Exhibit No.:	
Issue(s):	Weather Normalization
Witness:	Steven M. Wills
Sponsoring Party:	Union Electric Company
Type of Exhibit:	Surrebuttal Testimony
Case No.:	ER-2011-0028
Date Testimony Prepared:	April 15, 2011

MISSOURI PUBLIC SERVICE COMMISSION

Case No. ER-2011-0028

SURREBUTTAL TESTIMONY

OF

STEVEN M. WILLS

ON

BEHALF OF

UNION ELECTRIC COMPANY
d/b/a Ameren Missouri

St. Louis, Missouri
April, 2011

SURREBUTTAL TESTIMONY

OF

STEVEN M. WILLS

CASE NO. ER-2011-0028

Q. Please state your name and business address.

A. My name is Steven M. Wills. My business address is One Ameren Plaza, 1901 Chouteau Avenue, St. Louis, Missouri 63103.

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

A. I am employed by Ameren Services Company as Managing Supervisor Quantitative Analytics.

Q. Are you the same Steven M. Wills who filed direct and rebuttal testimony in this case?

A. Yes, I am.

Q. What is the purpose of your surrebuttal testimony?

A. The purpose of my surrebuttal testimony is to respond briefly to the rebuttal testimony of Missouri Public Service Commission Staff ("Staff") witness Walt Cecil regarding the weather normalization modeling to be used in the case. While the Company and Staff are discussing settlement of these issues, if a settlement cannot be agreed-upon, I continue to urge the Commission to adopt the position included in my rebuttal testimony.

Q. Did Mr. Cecil develop any new arguments in his rebuttal testimony to support the adoption of Staff's weather normalization modeling?

A. No. In essence, Mr. Cecil just repeats the rationale from the Staff's Cost of Service report for making the modeling choices he made, with a couple of supporting

examples and further discussion. The points I made in my rebuttal testimony fully address these issues.

Q. What examples did Mr. Cecil provide in support of his position and do they change your opinion at all of Staff's argument?

A. In Schedule WC-1, Mr. Cecil provided a scatterplot that demonstrates for the Small Primary Service ("SPS") customer class that the base (non-weather sensitive) component of the class load has changed in recent years. In my rebuttal testimony, I agreed that this was the case. However I clearly demonstrated that a change in the non-weather sensitive portion of the load does not impact the weather adjustment. Mr. Cecil's exhibit is a perfect example of my point. If one looks carefully at the plot, it will be apparent that the *slope* of the data is not different from year to year; just the base level is different. Since my modeling over the two year period was constructed in a way that did not allow the changes in base level of usage to impact the weather variable coefficients (slopes), the phenomenon observed by Mr. Cecil has absolutely no impact on the calculation of my weather adjustment.[1]

Q. How was your model constructed to avoid having changes in the base level of usage impact the weather coefficients? In other words, how did your model account for the changing level of base usage?

A. My model[2] incorporated two trend variables that accounted for the changing base load pattern. While these variables do not come into play in the weather normalization

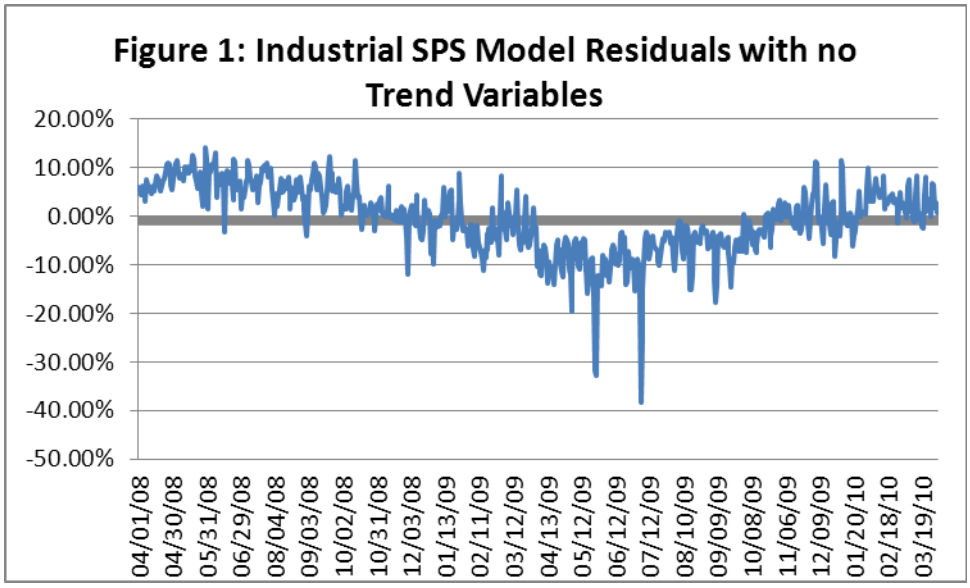
[1] As discussed at pages 12-13 of my rebuttal testimony, the slope, or coefficients of the weather variables is all that comes into play in the calculation of the weather adjustment. Changes in the base level of load, or intercept, are completely irrelevant to the calculation.

[2] Discussion of "my model" refers to the model built for the industrial SPS class, to maintain consistency with Mr. Cecil's example of the SPS class.

calculations that rely on the slope variables, they exist in the model to ensure that the changes in the level of base load do not inadvertently influence the weather coefficient.

Q. Do you have any evidence that the modeling technique used in your models was effective in preventing changes in base load from impacting the weather coefficients?

A. Yes. Figure 1 below is a graph of my model's residual pattern[3] which can be compared to the same model without the trend variables I mentioned above. A good regression model should have a residual pattern that is random. Some residuals should be positive and some negative, with no discernable pattern in them. Figure 1[4] shows the residual pattern that my model would have displayed if I had not accounted for the changing level of non-weather sensitive (base) load.



[3] The model residual is the difference between an observed value for a variable, in this case daily load, and the model's prediction of that value, given the actual values of the dependent variables, in this case, given actual weather. The residual pattern is a time series of the calculated residuals for each day over the period that the model was estimated over.

[4] Residuals associated with holidays, which have been removed from modeling as outliers, have also been removed from the graph to better highlight the underlying residual pattern that the model actually generated.

It is apparent from this figure that, absent the modeling that I used to account for the changing level of base load, there would have been a clear pattern or trend in the model residuals (residuals declining over time until summer 2009, then increasing). However, with the trend variables that I incorporated in the model, the residual pattern looks like Figure 2.

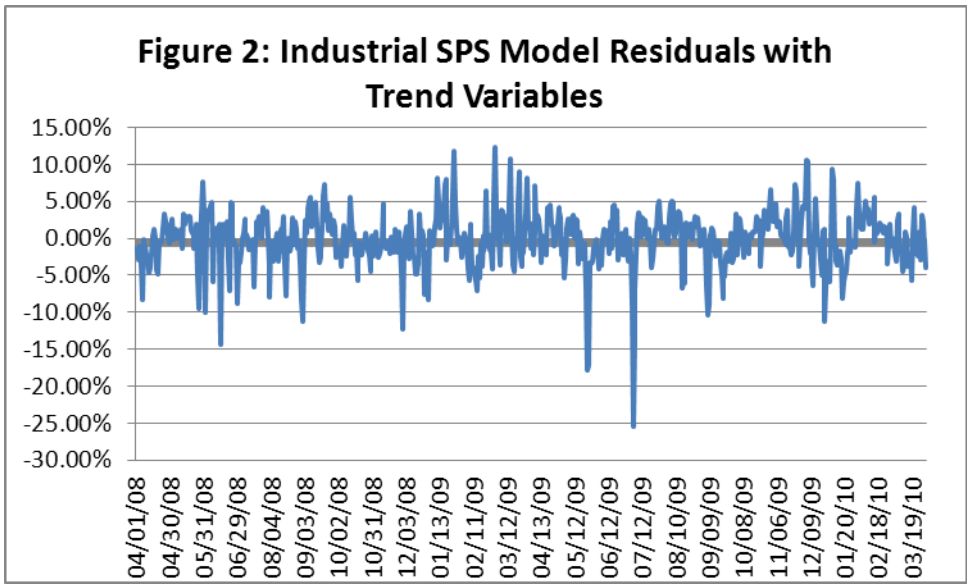


Figure 2 clearly demonstrates that the changing level of base load in the SPS class was accounted for in my model (no upward or downward trend as moving from left to right in the chart), leaving the weather coefficients free to capture pure weather responsiveness of the load. Again, the analysis could not be any more definitive that the changing level of non-weather sensitive load is not impacting the weather coefficients of my model.

Q. Given this conclusion about the modeling process, what should the Commission draw from this discussion?

A. Mr. Cecil states in his rebuttal testimony, "[c]ustomarily, Staff analyzes daily class usage over an interval of at least two years in duration to determine a weather response function to normalize usage since typically more data results in a better model." (Cecil rebuttal, page 2, lines 8-10) One need look no further than this statement for an affirmation

of the fact that two years of data is preferable when modeling the weather response of load. Of course, Mr. Cecil goes on to discuss again the impact of the changing (non-weather sensitive) load as a justification to use just one year of data. That concern has been demonstrated to be unwarranted. Therefore, the Commission should adopt the Company's modeling for the weather adjustment.

Q. What other arguments do you wish to address from Mr. Cecil's rebuttal testimony?

A. Mr. Cecil reiterates his belief that the Large Primary Service class (as well as the industrial portion of the Large General Service class) should not be weather normalized. Again, I discussed this issue at length in my rebuttal testimony. However, there are a couple of comments from Mr. Cecil's rebuttal testimony that I will respond to here. First, Mr. Cecil indicates that "Staff analyzed LP usage to determine if there was a significant weather response. Staff's results did not show a significant weather response. It did show LP's usage correlates directly with the time of the year (summer vs. non-summer) and the day of the week." (Cecil rebuttal, page 3, lines 15-18) In Staff's workpapers, I did not see any analysis of the weather sensitivity of these classes. However, my own rebuttal analysis clearly demonstrates that both statistically and logically, the evidence is overwhelming that these classes have a weather sensitive component.

Q. What other comment do you wish to respond to?

A. Mr. Cecil contends that "[o]nce the annualization is performed, estimated load data either replaces or corrects observed or missing data. To weather normalize usage of that estimated data would be to create weather response estimates on estimated data. Conclusions drawn from inferences based on estimated data would give results that would be difficult to

support." (Cecil rebuttal, page 4, lines 1-4) This concern is a bit far-fetched from my point of view. The annualization adjustments typically take one of two forms. First, there are adjustments to annualize the load to add new customers entering the rate class or remove old customers leaving the rate class. In these cases, *actual* meter data for the customer in question is typically added to or subtracted from the class load to reflect the changing status of the customer. There may be a rare case where estimated data is used, but that would be an extremely small percent of the time. Second, the number of days that customers are billed for is annualized to make sure that the bills included in the test year represent 365 days of usage. Typically this involves adjusting the billed total usage by no more than a day or two (each day represents approximately 0.3% of annual usage). So in either case (days' adjustment or rate switching), the impact of any estimates are an extremely tiny fraction of the actual meter data that makes up the class consumption records. I hardly think that these very few estimates make the resulting class level data so unreliable that we can no longer apply weather adjustments to it. If it does, there are bigger problems to address in the estimation routine.

Q. Please summarize your testimony.

A. While the weather normalization process followed by the Staff and the Company are very similar, there are two notable differences. First, the Staff failed to weather normalize classes that are obviously weather sensitive. Second, the Staff departed from their normal practice of using at least two years of data in normalization over a concern, which has been demonstrated to be a non-issue, about changes in the non-weather sensitive component of load. In both cases, the analyses presented in my rebuttal testimony and here in my

surrebuttal testimony provide clear evidence that the Company's analysis is more accurate and complete and should be adopted for purposes of weather normalizing sales in this case.

Q. Does this conclude your surrebuttal testimony?

A. Yes, it does.

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Union Electric Company d/b/a AmerenUE for Authority to File Tariffs Increasing Rates for Electric Service Provided to Customers in the Company's Missouri Service Area.	)))))	Case No. ER-2011-0028

AFFIDAVIT OF STEVEN M. WILLS

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

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

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

2. Attached hereto and made a part hereof for all purposes is my Surrebuttal Testimony on behalf of Ameren Missouri consisting of 7 pages, all of which have been prepared in written form for introduction into evidence in the above-referenced docket.

3. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct.

Steven M. Wills

Subscribed and sworn to before me this 15 day of April, 2011.

Amanda Tesdall
Notary Public

My commission expires:

Amanda Tesdall - Notary Public
Notary Seal, State of
Missouri - St. Louis County
Commission #07158967
My Commission Expires 7/29/2011