366
Sum of Squared Errors	88031
Mean Squared Error	815.10
Std. Error of Regression	28.55
Mean Abs. Dev. (MAD)	19.90
Mean Abs. % Err. (MAPE)	2.71%
Ljung-Box Statistic	69.51
Prob (Ljung-Box)	0.0000

**Xcel Energy South Dakota Public Street and Highway Lighting
 2010 Year MWh Electric Sales**

Year	Month	Actual	Pred	Resid	%Resid	StdResid
1998	1	768.000				
1998	2	641.000	674.249	-33.249	-5.19%	-1.165
1998	3	637.000	625.562	11.438	1.80%	0.401
1998	4	561.000	564.571	-3.571	-0.64%	-0.125
1998	5	504.000	483.310	20.690	4.11%	0.725
1998	6	454.000	436.480	17.520	3.86%	0.614
1998	7	438.000	417.018	20.982	4.79%	0.735
1998	8	481.000	468.171	12.829	2.67%	0.449
1998	9	545.000	556.102	-11.102	-2.04%	-0.389
1998	10	640.000	645.781	-5.781	-0.90%	-0.203
1998	11	716.000	717.347	-1.347	-0.19%	-0.047
1998	12	807.000	857.362	-50.362	-6.24%	-1.764
1999	1	851.000	859.138	-8.138	-0.96%	-0.285
1999	2	718.000	728.196	-10.196	-1.42%	-0.357
1999	3	662.000	676.549	-14.549	-2.20%	-0.510
1999	4	596.000	585.666	10.334	1.73%	0.362
1999	5	317.000	306.634	10.366	3.27%	0.363
1999	6	689.000	671.090	17.910	2.60%	0.627
1999	7	466.000	435.055	30.945	6.64%	1.084
1999	8	520.000	492.636	27.364	5.26%	0.958
1999	9	651.000	587.279	63.721	9.79%	2.232
1999	10	664.000	716.107	-52.107	-7.85%	-1.825
1999	11	742.000	740.586	1.414	0.19%	0.050
1999	12	867.000	882.016	-15.016	-1.73%	-0.526
2000	1	902.000	903.793	-1.793	-0.20%	-0.063
2000	2	747.000	767.966	-20.966	-2.81%	-0.734
2000	3	707.000	704.316	2.684	0.38%	0.094
2000	4	646.000	623.188	22.812	3.53%	0.799
2000	5	520.000	551.309	-31.309	-6.02%	-1.097
2000	6	509.000	465.276	43.724	8.59%	1.531
2000	7	493.000	469.099	23.901	4.85%	0.837
2000	8	517.000	520.966	-3.966	-0.77%	-0.139
2000	9	610.000	598.580	11.420	1.87%	0.400
2000	10	702.000	705.743	-3.743	-0.53%	-0.131
2000	11	775.000	776.271	-1.271	-0.16%	-0.045
2000	12	875.000	915.146	-40.146	-4.59%	-1.406
2001	1	879.000	922.786	-43.786	-4.98%	-1.534
2001	2	743.896	769.349	-25.453	-3.42%	-0.892
2001	3	704.354	716.794	-12.440	-1.77%	-0.436

Year	Month	Actual	Pred	Resid	%Resid	StdResid
2001	4	625.436	635.946	-10.510	-1.68%	-0.368
2001	5	570.396	553.712	16.684	2.93%	0.584
2001	6	507.236	508.763	-1.527	-0.30%	-0.053
2001	7	469.711	482.413	-12.702	-2.70%	-0.445
2001	8	551.100	521.836	29.264	5.31%	1.025
2001	9	643.339	632.681	10.658	1.66%	0.373
2001	10	801.502	739.418	62.084	7.75%	2.175
2001	11	825.474	848.254	-22.780	-2.76%	-0.798
2001	12	952.169	958.769	-6.600	-0.69%	-0.231
2002	1	978.611	981.874	-3.263	-0.33%	-0.114
2002	2	841.639	841.441	0.198	0.02%	0.007
2002	3	789.608	787.820	1.788	0.23%	0.063
2002	4	696.562	699.759	-3.197	-0.46%	-0.112
2002	5	587.729	609.363	-21.634	-3.68%	-0.758
2002	6	535.675	533.296	2.379	0.44%	0.083
2002	7	536.098	513.389	22.709	4.24%	0.795
2002	8	573.539	574.791	-1.252	-0.22%	-0.044
2002	9	662.955	660.215	2.740	0.41%	0.096
2002	10	725.512	765.334	-39.822	-5.49%	-1.395
2002	11	829.237	818.851	10.386	1.25%	0.364
2002	12	978.487	975.540	2.947	0.30%	0.103
2003	1	1,016.980	1,011.715	5.265	0.52%	0.184
2003	2	861.374	878.272	-16.898	-1.96%	-0.592
2003	3	803.385	813.881	-10.496	-1.31%	-0.368
2003	4	691.346	722.388	-31.042	-4.49%	-1.087
2003	5	649.005	621.015	27.990	4.31%	0.980
2003	6	552.531	583.446	-30.915	-5.60%	-1.083
2003	7	539.242	537.846	1.396	0.26%	0.049
2003	8	587.522	591.327	-3.805	-0.65%	-0.133
2003	9	692.869	683.040	9.829	1.42%	0.344
2003	10	786.065	797.395	-11.330	-1.44%	-0.397
2003	11	884.661	868.661	16.000	1.81%	0.560
2003	12	1,050.806	1,022.396	28.410	2.70%	0.995
2004	1	1,052.894	1,068.365	-15.471	-1.47%	-0.542
2004	2	895.438	913.868	-18.430	-2.06%	-0.646
2004	3	867.454	848.422	19.032	2.19%	0.667
2004	4	722.006	774.310	-52.304	-7.24%	-1.832
2004	5	683.313	653.616	29.697	4.35%	1.040
2004	6	598.760	618.175	-19.415	-3.24%	-0.680
2004	7	587.482	579.490	7.992	1.36%	0.280
2004	8	641.607	634.151	7.456	1.16%	0.261

Year	Month	Actual	Pred	Resid	%Resid	StdResid
2004	9	738.445	729.262	9.183	1.24%	0.322
2004	10	869.617	838.708	30.909	3.55%	1.083
2004	11	951.205	931.969	19.236	2.02%	0.674
2004	12	1,092.110	1,075.877	16.233	1.49%	0.569
2005	1	1,123.735	1,107.253	16.482	1.47%	0.577
2005	2	515.329	519.386	-4.057	-0.79%	-0.142
2005	3	897.155	904.165	-7.010	-0.78%	-0.246
2005	4	827.489	806.530	20.959	2.53%	0.734
2005	5	725.932	729.712	-3.780	-0.52%	-0.132
2005	6	659.955	656.540	3.415	0.52%	0.120
2005	7	626.788	628.048	-1.260	-0.20%	-0.044
2005	8	652.000	669.482	-17.482	-2.68%	-0.612
2005	9	733.025	747.295	-14.270	-1.95%	-0.500
2005	10	1,545.757	1,538.604	7.153	0.46%	0.251
2005	11	1,178.358	1,166.000	12.358	1.05%	0.433
2005	12	1,725.000	1,703.647	21.353	1.24%	0.748
2006	1	1,161.204	1,124.311	36.893	3.18%	1.292
2006	2	1,030.265	1,000.752	29.513	2.86%	1.034
2006	3	938.168	950.099	-11.931	-1.27%	-0.418
2006	4	832.862	838.330	-5.468	-0.66%	-0.192
2006	5	753.087	740.319	12.768	1.70%	0.447
2006	6	652.234	679.231	-26.997	-4.14%	-0.946
2006	7	593.492	630.005	-36.513	-6.15%	-1.279
2006	8	639.350	656.089	-16.739	-2.62%	-0.586
2006	9	691.755	745.300	-53.545	-7.74%	-1.875
2006	10	938.445	933.341	5.104	0.54%	0.179
2006	11	934.733	925.914	8.819	0.94%	0.309
2006	12	1,059.800	1,080.348	-20.548	-1.94%	-0.720
2007	1	1,074.892	1,101.444	-26.552	-2.47%	-0.930
2007	2	1,094.681	1,064.884	29.797	2.72%	1.044
2007	3	976.349	924.866	51.483	5.27%	1.803
2007	4	858.226	861.899	-3.673	-0.43%	-0.129
2007	5	760.237	755.918	4.319	0.57%	0.151
2007	6	670.751	685.305	-14.554	-2.17%	-0.510
2007	7	616.349	642.767	-26.418	-4.29%	-0.925
2007	8	673.667	671.472	2.195	0.33%	0.077
2007	9	722.198	767.682	-45.484	-6.30%	-1.593
2007	10	832.640	848.276	-15.636	-1.88%	-0.548
2007	11	945.778	928.646	17.132	1.81%	0.600
2007	12	1,085.212	1,090.171	-4.959	-0.46%	-0.174
2008	1	1,223.495	1,183.131	40.364	3.30%	1.414

Year	Month	Actual	Pred	Resid	%Resid	StdResid
2008	2	1,076.615	1,006.874	69.741	6.48%	2.443
2008	3	953.725	983.726	-30.001	-3.15%	-1.051
2008	4	909.726	854.066	55.660	6.12%	1.950
2008	5	725.676	791.467	-65.791	-9.07%	-2.304
2008	6	678.602	670.143	8.459	1.25%	0.296
2008	7	621.017	652.051	-31.034	-5.00%	-1.087
2008	8	642.948	678.813	-35.865	-5.58%	-1.256
2008	9	772.608	755.759	16.849	2.18%	0.590
2008	10	906.930	883.762	23.168	2.55%	0.811
2008	11	918.458	978.407	-59.949	-6.53%	-2.100
2008	12	1,149.983	1,081.296	68.687	5.97%	2.406
2009	1		1,164.668			
2009	2		1,017.024			
2009	3		956.801			
2009	4		863.585			
2009	5		772.677			
2009	6		706.538			
2009	7		678.053			
2009	8		722.296			
2009	9		811.199			
2009	10		915.581			
2009	11		992.865			
2009	12		1,133.780			
2010	1		1,164.677			
2010	2		1,026.385			
2010	3		971.531			
2010	4		881.386			
2010	5		792.219			
2010	6		727.064			
2010	7		699.117			
2010	8		743.641			
2010	9		833.938			
2010	10		939.628			
2010	11		1,018.171			
2010	12		1,160.346			

**Xcel Energy South Dakota Residential without Space Heat
 2010 Year Customer Counts**

Variable	Coefficient	StdErr	T-Stat	P-Value	Definition
SD.HH_SD	239.172	44.467	5.379	0.00%	Households, South Dakota
Binary.CRS	274.738	143.787	1.911	5.84%	Binary variable for CRS conversion
Binary2.May1999	-2365.350	116.709	-20.267	0.00%	Binary variable May 1999
Binary2.Jun1999	2359.675	116.701	20.220	0.00%	Binary variable June 1999
Binary2.Dec2000	-1413.280	116.696	-12.111	0.00%	Binary variable December 2000
Binary2.Jan2001	1508.720	116.696	12.929	0.00%	Binary variable January 2001
AR(1)	0.995	0.006	164.100	0.00%	First order autoregressive term

**Xcel Energy South Dakota Residential without Space Heat
2010 Year Customer Counts**

Regression Statistics

Iterations	17
Adjusted Observations	131
Deg. of Freedom for Error	124
R-Squared	0.999
Adjusted R-Squared	0.999
Durbin-Watson Statistic	2.028
Durbin-H Statistic	#NA
AIC	9.972
BIC	10.126
F-Statistic	15025.797
Prob (F-Statistic)	0.0000
Log-Likelihood	-825.69
Model Sum of Squares	2138516869
Sum of Squared Errors	2521151
Mean Squared Error	20331.86
Std. Error of Regression	142.59
Mean Abs. Dev. (MAD)	104.57
Mean Abs. % Err. (MAPE)	0.17%
Ljung-Box Statistic	41.86
Prob (Ljung-Box)	0.0134

**Xcel Energy South Dakota Residential without Space Heat
2010 Year Customer Counts**

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Year	Month	Actual	Pred	Resid	%Resid	StdResid
1998	1	53,593.000				
1998	2	53,557.000	53,697.919	-140.919	-0.26%	-0.988
1998	3	54,162.000	53,657.684	504.316	0.93%	3.537
1998	4	53,880.000	54,260.004	-380.004	-0.71%	-2.665
1998	5	53,890.000	53,979.457	-89.457	-0.17%	-0.627
1998	6	54,182.000	53,988.941	193.059	0.36%	1.354
1998	7	54,162.000	54,279.717	-117.717	-0.22%	-0.826
1998	8	54,362.000	54,259.946	102.054	0.19%	0.716
1998	9	54,369.000	54,460.255	-91.255	-0.17%	-0.640
1998	10	54,544.000	54,467.364	76.636	0.14%	0.537
1998	11	54,788.000	54,641.690	146.310	0.27%	1.026
1998	12	54,925.000	54,887.631	37.369	0.07%	0.262
1999	1	55,102.000	55,024.148	77.852	0.14%	0.546
1999	2	55,399.000	55,200.478	198.522	0.36%	1.392
1999	3	55,415.000	55,505.520	-90.520	-0.16%	-0.635
1999	4	55,342.000	55,521.644	-179.644	-0.32%	-1.260
1999	5	53,072.000	53,083.833	-11.833	-0.02%	-0.083
1999	6	57,903.000	57,914.888	-11.888	-0.02%	-0.083
1999	7	55,649.000	55,660.944	-11.944	-0.02%	-0.084
1999	8	55,928.000	55,766.376	161.624	0.29%	1.133
1999	9	55,670.000	56,044.256	-374.256	-0.67%	-2.625
1999	10	55,906.000	55,787.707	118.293	0.21%	0.830
1999	11	55,917.000	56,022.856	-105.856	-0.19%	-0.742
1999	12	55,969.000	56,033.985	-64.985	-0.12%	-0.456
2000	1	56,393.000	56,085.991	307.009	0.54%	2.153
2000	2	56,454.000	56,508.264	-54.264	-0.10%	-0.381
2000	3	56,391.000	56,589.134	-198.134	-0.35%	-1.390
2000	4	56,469.000	56,526.769	-57.769	-0.10%	-0.405
2000	5	56,401.000	56,604.747	-203.747	-0.36%	-1.429
2000	6	56,466.000	56,537.637	-71.637	-0.13%	-0.502
2000	7	56,611.000	56,602.676	8.324	0.01%	0.058
2000	8	56,727.000	56,747.343	-20.343	-0.04%	-0.143
2000	9	57,033.000	56,863.377	169.623	0.30%	1.190

**Xcel Energy South Dakota Residential without Space Heat
2010 Year Customer Counts**

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Year	Month	Actual	Pred	Resid	%Resid	StdResid
2000	10	57,274.000	57,168.294	105.706	0.18%	0.741
2000	11	57,474.000	57,408.515	65.485	0.11%	0.459
2000	12	56,192.000	56,194.879	-2.879	-0.01%	-0.020
2001	1	59,245.000	59,247.893	-2.893	0.00%	-0.020
2001	2	57,867.000	57,869.906	-2.906	-0.01%	-0.020
2001	3	57,913.000	58,000.596	-87.596	-0.15%	-0.614
2001	4	58,049.000	58,046.727	2.273	0.00%	0.016
2001	5	57,872.000	58,182.439	-310.439	-0.54%	-2.177
2001	6	57,980.000	58,006.844	-26.844	-0.05%	-0.188
2001	7	58,150.000	58,114.688	35.312	0.06%	0.248
2001	8	58,224.000	58,284.242	-60.242	-0.10%	-0.422
2001	9	58,422.000	58,358.479	63.521	0.11%	0.445
2001	10	58,580.000	58,555.905	24.095	0.04%	0.169
2001	11	58,625.000	58,713.516	-88.516	-0.15%	-0.621
2001	12	58,726.000	58,758.890	-32.890	-0.06%	-0.231
2002	1	58,940.000	58,859.769	80.231	0.14%	0.563
2002	2	59,000.000	59,073.120	-73.120	-0.12%	-0.513
2002	3	59,110.000	59,133.427	-23.427	-0.04%	-0.164
2002	4	59,334.000	59,243.264	90.736	0.15%	0.636
2002	5	59,448.000	59,466.570	-18.570	-0.03%	-0.130
2002	6	59,382.000	59,580.627	-198.627	-0.33%	-1.393
2002	7	59,704.000	59,515.285	188.715	0.32%	1.323
2002	8	59,809.000	59,836.136	-27.136	-0.05%	-0.190
2002	9	59,953.000	59,941.236	11.764	0.02%	0.083
2002	10	60,129.000	60,084.918	44.082	0.07%	0.309
2002	11	60,059.000	60,260.450	-201.450	-0.34%	-1.413
2002	12	60,004.000	60,191.367	-187.367	-0.31%	-1.314
2003	1	60,230.000	60,136.977	93.023	0.15%	0.652
2003	2	60,437.000	60,362.277	74.723	0.12%	0.524
2003	3	60,372.000	60,568.906	-196.906	-0.33%	-1.381
2003	4	60,625.000	60,504.563	120.437	0.20%	0.845
2003	5	60,627.000	60,756.739	-129.739	-0.21%	-0.910
2003	6	60,691.000	60,759.325	-68.325	-0.11%	-0.479
2003	7	60,897.000	60,823.382	73.618	0.12%	0.516
2003	8	61,013.000	61,028.778	-15.778	-0.03%	-0.111

**Xcel Energy South Dakota Residential without Space Heat
2010 Year Customer Counts**

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Year	Month	Actual	Pred	Resid	%Resid	StdResid
2003	9	60,870.000	61,144.834	-274.834	-0.45%	-1.927
2003	10	61,195.000	61,002.857	192.143	0.31%	1.348
2003	11	61,278.000	61,326.700	-48.700	-0.08%	-0.342
2003	12	61,294.000	61,409.912	-115.912	-0.19%	-0.813
2004	1	61,544.000	61,426.195	117.805	0.19%	0.826
2004	2	61,700.000	61,675.388	24.612	0.04%	0.173
2004	3	61,857.000	61,831.262	25.738	0.04%	0.181
2004	4	61,882.000	61,987.889	-105.889	-0.17%	-0.743
2004	5	62,141.000	62,013.132	127.868	0.21%	0.897
2004	6	62,004.000	62,271.527	-267.527	-0.43%	-1.876
2004	7	62,082.000	62,135.526	-53.526	-0.09%	-0.375
2004	8	62,432.000	62,213.523	218.477	0.35%	1.532
2004	9	62,460.000	62,562.496	-102.496	-0.16%	-0.719
2004	10	62,426.000	62,590.727	-164.727	-0.26%	-1.155
2004	11	62,658.000	62,557.247	100.753	0.16%	0.707
2004	12	62,830.000	62,788.772	41.228	0.07%	0.289
2005	1	62,830.000	62,960.333	-130.333	-0.21%	-0.914
2005	2	62,680.000	62,685.958	-5.958	-0.01%	-0.042
2005	3	62,623.000	62,810.723	-187.723	-0.30%	-1.317
2005	4	62,390.000	62,754.352	-364.352	-0.58%	-2.555
2005	5	62,297.000	62,522.802	-225.802	-0.36%	-1.584
2005	6	62,253.000	62,395.238	-142.238	-0.23%	-0.998
2005	7	62,223.000	62,351.642	-128.642	-0.21%	-0.902
2005	8	62,297.000	62,321.980	-24.980	-0.04%	-0.175
2005	9	62,418.000	62,395.908	22.092	0.04%	0.155
2005	10	62,662.000	62,516.543	145.457	0.23%	1.020
2005	11	62,869.000	62,759.605	109.395	0.17%	0.767
2005	12	62,939.000	62,965.913	-26.913	-0.04%	-0.189
2006	1	63,128.000	63,035.786	92.214	0.15%	0.647
2006	2	63,280.000	63,224.105	55.895	0.09%	0.392
2006	3	63,463.000	63,375.670	87.330	0.14%	0.612
2006	4	63,475.000	63,558.017	-83.017	-0.13%	-0.582
2006	5	63,628.000	63,570.161	57.839	0.09%	0.406
2006	6	63,756.000	63,688.431	67.569	0.11%	0.474
2006	7	63,912.000	63,815.875	96.125	0.15%	0.674

**Xcel Energy South Dakota Residential without Space Heat
2010 Year Customer Counts**

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Year	Month	Actual	Pred	Resid	%Resid	StdResid
2006	8	64,221.000	63,971.188	249.812	0.39%	1.752
2006	9	64,623.000	64,278.791	344.209	0.53%	2.414
2006	10	64,834.000	64,678.958	155.042	0.24%	1.087
2006	11	64,954.000	64,889.015	64.985	0.10%	0.456
2006	12	65,172.000	65,008.500	163.500	0.25%	1.147
2007	1	65,390.000	65,225.524	164.476	0.25%	1.153
2007	2	65,459.000	65,442.549	16.451	0.03%	0.115
2007	3	65,574.000	65,511.270	62.730	0.10%	0.440
2007	4	65,712.000	65,625.775	86.225	0.13%	0.605
2007	5	65,908.000	65,763.172	144.828	0.22%	1.016
2007	6	65,991.000	65,965.040	25.960	0.04%	0.182
2007	7	66,118.000	66,047.725	70.275	0.11%	0.493
2007	8	66,244.000	66,174.205	69.795	0.11%	0.489
2007	9	66,253.000	66,306.416	-53.416	-0.08%	-0.375
2007	10	66,410.000	66,315.477	94.523	0.14%	0.663
2007	11	66,576.000	66,471.849	104.151	0.16%	0.730
2007	12	66,688.000	66,643.964	44.036	0.07%	0.309
2008	1	66,791.000	66,755.577	35.423	0.05%	0.248
2008	2	66,857.000	66,858.232	-1.232	0.00%	-0.009
2008	3	66,914.000	66,933.682	-19.682	-0.03%	-0.138
2008	4	66,950.000	66,990.596	-40.596	-0.06%	-0.285
2008	5	67,040.000	67,026.608	13.392	0.02%	0.094
2008	6	67,103.000	67,086.979	16.021	0.02%	0.112
2008	7	67,267.000	67,149.728	117.272	0.17%	0.822
2008	8	67,527.000	67,313.006	213.994	0.32%	1.501
2008	9	67,623.000	67,612.990	10.010	0.01%	0.070
2008	10	67,706.000	67,708.778	-2.778	0.00%	-0.019
2008	11	67,743.000	67,791.625	-48.625	-0.07%	-0.341
2008	12	67,806.000	67,828.095	-22.095	-0.03%	-0.155
2009	1		67,891.033			
2009	2		67,975.902			
2009	3		68,060.330			
2009	4		68,144.595			
2009	5		68,228.697			
2009	6		68,312.058			

**Xcel Energy South Dakota Residential without Space Heat
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Year	Month	Actual	Pred	Resid	%Resid	StdResid
2009	7		68,395.259			
2009	8		68,478.299			
2009	9		68,560.608			
2009	10		68,642.758			
2009	11		68,724.751			
2009	12		68,806.024			
2010	1		68,887.141			
2010	2		68,968.102			
2010	3		69,048.348			
2010	4		69,128.440			
2010	5		69,208.378			
2010	6		69,287.926			
2010	7		69,367.321			
2010	8		69,446.565			
2010	9		69,528.103			
2010	10		69,609.491			
2010	11		69,690.729			
2010	12		69,772.067			

**Xcel Energy South Dakota Small Commercial and Industrial
 2010 Year Customer Counts**

Variable	Coefficient	StdErr	T-Stat	P-Value	Definition
SDRXCusts.Filled	0.149	0.000	1149.472	0.00%	South Dakota Residential without Space Heating Customers
Binary.CIReclass01Pre	-364.882	11.422	-31.945	0.00%	Binary variable for 2001 C&I reclassification
Binary.CRS	-97.505	10.734	-9.084	0.00%	Binary variable for CRS conversion
Binary2.Jun1999	-182.314	36.922	-4.938	0.00%	Binary variable June 1999
Binary2.Feb2005	-141.388	38.654	-3.658	0.04%	Binary variable February 2005
Binary2.Mar2005	-112.361	38.318	-2.932	0.40%	Binary variable March 2005
BinaryTrans.Post0408	85.549	19.262	4.441	0.00%	Binary variable all months after April 2008
AR(1)	0.267	0.087	3.056	0.28%	First order autoregressive term

**Xcel Energy South Dakota Small Commercial and Industrial
2010 Year Customer Counts**

Regression Statistics

Iterations	8
Adjusted Observations	131
Deg. of Freedom for Error	123
R-Squared	0.998
Adjusted R-Squared	0.998
Durbin-Watson Statistic	2.078
Durbin-H Statistic	#NA
AIC	7.331
BIC	7.506
F-Statistic	6973.354
Prob (F-Statistic)	0.0000
Log-Likelihood	-653.02
Model Sum of Squares	80266211
Sum of Squared Errors	176973
Mean Squared Error	1438.80
Std. Error of Regression	37.93
Mean Abs. Dev. (MAD)	26.90
Mean Abs. % Err. (MAPE)	0.31%
Ljung-Box Statistic	37.67
Prob (Ljung-Box)	0.0375

**Xcel Energy South Dakota Small Commerical and Industrial
2010 Year Customer Counts**

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Year	Month	Actual	Pred	Resid	%Resid	StdResid
1998	1	7,520.000				
1998	2	7,531.000	7,535.849	-4.849	-0.06%	-0.128
1998	3	7,577.000	7,630.655	-53.655	-0.71%	-1.415
1998	4	7,567.000	7,576.653	-9.653	-0.13%	-0.254
1998	5	7,591.000	7,586.720	4.280	0.06%	0.113
1998	6	7,662.000	7,636.370	25.630	0.33%	0.676
1998	7	7,635.000	7,640.672	-5.672	-0.07%	-0.150
1998	8	7,655.000	7,664.168	-9.168	-0.12%	-0.242
1998	9	7,712.000	7,662.575	49.425	0.64%	1.303
1998	10	7,677.000	7,703.653	-26.653	-0.35%	-0.703
1998	11	7,662.000	7,723.821	-61.821	-0.81%	-1.630
1998	12	7,660.000	7,730.577	-70.577	-0.92%	-1.861
1999	1	7,671.000	7,751.043	-80.043	-1.04%	-2.110
1999	2	7,790.000	7,791.318	-1.318	-0.02%	-0.035
1999	3	7,723.000	7,813.600	-90.600	-1.17%	-2.389
1999	4	7,742.000	7,784.187	-42.187	-0.54%	-1.112
1999	5	7,466.000	7,452.832	13.168	0.18%	0.347
1999	6	8,028.000	8,009.563	18.437	0.23%	0.486
1999	7	7,930.000	7,860.845	69.155	0.87%	1.823
1999	8	7,860.000	7,917.647	-57.647	-0.73%	-1.520
1999	9	7,946.000	7,849.298	96.702	1.22%	2.549
1999	10	7,886.000	7,917.788	-31.788	-0.40%	-0.838
1999	11	7,893.000	7,894.030	-1.030	-0.01%	-0.027
1999	12	7,913.000	7,903.231	9.769	0.12%	0.258
2000	1	7,944.000	7,969.872	-25.872	-0.33%	-0.682
2000	2	7,976.000	7,970.358	5.642	0.07%	0.149
2000	3	7,940.000	7,967.040	-27.040	-0.34%	-0.713
2000	4	7,991.000	7,971.613	19.387	0.24%	0.511
2000	5	8,001.000	7,971.937	29.063	0.36%	0.766
2000	6	8,020.000	7,987.029	32.971	0.41%	0.869
2000	7	8,017.000	8,011.180	5.820	0.07%	0.153
2000	8	8,102.000	8,021.941	80.059	0.99%	2.111
2000	9	8,193.000	8,085.722	107.278	1.31%	2.828

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Year	Month	Actual	Pred	Resid	%Resid	StdResid
2000	10	8,080.000	8,133.814	-53.814	-0.67%	-1.419
2000	11	8,142.000	8,123.979	18.021	0.22%	0.475
2000	12	7,982.000	7,940.899	41.101	0.51%	1.084
2001	1	8,695.000	8,770.593	-75.593	-0.87%	-1.993
2001	2	8,601.000	8,535.740	65.260	0.76%	1.720
2001	3	8,555.000	8,572.474	-17.474	-0.20%	-0.461
2001	4	8,528.000	8,578.707	-50.707	-0.59%	-1.337
2001	5	8,552.000	8,539.629	12.371	0.14%	0.326
2001	6	8,565.000	8,569.226	-4.226	-0.05%	-0.111
2001	7	8,604.000	8,593.801	10.199	0.12%	0.269
2001	8	8,682.000	8,608.485	73.515	0.85%	1.938
2001	9	8,670.000	8,655.929	14.071	0.16%	0.371
2001	10	8,644.000	8,668.458	-24.458	-0.28%	-0.645
2001	11	8,669.000	8,661.956	7.044	0.08%	0.186
2001	12	8,629.000	8,681.925	-52.925	-0.61%	-1.395
2002	1	8,716.000	8,699.225	16.775	0.19%	0.442
2002	2	8,687.000	8,722.861	-35.861	-0.41%	-0.945
2002	3	8,726.000	8,729.181	-3.181	-0.04%	-0.084
2002	4	8,811.000	8,768.680	42.320	0.48%	1.116
2002	5	8,805.000	8,799.455	5.545	0.06%	0.146
2002	6	8,796.000	8,783.446	12.554	0.14%	0.331
2002	7	8,860.000	8,831.811	28.189	0.32%	0.743
2002	8	8,848.000	8,851.737	-3.737	-0.04%	-0.099
2002	9	8,870.000	8,865.879	4.121	0.05%	0.109
2002	10	8,876.000	8,892.315	-16.315	-0.18%	-0.430
2002	11	8,883.000	8,876.436	6.564	0.07%	0.173
2002	12	8,940.000	8,872.871	67.129	0.75%	1.770
2003	1	8,943.000	8,924.043	18.957	0.21%	0.500
2003	2	8,903.000	8,946.779	-43.779	-0.49%	-1.154
2003	3	8,950.000	8,918.148	31.852	0.36%	0.840
2003	4	8,973.000	8,971.089	1.911	0.02%	0.050
2003	5	9,024.000	8,967.437	56.563	0.63%	1.491
2003	6	8,985.000	8,990.521	-5.521	-0.06%	-0.146
2003	7	8,988.000	9,008.367	-20.367	-0.23%	-0.537
2003	8	9,007.000	9,018.297	-11.297	-0.13%	-0.298

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Year	Month	Actual	Pred	Resid	%Resid	StdResid
2003	9	9,068.000	8,997.363	70.637	0.78%	1.862
2003	10	8,973.000	9,067.908	-94.908	-1.06%	-2.502
2003	11	9,048.000	9,042.035	5.965	0.07%	0.157
2003	12	9,104.000	9,061.114	42.886	0.47%	1.131
2004	1	9,161.000	9,112.778	48.222	0.53%	1.271
2004	2	9,092.000	9,141.331	-49.331	-0.54%	-1.301
2004	3	9,145.000	9,140.187	4.813	0.05%	0.127
2004	4	9,196.000	9,151.797	44.203	0.48%	1.165
2004	5	9,121.000	9,203.114	-82.114	-0.90%	-2.165
2004	6	9,147.000	9,152.317	-5.317	-0.06%	-0.140
2004	7	9,160.000	9,176.369	-16.369	-0.18%	-0.432
2004	8	9,195.000	9,229.046	-34.046	-0.37%	-0.898
2004	9	9,281.000	9,228.614	52.386	0.56%	1.381
2004	10	9,189.000	9,245.344	-56.344	-0.61%	-1.485
2004	11	9,228.000	9,256.851	-28.851	-0.31%	-0.761
2004	12	9,326.000	9,283.714	42.286	0.45%	1.115
2005	1	9,275.000	9,302.987	-27.987	-0.30%	-0.738
2005	2	9,218.000	9,223.085	-5.085	-0.06%	-0.134
2005	3	9,227.000	9,246.072	-19.072	-0.21%	-0.503
2005	4	9,249.000	9,320.535	-71.535	-0.77%	-1.886
2005	5	9,233.000	9,291.828	-58.828	-0.64%	-1.551
2005	6	9,253.000	9,284.691	-31.691	-0.34%	-0.835
2005	7	9,266.000	9,287.292	-21.292	-0.23%	-0.561
2005	8	9,300.000	9,303.016	-3.016	-0.03%	-0.080
2005	9	9,332.000	9,327.219	4.781	0.05%	0.126
2005	10	9,351.000	9,367.402	-16.402	-0.18%	-0.432
2005	11	9,384.000	9,393.687	-9.687	-0.10%	-0.255
2005	12	9,414.000	9,404.699	9.301	0.10%	0.245
2006	1	9,439.000	9,438.160	0.840	0.01%	0.022
2006	2	9,459.000	9,460.015	-1.015	-0.01%	-0.027
2006	3	9,479.000	9,486.645	-7.645	-0.08%	-0.202
2006	4	9,492.000	9,486.477	5.523	0.06%	0.146
2006	5	9,529.000	9,512.336	16.664	0.17%	0.439
2006	6	9,567.000	9,535.237	31.763	0.33%	0.837
2006	7	9,604.000	9,563.587	40.413	0.42%	1.065

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Year	Month	Actual	Pred	Resid	%Resid	StdResid
2006	8	9,652.000	9,613.425	38.575	0.40%	1.017
2006	9	9,678.000	9,674.000	4.000	0.04%	0.105
2006	10	9,717.000	9,696.452	20.548	0.21%	0.542
2006	11	9,730.000	9,716.379	13.621	0.14%	0.359
2006	12	9,750.000	9,747.650	2.350	0.02%	0.062
2007	1	9,791.000	9,776.881	14.119	0.14%	0.372
2007	2	9,792.000	9,789.439	2.561	0.03%	0.068
2007	3	9,804.000	9,804.146	-0.146	0.00%	-0.004
2007	4	9,818.000	9,823.391	-5.391	-0.05%	-0.142
2007	5	9,844.000	9,850.923	-6.923	-0.07%	-0.183
2007	6	9,856.000	9,862.450	-6.450	-0.07%	-0.170
2007	7	9,881.000	9,881.326	-0.326	0.00%	-0.009
2007	8	9,886.000	9,901.765	-15.765	-0.16%	-0.416
2007	9	9,886.000	9,899.422	-13.422	-0.14%	-0.354
2007	10	9,921.000	9,922.532	-1.532	-0.02%	-0.040
2007	11	9,946.000	9,950.421	-4.421	-0.04%	-0.117
2007	12	9,977.000	9,967.213	9.787	0.10%	0.258
2008	1	10,007.000	9,986.411	20.589	0.21%	0.543
2008	2	10,001.000	10,000.170	0.830	0.01%	0.022
2008	3	10,023.000	10,004.461	18.539	0.18%	0.489
2008	4	10,039.000	10,013.436	25.564	0.25%	0.674
2008	5	10,084.000	10,115.270	-31.270	-0.31%	-0.824
2008	6	10,125.000	10,110.290	14.710	0.15%	0.388
2008	7	10,131.000	10,143.226	-12.226	-0.12%	-0.322
2008	8	10,184.000	10,177.155	6.845	0.07%	0.180
2008	9	10,186.000	10,195.274	-9.274	-0.09%	-0.244
2008	10	10,219.000	10,204.389	14.611	0.14%	0.385
2008	11	10,220.000	10,215.410	4.590	0.04%	0.121
2008	12	10,247.000	10,223.619	23.381	0.23%	0.616
2009	1		10,241.018			
2009	2		10,248.721			
2009	3		10,260.013			
2009	4		10,272.255			
2009	5		10,284.733			
2009	6		10,297.169			

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Year	Month	Actual	Pred	Resid	%Resid	StdResid
2009	7		10,309.599			
2009	8		10,322.011			
2009	9		10,334.314			
2009	10		10,346.594			
2009	11		10,358.851			
2009	12		10,371.000			
2010	1		10,383.125			
2010	2		10,395.228			
2010	3		10,407.223			
2010	4		10,419.196			
2010	5		10,431.146			
2010	6		10,443.037			
2010	7		10,454.905			
2010	8		10,466.751			
2010	9		10,483.424			
2010	10		10,500.075			
2010	11		10,516.703			
2010	12		10,533.347			

**Xcel Energy South Dakota Public Street and Highway Lighting
 2010 Year Customer Counts**

Variable	Coefficient	StdErr	T-Stat	P-Value	Definition
SD.HH_SD	1.207	0.194	6.222	0.00%	Households, South Dakota
Binary2.May1999	-65.638	2.269	-28.933	0.00%	Households, Minneapolis-St. Paul MSA
Binary2.Jun1999	68.677	2.269	30.272	0.00%	Binary variable May 1999
Binary2.Sep1999	21.496	1.965	10.941	0.00%	Binary variable June 1999
Binary2.Dec1999	-23.375	2.485	-9.405	0.00%	Binary variable December 1999
Binary2.Jan2000	-238.742	3.044	-78.427	0.00%	Binary variable January 2000
Binary2.Feb2000	-238.102	3.044	-78.214	0.00%	Binary variable February 2000
Binary2.Mar2000	-194.554	2.485	-78.278	0.00%	Binary variable March 2000
Binary2.Mar2001	-11.503	1.965	-5.855	0.00%	Binary variable March 2001
Binary2.Nov2005	-291.502	1.965	-148.366	0.00%	Binary variable November 2005
AR(1)	0.990	0.012	79.599	0.00%	First order autoregressive term

**Xcel Energy South Dakota Public Street and Highway Lighting
2010 Year Customer Counts**

Regression Statistics

Iterations	6
Adjusted Observations	131
Deg. of Freedom for Error	120
R-Squared	0.998
Adjusted R-Squared	0.997
Durbin-Watson Statistic	2.333
Durbin-H Statistic	#NA
AIC	2.114
BIC	2.355
F-Statistic	4577.676
Prob (F-Statistic)	0.0000
Log-Likelihood	-310.93
Model Sum of Squares	384701
Sum of Squared Errors	917
Mean Squared Error	7.64
Std. Error of Regression	2.76
Mean Abs. Dev. (MAD)	1.74
Mean Abs. % Err. (MAPE)	0.60%
Ljung-Box Statistic	35.27
Prob (Ljung-Box)	0.0645

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Year	Month	Actual	Pred	Resid	%Resid	StdResid
1998	1	262.000				
1998	2	257.000	263.049	-6.049	-2.35%	-2.188
1998	3	269.000	258.080	10.920	4.06%	3.951
1998	4	274.000	269.956	4.044	1.48%	1.463
1998	5	266.000	274.905	-8.905	-3.35%	-3.222
1998	6	265.000	266.987	-1.987	-0.75%	-0.719
1998	7	267.000	265.999	1.001	0.37%	0.362
1998	8	268.000	267.980	0.020	0.01%	0.007
1998	9	279.000	268.976	10.024	3.59%	3.626
1998	10	270.000	279.863	-9.863	-3.65%	-3.568
1998	11	271.000	270.959	0.041	0.02%	0.015
1998	12	274.000	271.965	2.035	0.74%	0.736
1999	1	275.000	274.935	0.065	0.02%	0.024
1999	2	275.000	275.926	-0.926	-0.34%	-0.335
1999	3	274.000	275.975	-1.975	-0.72%	-0.714
1999	4	274.000	274.988	-0.988	-0.36%	-0.357
1999	5	207.000	209.351	-2.351	-1.14%	-0.851
1999	6	340.000	342.376	-2.376	-0.70%	-0.860
1999	7	270.000	272.402	-2.402	-0.89%	-0.869
1999	8	277.000	271.095	5.905	2.13%	2.136
1999	9	299.000	299.520	-0.520	-0.17%	-0.188
1999	10	278.000	278.525	-0.525	-0.19%	-0.190
1999	11	280.000	279.019	0.981	0.35%	0.355
1999	12	258.000	257.626	0.374	0.15%	0.135
2000	1	44.000	43.622	0.378	0.86%	0.137
2000	2	46.000	45.618	0.382	0.83%	0.138
2000	3	91.000	90.614	0.386	0.42%	0.140
2000	4	287.000	286.610	0.390	0.14%	0.141
2000	5	288.000	288.044	-0.044	-0.02%	-0.016
2000	6	289.000	289.038	-0.038	-0.01%	-0.014
2000	7	290.000	290.032	-0.032	-0.01%	-0.012
2000	8	291.000	291.025	-0.025	-0.01%	-0.009
2000	9	293.000	292.020	0.980	0.33%	0.355

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Year	Month	Actual	Pred	Resid	%Resid	StdResid
2000	10	297.000	294.003	2.997	1.01%	1.084
2000	11	297.000	297.965	-0.965	-0.32%	-0.349
2000	12	296.000	297.970	-1.970	-0.67%	-0.713
2001	1	300.000	296.984	3.016	1.01%	1.091
2001	2	299.000	300.946	-1.946	-0.65%	-0.704
2001	3	287.000	288.459	-1.459	-0.51%	-0.528
2001	4	298.000	299.474	-1.474	-0.49%	-0.533
2001	5	297.000	298.980	-1.980	-0.67%	-0.716
2001	6	300.000	297.996	2.004	0.67%	0.725
2001	7	300.000	300.968	-0.968	-0.32%	-0.350
2001	8	299.000	300.972	-1.972	-0.66%	-0.713
2001	9	301.000	299.988	1.012	0.34%	0.366
2001	10	300.000	301.971	-1.971	-0.66%	-0.713
2001	11	300.000	300.985	-0.985	-0.33%	-0.356
2001	12	301.000	300.990	0.010	0.00%	0.004
2002	1	300.000	301.984	-1.984	-0.66%	-0.718
2002	2	306.000	300.998	5.002	1.63%	1.810
2002	3	306.000	306.940	-0.940	-0.31%	-0.340
2002	4	309.000	306.944	2.056	0.67%	0.744
2002	5	307.000	309.917	-2.917	-0.95%	-1.055
2002	6	306.000	307.943	-1.943	-0.63%	-0.703
2002	7	305.000	306.958	-1.958	-0.64%	-0.708
2002	8	305.000	305.972	-0.972	-0.32%	-0.352
2002	9	303.000	305.977	-2.977	-0.98%	-1.077
2002	10	302.000	304.002	-2.002	-0.66%	-0.724
2002	11	304.000	303.017	0.983	0.32%	0.356
2002	12	307.000	305.001	1.999	0.65%	0.723
2003	1	308.000	307.973	0.027	0.01%	0.010
2003	2	311.000	308.967	2.033	0.65%	0.736
2003	3	311.000	311.941	-0.941	-0.30%	-0.340
2003	4	312.000	311.945	0.055	0.02%	0.020
2003	5	308.000	312.938	-4.938	-1.60%	-1.787
2003	6	309.000	308.986	0.014	0.00%	0.005
2003	7	308.000	309.979	-1.979	-0.64%	-0.716
2003	8	310.000	308.994	1.006	0.32%	0.364

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Year	Month	Actual	Pred	Resid	%Resid	StdResid
2003	9	310.000	310.978	-0.978	-0.32%	-0.354
2003	10	308.000	310.982	-2.982	-0.97%	-1.079
2003	11	313.000	309.007	3.993	1.28%	1.445
2003	12	319.000	313.960	5.040	1.58%	1.823
2004	1	318.000	319.901	-1.901	-0.60%	-0.688
2004	2	318.000	318.916	-0.916	-0.29%	-0.331
2004	3	320.000	318.921	1.079	0.34%	0.390
2004	4	322.000	320.904	1.096	0.34%	0.397
2004	5	322.000	322.887	-0.887	-0.28%	-0.321
2004	6	322.000	322.892	-0.892	-0.28%	-0.323
2004	7	323.000	322.896	0.104	0.03%	0.037
2004	8	324.000	323.890	0.110	0.03%	0.040
2004	9	324.000	324.885	-0.885	-0.27%	-0.320
2004	10	328.000	324.889	3.111	0.95%	1.126
2004	11	327.000	328.851	-1.851	-0.57%	-0.670
2004	12	329.000	327.867	1.133	0.34%	0.410
2005	1	338.000	329.850	8.150	2.41%	2.949
2005	2	336.000	338.760	-2.760	-0.82%	-0.998
2005	3	336.000	336.786	-0.786	-0.23%	-0.284
2005	4	336.000	336.790	-0.790	-0.24%	-0.286
2005	5	337.000	336.794	0.206	0.06%	0.074
2005	6	338.000	337.610	0.390	0.12%	0.141
2005	7	338.000	338.601	-0.601	-0.18%	-0.218
2005	8	337.000	338.604	-1.604	-0.48%	-0.580
2005	9	337.000	337.617	-0.617	-0.18%	-0.223
2005	10	338.000	337.619	0.381	0.11%	0.138
2005	11	46.000	47.109	-1.109	-2.41%	-0.401
2005	12	337.000	338.121	-1.121	-0.33%	-0.405
2006	1	337.000	337.626	-0.626	-0.19%	-0.227
2006	2	337.000	337.628	-0.628	-0.19%	-0.227
2006	3	342.000	337.631	4.369	1.28%	1.581
2006	4	343.000	342.581	0.419	0.12%	0.152
2006	5	343.000	343.573	-0.573	-0.17%	-0.207
2006	6	342.000	343.402	-1.402	-0.41%	-0.507
2006	7	342.000	342.413	-0.413	-0.12%	-0.150

**Xcel Energy South Dakota Public Street and Highway Lighting
2010 Year Customer Counts**

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Year	Month	Actual	Pred	Resid	%Resid	StdResid
2006	8	344.000	342.414	1.586	0.46%	0.574
2006	9	343.000	344.393	-1.393	-0.41%	-0.504
2006	10	346.000	343.404	2.596	0.75%	0.939
2006	11	346.000	346.373	-0.373	-0.11%	-0.135
2006	12	347.000	346.374	0.626	0.18%	0.227
2007	1	347.000	347.364	-0.364	-0.10%	-0.132
2007	2	351.000	347.364	3.636	1.04%	1.315
2007	3	353.000	351.323	1.677	0.48%	0.607
2007	4	355.000	353.302	1.698	0.48%	0.614
2007	5	353.000	355.282	-2.282	-0.65%	-0.825
2007	6	354.000	353.337	0.663	0.19%	0.240
2007	7	354.000	354.327	-0.327	-0.09%	-0.118
2007	8	354.000	354.328	-0.328	-0.09%	-0.119
2007	9	354.000	354.363	-0.363	-0.10%	-0.131
2007	10	355.000	354.364	0.636	0.18%	0.230
2007	11	357.000	355.355	1.645	0.46%	0.595
2007	12	358.000	357.369	0.631	0.18%	0.228
2008	1	361.000	358.360	2.640	0.73%	0.955
2008	2	362.000	361.330	0.670	0.18%	0.242
2008	3	361.000	362.370	-1.370	-0.38%	-0.496
2008	4	361.000	361.383	-0.383	-0.11%	-0.138
2008	5	362.000	361.385	0.615	0.17%	0.223
2008	6	361.000	362.228	-1.228	-0.34%	-0.444
2008	7	361.000	361.239	-0.239	-0.07%	-0.086
2008	8	364.000	361.239	2.761	0.76%	0.999
2008	9	366.000	364.416	1.584	0.43%	0.573
2008	10	365.000	366.398	-1.398	-0.38%	-0.506
2008	11	366.000	365.411	0.589	0.16%	0.213
2008	12	365.000	366.400	-1.400	-0.38%	-0.507
2009	1		365.413			
2009	2		365.825			
2009	3		366.233			
2009	4		366.640			
2009	5		367.045			
2009	6		367.445			

**Xcel Energy South Dakota Public Street and Highway Lighting
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Year	Month	Actual	Pred	Resid	%Resid	StdResid
2009	7		367.844			
2009	8		368.241			
2009	9		368.634			
2009	10		369.025			
2009	11		369.415			
2009	12		369.800			
2010	1		370.184			
2010	2		370.566			
2010	3		370.944			
2010	4		371.321			
2010	5		371.696			
2010	6		372.068			
2010	7		372.439			
2010	8		372.809			
2010	9		373.341			
2010	10		373.872			
2010	11		374.401			
2010	12		374.930			

Comparison of Definitional Changes

General High-Level Description of How Billed Customers are Counted	CSS	CRS - active service
Active Metered Services	<p>CSS counted customers as they were billed (all accounts “Billed” with current “Revenue Month” revenue). Billed Customer counts were primarily derived from RV931b and RV773 (or variations of these depending on roll-ups- i.e. by Division, etc.) New customers were counted even if they only had a partial bill. Final bills were also counted if invoiced in the same month. If a customer had two load points for the same product, he was counted as one customer. If a customer was supplied with more than one product, he was counted as a customer of each product (unless on lighting or other period billing).</p>	<p>Count of unique premise, service, utility type, and tariff (rate schedule) having a meter connected for at least one day during the calendar month, having a customer current for at least one service day during the calendar month, for which one or more invoices for a never before billed service period were created during</p> <p>This only counts a service once as billed if it received a bill, regardless of how many physical invoices were generated.</p> <p>Exceptions to Active Metered Service Count where 1 service is counted multiple times by different tariffs (rate schedules)</p> <p>LGINT - if a service is classed by the LGINT tariff found on register number 50, then count that service as 4 active services under tariffs found on registers 50, 51, 79, and 80.</p> <p>RTP - if a service is classed by RTP tariff found on register number 31, then count that service as 3 active services under tariffs found on registers 31, 32, and 41.</p>

Comparison of Definitional Changes

<p>Electric Lighting Services. Periodic Billing Contracts, including individual street light and signal devices, as well as the “special C” rates (phone booths, air raid sirens, etc.), whether provided to a government agency or private corporation.</p>	<p>These types of customers, including “Night Watch” (lighting) are not counted as billed customers.</p>	<p>Count unique combinations of distinct tariff classes assigned to each Periodic Billing (PBL) contract. For example, if a contract has multiple street lights (SL) and signal devices (TSL), this contract would count as two customers (one SL and one TSL).</p>
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<p>Electric Specific Scenarios:</p>	<p>CSS</p>	<p>CRS - active service</p>
<p>Service is supplied at more than one site.</p>	<p>Each site counted as separate customer</p>	<p>No change</p>
<p>Customer receives gas and electricity at the same address.</p>	<p>Counted as one gas customer and one electric customer</p>	<p>No change</p>
<p>Customer begins service prior to the end of the billing period.</p>	<p>Customer is counted</p>	<p>Service is counted once if occupied by any one or more customer for 1 day during the period.</p>
<p>Customer discontinues service prior to the end of the billing period (creating the account status of final).</p>	<p>Customer is counted</p>	<p>Service is counted once if occupied by any one or more customer for 1 day during the period</p>
<p>Customers in apartment houses. For example if an apartment has 50 electric units metered separately.</p>	<p>Each counted as a customer as long as billed separately</p>	<p>Each metered service still counted as a customer</p>

Comparison of Definitional Changes

Two different types of utility services are used at the same premise. For example if a residence has both a residential and a commercial meter for a business in the basement.	Each counted as separate customer (unless additional service is lighting or periodic billing)	No change
Same type of utility service for the same premise is metered separately. For example if a customer has an electric meter for the house and an electric meter for the garage at the same address.	One customer counted	No change
Same type of utility service for two premises is metered separately. For example if the landlord lives on the first floor and the basement is metered separately.	Two customers counted	No change
Customers with electric service in unincorporated areas with a street light (SLUs). For example, three residential customers share one street light.	Not applicable, because even if customers are sharing the street light, one customer pays the utility (and gets reimbursed directly from other customers). And, as discussed above, that customer would not be counted a second time as a “Night Watch” customer.	Counted consistent with CIS
Electric customers with area lights.	As discussed above, that customer would not be counted a second time as a “Night Watch” customer.	Counted consistent with CIS

Comparison of Definitional Changes

Phone booths, sprinkler systems, air raid sirens and other types of non-metered accounts.	Not counted as customers	Counted consistent with CIS
Interdepartmental Sales	Not billed out of CSS so not counted.	Counted consistent with CIS