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MISSOURI PUBLIC SERVICE COMMISSION

FILE NO. ER-2014-0258

AMENDED REBUTTAL TESTIMONY

OF

STEVEN M. WILLS

ON

BEHALF OF

UNION ELECTRIC COMPANY
d/b/a Ameren Missouri

St. Louis, Missouri
January 2015

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Q. Please state your name and business address.

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

Q. What is your position with Ameren Services?

A. I am the Manager of Quantitative Analytics in the Corporate Planning Department.

Q. Did you previously provide testimony in this case?

A. No, I did not. However, I was responsible for performing the calculations for weather normalization of test year sales and for annualizing test year sales for the impacts of solar distributed generation installations that were included in the direct testimony of Company witness James Pozzo. My workpapers were provided to the parties to the case at the time direct testimony was filed by the Company.

Q. Have you testified before the Missouri Public Service Commission ("Commission") previously?

A. Yes. I have testified regarding weather normalization in each of the last several Ameren Missouri rate cases.

Q. Please describe your educational background and employment experience.

A. I received a Bachelor of Music degree from the University of Missouri-Columbia in 1996. I subsequently earned a Master of Music degree from Rice University in 1998, then a Master of Business Administration ("M.B.A") degree with an emphasis in Economics from St. Louis University in 2002. While pursuing my M.B.A., I interned at Ameren Energy in the Pricing and Analysis Group. Following the completion of my M.B.A. in May 2002, I was hired by Laclede Gas Company as a Senior Analyst in its Financial Services Department. In this role, I assisted the Manager of Financial Services in coordinating all financial aspects of rate cases, regulatory filings, rating agency studies and numerous other projects.

In June 2004, I joined Ameren Services as a Forecasting Specialist. In this role, I developed forecasting models and systems that supported the Ameren operating companies' involvement in the Midwest Independent Transmission System Operator, Inc.'s ("MISO")[1] Day 2 Energy Markets. In November of 2005, I moved into the Corporate Analysis Department of Ameren Services, where I was responsible for performing load research activities, electric and gas sales forecasts, and assisting with weather normalization for rate cases. In January 2007, I accepted a role I briefly held with Ameren Energy Marketing Company as an Asset and Trading Optimization Specialist before returning to Ameren Services as a Senior Commercial Transactions Analyst in July of 2007. I was subsequently promoted to my present position as the Manager of the Quantitative Analytics group.

[1] MISO has since changed its name to the Midcontinent Independent System Operator, Inc.

Q. What are your responsibilities in your current position?

A. In my current position, I manage a group of employees with responsibility for short-term electric load forecasting, long-term electric and gas sales and revenue forecasting, load research, weather normalization and various other analytical tasks.

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

A. The purpose of my testimony is to respond to portions of the Missouri Public Service Commission Staff ("Staff") Report – Revenue Requirement Cost of Service ("Staff Report"), including the section sponsored by Staff witness Seoung Joun Won on the topic of weather normalization of usage, the section sponsored by Michael Stahlman regarding the adjustment to annualize test year sales for customer-owned solar generator installations and the section sponsored by Robin Kliethermes regarding weather normalization of revenue. Additionally, I will update the weather normalization and solar adjustments from the Company's direct case to be consistent with the true-up period analyzed by Staff in the Staff Report, and provide an additional adjustment to annualize revenues needed to account for reduced loads at the Noranda Aluminum, Inc. ("Noranda") smelter to reflect the current level of operations as of the true-up date established for this case.

Q. Can you provide an over-arching comment on the status of these issues in the case?

A. Yes. There is only one issue for which I have significant comments with regard to Staff's analysis. That issue is the weather normalization of revenues for certain rate classes, as will be discussed further below. Other than that issue, the analysis presented by Staff and the Company are substantially similar. Over the course of several

rate cases that have occurred in recent years, the Company and Staff have consistently made strides to align the practices used with respect to weather normalization and generally to adjustments made to test year billing units. This case has further advanced that alignment. In general, the processes and approaches used by the Company and Staff are the same or very similar, and the results are also similar. It is the Company's hope and expectation that the Company and Staff will agree on the issues of weather normalization of usage and the annualization of sales for customer-owned solar installations without the need for oral testimony in front of the Commission. However, until such time that a mutually agreeable settlement of billing units can be reached, I continue to be of the opinion that the Company's position should be used to set rates in this case.

Q. Have you updated your calculations with the appropriate adjustments for weather and customer-owned solar generators since the Company's direct case was filed?

A. Yes. Similar to Staff's direct case, I have recalculated all of the weather and solar adjustments for the 12-month period ended July of 2014. Over the last several cases, the Company and Staff have made a practice of updating such adjustments to get closer alignment with the true-up date in the case. As is the case with the Staff and Company positions in this docket, the updating process has typically resulted in an update four months beyond the original test year for the case. Since the data for the update period was not available at the time of the Company's original filing, I am providing the Company's updated calculations with this rebuttal testimony.

Q. You previously mentioned that the weather normalization methodologies and results between the Company and Staff were similar. Are there any differences and if so, what are they?

A. A few differences between the Company and Staff remain, although their magnitude is small relative to the size of the adjustments being made. First, the Staff develops their own statistical models to represent the relationship between load and temperature after the Company has already created models for its direct case. While the modeling methodology is very similar, Staff has used a different time period than the Company to create the models (the model estimation period is shifted four months later than the period used by the Company) and Staff has also incorporated some different explanatory variables in an attempt to capture economic and other usage trends.

Q. How different are the results when comparing weather-normalized sales calculated by Staff to the updated values the Company has now developed?

A. The weather-normalized billed sales calculated by Staff and the Company are within 0.1% of each other on an annual basis for each rate class with the exception of the Large Primary Service class, which is within approximately 1%. These differences are primarily an artifact of the small differences in the models developed by each party, and are not statistically significant. The Company's calculations for the update period weather-normalized sales and days adjustment are attached to my testimony as Schedule SMW-R1. The annualization of the Noranda load described later in my testimony is also included in Schedule SMW-R1.

Q. Are the methodologies used to calculate the adjustment to annualize test year sales for the solar generator installations also similar?

A. Yes. With a couple of minor exceptions, the Company's and Staff's calculations are identical. The two exceptions are that Staff did not make an adjustment to the Small Primary Service or Large Primary Service classes and they also adjusted the estimated solar generation based on solar power purchase credits the Company provided to customers for generation that exceeded the customers' load. While in principle I do not believe either adjustment is necessary, the impact is very small to the point of being practically immaterial. For all intents and purposes, the Company's direct case calculations and the Staff's calculations are in alignment. However, I do recommend one new change to the calculation due to new information that has become available since the time the Company filed its direct case.

Q. What is that change?

A. The capacity factor used to calculate the solar generation associated with customer-owned installations should be updated. The Company uses a solar generation calculator developed by the National Renewable Energy Laboratory ("NREL") called PVWatts to estimate generation associated with customer-owned solar generators. A new version of PVWatts was released in September of 2014 that NREL states is significantly more accurate than the previous version. Using the updated calculator, the solar capacity factor applicable to the Company's service territory should be revised up from the 14.4% used in my initial analysis to 15.4% based on the current PVWatts estimate. The Company's update period solar annualization, including this capacity factor update, is attached to my testimony as Schedule SMW-R2.

Q. Please describe the issue associated with weather normalization of revenues that you identified above.

A. The weather normalization process described above is used to adjust test year sales volumes for the impact of abnormal weather. Those volumes, though, ultimately impact the test year normalized revenues based on the tariff rates at which the weather-related volumes are priced. In order to understand this issue, it is important to establish an understanding of the rate structures that the Company has in place. A good place to start is with the Residential Service Rate 1M.

During the summer period, Residential customers pay one rate for all kilowatt-hours ("kWh") of energy consumed. Under current tariffs, that base energy charge is $0.1136/kWh. To the extent that the weather normalization process identifies an adjustment in the volume of sales necessary for a summer month in the updated test year, the revenue impact of that adjustment is simply a product of the kWh of weather impact and the $0.1136/kWh rate. For example, the August 2013 billing month was milder than normal. The Company's analysis indicates that that milder than normal weather caused sales to be approximately 63 million kWh lower than they would have been under normal conditions. Because the 63 million kWh of usage that would be expected under normal weather conditions would be billed to customers at $0.1136/kWh, the updated test year revenues were $7.2 million (63,000,000 kWh x $0.1136/kWh = $7.2 million) lower than they are expected to be under normal weather conditions. In that case, it is quite simple to calculate the revenue impact of the weather-normalized sales.

However, in the non-summer period (defined as October through May billing months), not all kWh of usage are priced the same. For each customer, the first 750 kWh

of energy used each month are subject to a base energy charge of $0.0808/kWh. Any additional kWh of energy is priced at $0.0538/kWh. The weather normalization process can tell us the estimated impact of weather on total kWh class level sales in a given month, but it does not tell us in which pricing block those kWh occurred. For example, in the January 2014 billing month it was colder than normal. The weather normalization process indicates that the billed usage for the month was 39 million kWh higher than it would be in a January with normal weather. So in this case, the test year revenues are higher than normal by the amount of revenue associated with the 39 million kWh. However, at this point, we are left with the question - were those 39 million kWh priced at 8.08 cents each (Block 1) or 5.38 cents each (Block 2)?

In past cases, both the Company and Staff have utilized an assumption that pricing of the weather adjustment should use the same weighting of Block 1 and Block 2 prices as reflected in the total sales for that month. This is easier to understand, again, with an example. In January of 2014, total sales to Residential customers were 1,633 million kWh. Of those, 655 million kWh, or 40.8% of the total, were sold at 8.08 cents, and the remaining 968 million kWh, or 59.2%, were sold at 5.38 cents. This is observable from the Company billing system. The weather adjustment of 39 million kWh, therefore, would have also been priced with 40.8% receiving 8.08 cents and 59.2% receiving 5.38 cents. Table SMW-1 below illustrates the calculation of the weather adjustment using this assumption.

Table SMW-1

	kWh Sales	% of total Usage	Rate	Total Energy Revenue	Weather Adj. kWh	% of Adjust ment	Revenue Adjustment	Weather Normalized Sales	% of WN Sales	WN Revenue
Block 1 kWh	665,853,240	40 8%	$0 0808	$53,800,942	-15,905,188	40 8%	-$1,285,139	649,948,052	40 8%	$52,515,803
Block 2 kWh	967,776,314	59 2%	$0 0538	$52,066,366	-23,117,202	59 2%	-$1,243,705	944,659,112	59 2%	$50,822,660
Total kWh Sales	1,633,702,286	100 0 %		$105,867,307	-39,024,127	100 0%	-$2,528,845	1,594,678,159	100 0 %	$103,338,463

As shown in Table SMW-1, using the assumption described above, the weather adjustment to revenues would be a reduction of $2.5 million for January of 2014.

As previously mentioned, the process described above is the method both the Company and Staff have used to handle the weather normalization of revenues in all previous rate cases, that I am aware of. In this case, however, Staff has utilized a new methodology to perform this calculation.

Q. Can you please describe the methodology that Staff used?

A. Yes, at least at a high level, I will describe it here. Instead of assuming that the weather adjustment should be priced using the same pricing block ratios as the total kWh of sales for the month, Staff has taken an additional step of analyzing the percent of sales that occur in each tariff pricing block, and how that percent tends to change as sales levels change. For example, it is logical to assume that in our January 2014 example above, where it was colder than normal, as sales go higher and higher in response to customers' heating demand, more and more of those sales start occurring in the 2nd pricing block as more customers exceed 750 kWh of usage and their marginal consumption occurs at 5.38 cents. With this recognition, it is likely that the weather adjustment ought to be priced using a higher percentage of the sales adjustment receiving the 5.38 cent price rather than the 8.08 cent price. Staff has used a statistical analysis of

the relationship between total sales and Block 1 sales to attempt to get a more accurate revenue adjustment. Staff's adjustment for the same January 2014 billing month is represented in Table SMW-2 below.

Table SMW-2

	kWh Sales	% of total Usage	Rate	Total Energy Revenue	Weather Adj. kWh	% of Adjustment	Revenue Adjustment	Weather Normalized Sales	% of WN Sales	WN Revenue
Block 1 kWh	665,853,240	40.8%	$0.0808	$53,800,942	-2,797,193	7.2%	-$226,013	663,056,047	41.6%	$53,574,929
Block 2 kWh	967,776,314	59.2%	$0.0538	$52,066,366	36,154,203	92.6%	-$1,945,096	931,622,111	58.4%	$50,121,270
Total kWh Sales	1,633,702,286	100.0%		$105,867,307	39,024,127	100.0%	-$2,171,109	1,594,678,159	100.0 %	$103,696,198

Q. Do you agree that Staff's approach is an improvement to the historical method used to weather normalize revenues?

A. In general, yes. As I just described, it is logical that the marginal sales influenced by abnormal weather would have different pricing than the average or total sales. Staff has made an attempt to capture this fact. The specific approach Staff used is generally reasonable for the Residential and Small General Service ("SGS") classes. However, I do not believe that the approach devised by Staff, as currently constructed, is appropriate to utilize for the Large General Service ("LGS") or Small Primary Service ("SPS") classes. Also, while the approach for the Residential and SGS classes may be reasonable, there may be further improvements that can be made to it when time permits in future cases.

Q. Can you elaborate on your concern regarding the approach adopted by Staff for the LGS and SPS rate classes?

A. Yes. If the Residential rate calculation seems complicated, the LGS and SGS rates are significantly more so. There are three pricing blocks included in these rates with the usage threshold for moving from one block to another established dynamically based on the individual customer's monthly billing demand (their highest 15 minute usage from the billing month) as well as a demand charge and a seasonal component derived from prior billing months. The rate structure is often referred to as an "Hours Use" rate. Without getting too bogged down in the details of the rate calculations, there is a feature of this rate structure that is very relevant to this discussion. Under the Hours Use rate, due to the interaction between the demand and energy components of the rate, the marginal and average rates experienced by the customer are identical as long as the load factor[2] remains consistent. The implication of this is that the revenue-normalization method used previously by the Company and Staff is actually the correct way to weather normalize LGS and SPS revenues as long as the customer's demand and energy are impacted by weather proportionally. The new methodology proposed by Staff implicitly assumes that, while the weather normalization adjustment applies to the billed usage of the LGS and SPS customers, the billing demand is not impacted at all by abnormal weather. Table SMW-3 below shows the energy charge from an actual LGS customer bill calculated from its pricing block components. It also shows the same bill re-calculated with a hypothetical 10% increase and a 10% decrease in usage, intended in this case to simulate possible impacts of weather that could have occurred in that month. In one scenario demonstrated in Table SMW-3, the hypothetical

[2] Load factor is the relationship of average demand to maximum demand. It helps to indicate how efficiently a load utilizes the capacity built to serve it and therefore is related to the cost to serve a particular customer or group of customers.

abnormal weather impacts both the total usage and the billing demand. In the other, it impacts the total usage only, and the demand is left unchanged.

Table SMW-3

	Scenario Description	Usage	Billing Demand	Block 1	block 2	block 3	Energy Revenue	Average Energy Rate	Marginal Energy Rate Applicable to Weather Adjustment
	Sample Bill	93,200	185.4	27,810	37,080	28,310	$6,924.66	$0.0743	N/A
Assumption Implicit in Company Analysis	Sample Bill w/10% increase in Demand and Energy	102,520	203.9	30,591	40,788	31,141	$7,617.13	**$0.0743**	**$0.0743**
	Sample Bill w/10% decrease in Demand and Energy	83,880	166.9	25,029	33,372	25,479	$6,232.19	**$0.0743**	**$0.0743**
Assumption Implicit in Staff Analysis	Sample Bill w/10% increase in Energy Only	102,520	185.4	27,810	37,080	37,630	$7,390.66	**$0.0721**	**$0.0500**
	Sample Bill w/10% decrease in Energy Only	83,880	185.4	27,810	37,080	18,990	$6,458.66	**$0.0770**	**$0.0500**

In Table SMW-3, the method of analysis selected impacts the marginal energy rate, which is what is ultimately applied to the weather adjustment kWh. For this particular customer's bill, Staff's analysis[3] would result in the entire weather adjustment being priced at the 3rd block rate of 5 cents per kWh, while the Company's analysis (and

[3] The example in Table SMW-5 is a slight over-simplification of Staff's analysis just for illustrative purposes, but the effect of Staff's analysis is appropriately represented, in that Staff assumes a change in the customers' load factor and ends up with a marginal rate that is different from the average rate.

method used by Staff in previous cases) would result in the weather adjustment being priced at the weighted average of the 3 pricing block rates, in this case at 7.43 cents per kWh. Note that the only difference in the two calculations is whether we assume that the weather impacts the billing demand. In the first set of two scenarios and second set of two scenarios respectively, the billed usage is the same. However, in the first two scenarios, the billing demand is different from the original bill; whereas under the second two scenarios, the billing demand is un-impacted by the hypothetical abnormal weather and matches the billing demand from the original bill. The determination of which of these methods is correct is entirely dependent upon whether the billing demand was influenced by weather.

Q. Is the billing demand influenced by weather?

A. Yes, generally. Unfortunately, it is complicated to say whether it is influenced by weather to the same extent as usage, or to a lesser or greater extent. However, it is undoubtedly influenced. To demonstrate this, it is useful to look at some load research data that is collected by the Company, which captures hourly and daily usage patterns for a sample of LGS and SPS customers. Figure SMW-1 below shows the daily usage of an LGS customer plotted vs. temperature. Figure SMW-2 shows the same customer's daily maximum demand plotted vs. temperature. Figures SMW-3 and SMW-4 below show the same things, respectively, for a different LGS customer.

Figure SMW-1

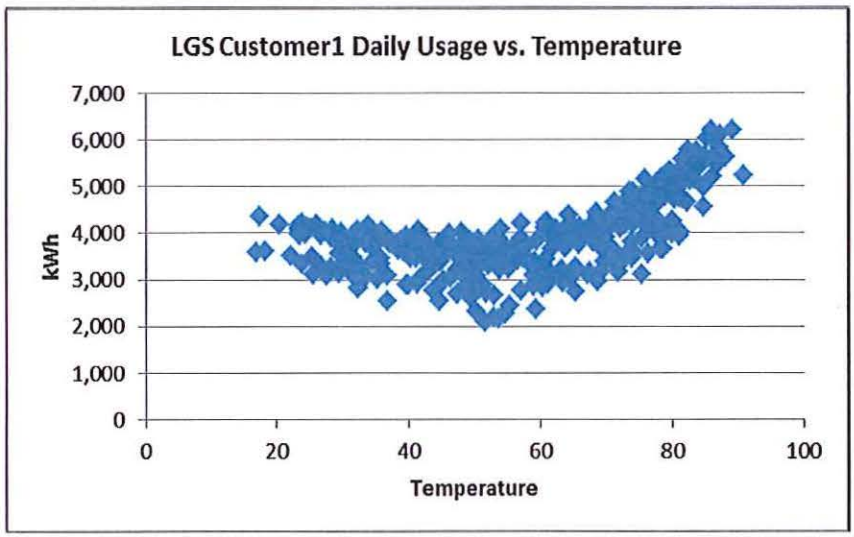


Figure SMW-2

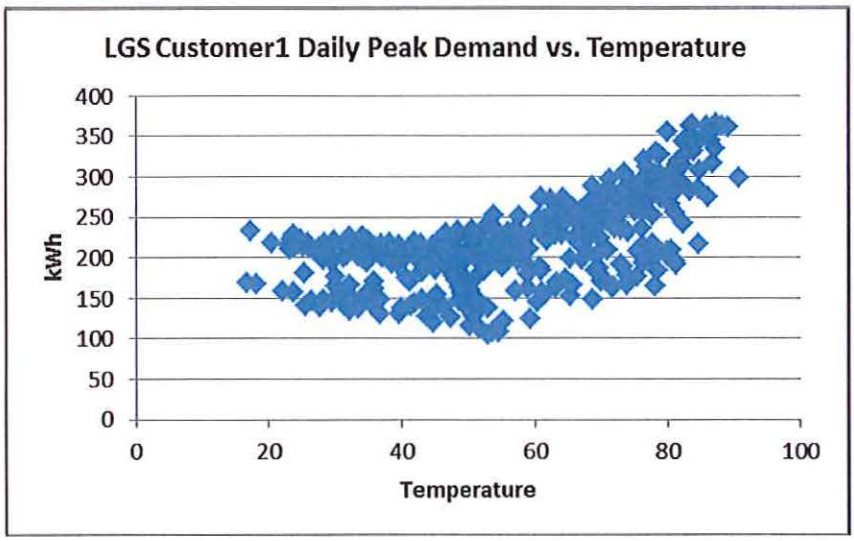


Figure SMW-3

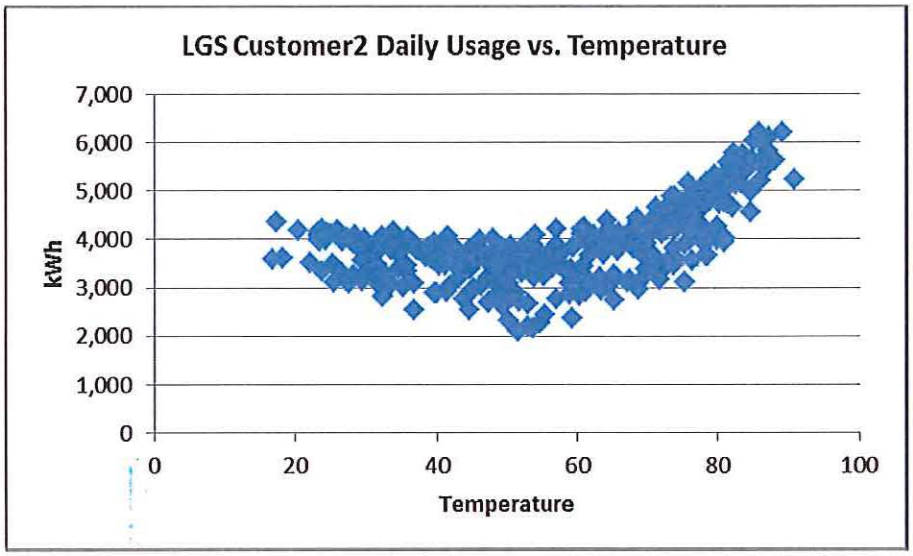
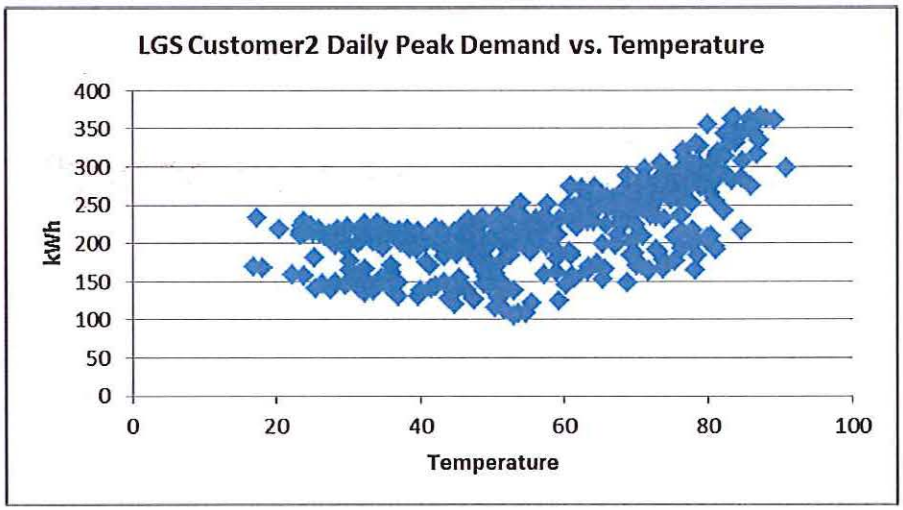


Figure SMW-4



The key thing to notice in these graphs is that for each customer, in both the usage and peak demand graphs, the data slopes up similarly as temperatures become more extreme on either the right side of the graph (extreme warm temperatures) or the left side (extreme cold temperatures). The slopes of heating and cooling responses are similar for usage and peak demand. From these examples, it is clear that weather influences both

usage and demand in a similar fashion[4]. The reason it is difficult to assess which effect is more significant is that the usage is influenced by the weather experienced over an entire month, whereas the billing demand is influenced only by the weather on the days immediately around the time that the billing demand occurs. Depending on the weather patterns in any given month and the timing when each individual customer experiences their billing demand, the adjustment needed to weather normalize the billing demand may be bigger, smaller, or very similar to the adjustment needed to weather normalize usage. One thing that is certain though, the true billing demand adjustment needed is in almost all cases something other than zero, which is the assumption implicit in Staff's analysis.

Q. What do you recommend to handle this situation?

A. I recommend continuing the practice utilized by the Company in this case and by Staff in prior cases to weather normalize LGS and SPS revenues. This is the most reasonable and realistic way to accurately adjust the revenues. From the graphs above, it is very clear that customers' usage and demands are influenced to a similar degree by weather. While the weather may influence demand more one month and usage more another month, in aggregate across all months and customer bills, the same type of weather is experienced across the course of the year. The unique design of the Hours Use rate that holds the marginal and average rates paid by customers constant as long as usage and demand respond proportionally makes it unnecessary and even inappropriate to go through the steps that Staff has taken for these particular classes.

[4] The principle at work in the graphs of the customers selected would be generally applicable to other customers in the class. It would be almost impossible to imagine a scenario where a customer had a load that increased daily usage as temperature rises without that increase being also reflected during the peak demand period of the day.

Q. Can you please summarize your testimony with respect to weather normalization of revenues?

A. Staff has introduced a new analysis in this case in an attempt to do a more accurate job pricing the weather adjustments to test year usage. Inasmuch, their efforts were generally a step in the right direction as it is more accurate for the Residential and SGS rate classes to attribute the weather adjustment specifically to the pricing blocks outlined in the tariffs. For these rate classes, I recommend adopting Staff's analysis. With respect to the LGS and SPS rate classes, Staff's analysis is unnecessary due to the unique rate design of the classes that allows the pricing of marginal usage at average rates as long as the relationship between usage and demand holds. The evidence shows that usage and demand do respond similarly to weather, whereas Staff's analysis assumes no weather impact on demand. In this case, I recommend rejecting the new analysis and continuing to price LGS and SPS weather adjustments at the average rate experienced in the billing month. I estimate that the changes introduced by Staff in pricing weather revenues created a difference of $6.7 million in normalized revenues relative to the Company's method. By adopting most of the adjustment proposed by Staff, I propose increasing the normalized revenues by $4.1 million. Staff's adjustment was overstated by approximately $2.6 million by inappropriately applying an adjustment to the LGS and SPS classes when it was not needed.

Q. Please describe the issue you mentioned at the beginning of your testimony regarding the load of the Noranda smelter.

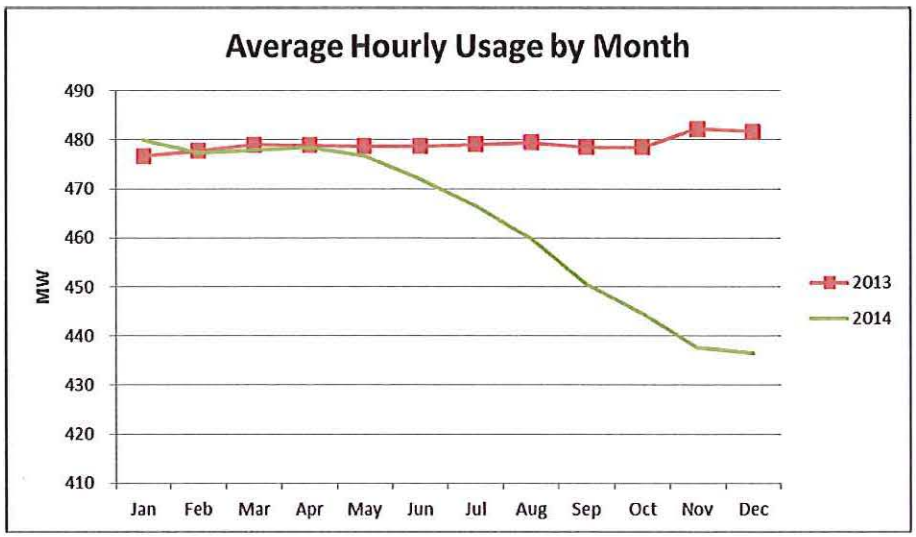
A. Noranda is the Company's largest customer by far, typically representing over 10% of the total retail sales made by Ameren Missouri. Historically, other than a

period of time when the smelter was impacted by an ice storm that damaged operating equipment, Noranda's load is very stable and consistent. However, during the second half of 2014, there was a gradual reduction in usage that resulted in the load eventually settling at a new usage level, lower than Noranda's historical average consumption. As of the time of the true-up date in the case (December 31, 2014) and also as of the writing of this testimony, Noranda is still operating at that reduced-consumption level. Because Noranda is such a large contributor to the Company's revenues, rates must be adjusted to the level at which Noranda's load is currently operating in order to give the Company an opportunity to recover its revenue requirement when rates go into effect.

Q. Can you please provide some historical context for the level of Noranda's load during the test year relative to where it was as of the true-up date in this case?

A. Figure SMW-5 below is a graph of Noranda's average hourly consumption by month for the last two years.

Figure SMW5



Notice the steady decline in usage that began around the May timeframe and persists through the end of 2014. By the last two months of 2014, Noranda's load was more than 9% below the previous year's level. Since this customer represents over $150 million in revenue to the Company, failure to recognize this significant revenue shortfall in setting rates could materially impact the Company's ability to collect the revenue requirement established by the Commission in this case.

Q. Are you aware of the cause of the load decline and whether it is anticipated to be permanent?

A. Based on statements made by Noranda on their 3rd quarter earnings call, it appears to be caused by a higher than usual level of failures of pots used in the aluminum smelting process. They did indicate an expectation that this issue would largely be resolved by early 2015. So far though, there is no evidence of even a modest ramp-up toward historical usage levels.

Q. Given the expectation of a return to normal operations stated by Noranda, why should an annualization to lower load levels be adopted?

A. Generally the regulatory practice in Missouri is to do the best job possible of matching revenues and expenses as of a given point in time; here the true-up date in this case. There are often significant changes to other cost or revenue items relevant to ratemaking that occur after the true-up date but prior to rates taking effect that are simply excluded from the rate case because they did not occur by the true-up date. This instance should not be different. Noranda's usage level is beyond Ameren Missouri's control and, while it is well and good that they expect it to return to normal levels sometime this year, it is the Company's earnings that will suffer if they fail to do so.

Q. What level of annualized test year usage do you recommend be utilized for Noranda's load in setting rates for this case?

A. For the most recent two months of bills applicable to November and December of 2014, the Noranda load appears to have stabilized around a level of 437 megawatts ("MW") per hour. Notice in Figure SMW-5 above that prior to that, the load was still declining from month to month. This appears to be the on-going level of usage until whatever issue they are experiencing may be resolved. I recommend that the usage of 437 MW per hour be annualized for the entire year. This would result in annual usage for Noranda of just over 3.8 million megawatt-hours for the year. A similar percent reduction to the test year billing demands should also be made for the determination of normalized revenues.

Q. Does this conclude your rebuttal testimony?

A. Yes, it does.

Weather Normalized and Annualized Class Sales for 12 Months Ending July 2014

Ameren Missouri - Residential Test Year Sales - Revenue Month			
Month	Actual	Normal	Ratio
8	1,167,356,049	1,230,304,126	105.4%
9	1,279,115,250	1,200,553,815	93.9%
10	889,397,896	789,954,597	88.8%
11	847,289,594	821,296,598	96.9%
12	1,279,614,791	1,238,708,017	96.8%
1	1,638,415,336	1,599,391,209	97.6%
2	1,541,085,095	1,424,432,764	92.4%
3	1,287,283,697	1,161,350,731	90.2%
4	925,322,067	904,988,328	97.8%
5	790,604,443	755,299,888	95.5%
6	1,030,072,037	904,445,498	87.8%
7	1,248,631,632	1,249,355,972	100.1%
Total	13,924,187,887	13,280,081,544	95.4%

Ameren Missouri - Small General Service Test Year Sales - Revenue Month			
Month	Actual	Normal	Ratio
8	303,629,867	312,256,997	102.8%
9	320,704,925	310,186,831	96.7%
10	271,119,853	255,817,763	94.4%
11	249,310,238	245,998,470	98.7%
12	303,395,492	297,916,526	98.2%
1	353,288,126	347,227,728	98.3%
2	339,678,465	321,985,340	94.8%
3	303,881,716	285,465,001	93.9%
4	257,504,573	254,674,020	98.9%
5	245,397,061	239,739,583	97.7%
6	280,382,246	264,135,436	94.2%
7	312,836,158	312,591,056	99.9%
Total	3,541,128,720	3,447,994,750	97.4%

Ameren Missouri - Large General Service Test Year Sales - Revenue Month			
Month	Actual	Normal	Ratio
8	719,971,119	731,822,947	101.6%
9	765,337,847	751,698,897	98.2%
10	674,737,756	650,965,995	96.5%
11	614,653,966	609,964,365	99.2%
12	671,098,160	663,966,888	98.9%
1	731,919,436	723,328,461	98.8%
2	694,715,991	668,894,429	96.3%
3	653,202,674	626,367,403	95.9%
4	607,539,505	603,262,291	99.3%
5	623,166,647	613,762,016	98.5%
6	698,125,062	675,202,087	96.7%
7	741,047,697	739,914,129	99.8%
Total	8,195,515,860	8,059,149,907	98.3%

Ameren Missouri - Small Primary Service Test Year Sales - Revenue Month			
Month	Actual	Normal	Ratio
8	317,291,559	321,553,223	101.3%
9	337,805,231	333,780,966	98.8%
10	308,638,513	300,220,035	97.3%
11	281,472,690	280,251,742	99.6%
12	292,032,508	290,646,980	99.5%
1	303,126,007	301,520,006	99.5%
2	301,440,802	296,890,402	98.5%
3	295,570,481	290,494,339	98.3%
4	290,780,644	290,018,350	99.7%
5	283,581,179	280,669,122	99.0%
6	311,111,310	303,035,701	97.4%
7	326,940,148	325,382,898	99.5%
Total	3,649,791,072	3,614,463,765	99.0%

Ameren Missouri - Large Primary Service Test Year Sales - Revenue Month			
Month	Actual	Normal	Ratio
8	363,192,166	366,452,914	100.9%
9	365,734,148	364,280,586	99.6%
10	347,145,952	341,039,562	98.2%
11	327,971,661	326,992,924	99.7%
12	322,433,726	322,771,431	100.1%
1	321,291,885	321,181,909	100.0%
2	296,571,143	296,610,628	100.0%
3	278,280,754	278,484,724	100.1%
4	311,263,078	311,748,769	100.2%
5	311,646,366	309,530,486	99.3%
6	337,741,429	331,007,712	98.0%
7	353,350,226	350,578,216	99.2%
Total	3,936,622,534	3,920,679,861	99.6%

Ameren Missouri - LTS Test Year Sales - Revenue Month			
Month	Actual	Annualized	Ratio
8	356,423,566	325,128,000	91.2%
9	356,715,009	325,128,000	91.1%
10	344,507,754	314,640,000	91.3%
11	355,976,902	325,128,000	91.3%
12	346,725,741	314,640,000	90.7%
1	358,325,347	325,128,000	90.7%
2	357,119,161	325,128,000	91.0%
3	320,761,619	293,664,000	91.6%
4	355,462,442	325,128,000	91.5%
5	344,426,585	314,640,000	91.4%
6	354,714,758	325,128,000	91.7%
7	339,854,682	314,640,000	92.6%
Total	4,191,013,566	3,828,120,000	91.3%

Days' Adjustment for 12 Months Ended July 2014

Class	Days' Adjustment (kWh)
RES	-26,863,159
SGS	-7,897,039
LGS	-14,628,095
SPS	2,167,160
LPS	-12,333,822

Customer-Owned Solar Annualization Adjustment for 12 Months Ending July 2014

Customer Owned Solar Annualization Adjustment					
Month	RES	SGS	LGS	SPS	LPS
8	1,946,458	1,604,935	1,282,396	42,840	7,169
9	1,756,143	1,482,439	1,200,675	29,791	6,720
10	1,339,219	1,164,488	945,208	24,157	5,449
11	904,883	814,201	669,863	17,565	3,962
12	551,272	513,732	439,982	10,622	2,666
1	641,061	611,317	530,423	13,176	3,350
2	531,308	541,250	463,368	12,242	3,113
3	974,846	1,048,516	926,564	23,155	6,440
4	844,230	962,094	895,394	20,118	6,851
5	673,455	819,445	762,014	19,142	7,474
6	320,757	509,649	395,607	10,126	3,918
7	54,280	118,251	75,828	1,726	0
Total	10,537,911	10,190,318	8,587,323	224,658	57,113

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariffs to Increase Its Revenues for Electric Service.	)))	Case No. ER-2014-0258

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 as Manager, Quantitative Analytics.

2. Attached hereto and made a part hereof for all purposes is my Amended Rebuttal Testimony on behalf of Union Electric Company d/b/a Ameren Missouri consisting of 20 pages, and Schedule(s) SMW-R1 through SMW-R2, all of which have been prepared in written form for introduction into evidence in the above-referenced docket.

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

Steven M Wills
Steven M. Wills

Subscribed and sworn to before me this 23rd day of January, 2015.

Becki J. Eaves
Notary Public

My commission expires:

BECKIE J. EAVES
Notary Public - Notary Seal
State of Missouri
Commissioned for St. Louis City
My Commission Expires: February 21, 2018
Commission Number: 14938572