Weather Normalization Results Support
Test Year Ending December 31, 2012

MidAmerican Energy Company
Rate RED Weather Normalization Calculation
2014 South Dakota Electric Rate Case

I. Monthly Usage and Weather Data

Rate	Month	Billed Sales	Billed Sales Above 1000 kWh	Bills	Total Days Billed	Total Billed HDD 55	Total Billed CDD 65	Total Normal Billed HDD 55	Total Normal Billed CDD 65	Average Billing Days Per Bill	Calendar Days per Month
RED	201301	2,033,213	1,451,535	597	20,420	688,088	-	691,989	-	34	31
RED	201302	1,770,245	1,199,026	595	17,401	538,194	-	580,766	-	29	28
RED	201303	1,653,083	1,086,543	595	17,402	514,053	-	445,804	-	29	31
RED	201304	1,317,080	778,872	597	17,637	341,978	-	249,160	-	30	30
RED	201305	979,800	472,797	599	17,505	166,494	7,332	80,581	12,623	29	31
RED	201306	778,781	323,543	601	18,684	12,954	39,373	10,136	56,232	31	30
RED	201307	889,638	400,422	601	17,935	-	167,243	-	141,612	30	31
RED	201308	886,842	418,682	602	18,180	-	124,868	-	166,741	30	31
RED	201309	924,825	427,294	608	18,581	-	164,954	453	113,682	31	30
RED	201310	775,780	323,278	610	18,023	12,510	55,078	36,234	32,197	30	31
RED	201311	987,354	459,775	612	18,079	203,156	5,132	162,362	2,017	30	30
RED	201312	1,639,358	1,045,773	632	19,966	533,759	-	474,909	-	32	31

Rate	Month	Billing kWh per Customer	Billing kWh per Customer per Day	Actual Billing HDD 55/Day	Actual Billing CDD 65/Day	Normal Billing HDD 55/Day	Normal Billing CDD 65/Day	Normal Calendar HDD 55/Day	Normal Calendar CDD 65/Day
RED	201301	3,403	99.57	33.70	0.00	33.89	0.00	34.71	0.00
RED	201302	2,977	101.73	30.93	0.00	33.38	0.00	29.89	0.00
RED	201303	2,778	94.99	29.54	0.00	25.62	0.00	18.74	0.00
RED	201304	2,205	74.68	19.39	0.00	14.13	0.00	7.40	0.33
RED	201305	1,636	55.97	9.51	0.42	4.60	0.72	1.16	1.74
RED	201306	1,296	41.68	0.69	2.11	0.54	3.01	0.00	6.23
RED	201307	1,481	49.60	0.00	9.32	0.00	7.90	0.00	9.55
RED	201308	1,473	48.78	0.00	6.87	0.00	9.17	0.00	7.52
RED	201309	1,520	49.77	0.00	8.88	0.02	6.12	0.80	2.73
RED	201310	1,271	43.04	0.69	3.06	2.01	1.79	6.29	0.26
RED	201311	1,613	54.61	11.24	0.28	8.98	0.11	19.40	0.00
RED	201312	2,596	82.11	26.73	0.00	23.79	0.00	32.48	0.00

Billing kWh per customer per day and Actual billing HDD and CDD per day are used in the weather normalization regression model.

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I. Monthly Usage and Weather Data

II. Weather Normalization Model (Use per customer per day vs. CDD and HDD per day)

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.9918
R Square	0.9837
Adjusted R Square	0.9801
Standard Error	3.2294
Observations	12

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	2	5660.7570	2830.3785	271.3935	9.03898E-09
Residual	9	93.8615	10.4291		
Total	11	5754.6185			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	35.9353	2.4628	14.5915	0.0000	30.3642	41.5065	30.3642	41.5065
HDD 55/Day	1.9428	0.1051	18.4824	0.0000	1.7050	2.1806	1.7050	2.1806
CDD 65/Day	1.6088	0.3946	4.0772	0.0028	0.7162	2.5014	0.7162	2.5014

Weather normalization model is calculated using Excel and models actual billed use per customer per day against actual billed HDD and CDD per day.

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I. Monthly Usage and Weather Data

III. Billed Sales and Revenue Adjustment

Winter Usage	1st Step Percentage	Actual Use/Bill	Actual % in 2nd Step	Weather Normalized Use/Bill	Weather Normalized % in 2nd Stp	Step 1 Adjustment	Step 2 Adj. Adjustment	HDD Weather Normalization Adjustment	CDD Weather Normalization Adjustment	Total Weather Normalization Adjustment
3,403	71.4%	3403	71.4%	3416	71.6%	(1,599)	9,176	7,577	-	7,577
2,977	67.7%	2977	67.7%	3116	69.8%	(10,819)	93,527	82,708	-	82,708
2,778	65.7%	2778	65.7%	2555	62.5%	3,863	(136,454)	(132,591)	-	(132,591)
2,205	59.1%	2205	59.1%	1903	54.7%	(23,747)	(156,577)	(180,324)	-	(180,324)
1,636	48.3%	1636	48.3%	1372	44.4%	(50,347)	(108,052)	(166,911)	8,512	(158,398)
1,271	41.7%	1296	41.5%	1332	42.3%	6,212	15,436	(5,475)	27,123	21,648
1,613	46.6%	1481	45.0%	1412	43.5%	(9,668)	(31,566)	-	(41,234)	(41,234)
2,596	63.8%	1473	47.2%	1585	49.7%	11,715	55,648	-	67,364	67,364
		1520	46.2%	1386	43.2%	(18,632)	(62,974)	880	(82,486)	(81,606)
Summer Usage	1st Step Percentage	1271	41.7%	1286	41.9%	3,676	5,604	46,091	(36,811)	9,281
		1613	46.6%	1476	44.6%	(26,930)	(57,334)	(79,254)	(5,011)	(84,265)
1,296	41.5%	2596	63.8%	2415	61.2%	(1,225)	(113,107)	(114,332)	-	(114,332)
1,481	45.0%	W Slope:	0.0001455	Winter kWh Adjustment:		(107,128)	(463,218)			(604,174)
1,473	47.2%	S Slope:	0.0002234	Summer kWh Adjustment:		(10,373)	(23,455)			
1,520	46.2%			Winter Revenue Rate:		$ 0.0497	$ 0.0180			
				Summer Revenue Rate:		$ 0.0634	$ 0.0610			
				Winter Revenue Adjustment:		$ (5,324)	$ (8,338)			
				Summer Revenue Adjustment:		$ (658)	$ (1,431)			

The differences normal and actual billed HDD and CDD per day are multiplied by the respective model coefficients to get a normalization amount per day, which is then multiplied by the average billing days in the month (per bill) and the total number of bills in the month to determine the total weather adjustment or the billing month.

Normalization amounts by step are calculated for each month by estimating the difference in the split between the first and second step of the rate between actual use per month and weather normalized use per month. The difference between these splits is used to allocate the monthly adjustment between setp.

The adjustments in each step are multiplied by the respective rates to calculate a revenue adjustment amount.

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I. Monthly Usage and Weather Data

IV. Unbilled Sales and Revenue Adjustment

HDD Weather Adjustment Actual Billed to Normal Calendar	CDD Weather Adjustment Actual Billed to Normal Calendar	Weather Normalized Calendar Use per Cust. per Day	Weather Normalized Monthly Calendar Sales
1.97	-	101.54	1,880,619
(2.01)	-	99.72	1,660,205
(20.98)	-	74.02	1,365,300
(23.29)	0.54	51.92	930,356
(16.22)	2.13	41.88	777,436
(1.35)	6.64	46.97	846,681
-	0.36	49.96	930,649
-	1.04	49.82	930,106
1.55	(9.88)	41.44	756,322
10.87	(4.50)	49.41	935,098
15.86	(0.46)	70.02	1,285,411
11.17	-	93.28	1,826,359
			14,124,542

unbilled sales adj. step 1		33.6%	(162,715)
unbilled sales adj. step 2		66.4%	(321,074)
unbilled revenue adj. step 1	$	0.0497	$ (8,087)
unbilled revenue adj. step 2	$	0.0180	$ (5,779)

Actual Billed Sales:	14,635,999	
W.N. Billed Sales:	14,031,825	(604,174) adjustment
Actual Unbilled Sales:	576,507	
W.N. Unbilled Sales:	92,718	(483,789) adjustment
Actual Calendar Sales:	15,212,506	
W.N. Calendar Sales:	14,124,542	

The differences normal calendar HDD and CDD per day and actual billed HDD and CDD per day are multiplied by the respective model coefficients to get a normalization amount per calendar day, which is then multiplied by the calendar days in the month and the total number of bills in the month to determine total calendar month weather normalized sales.

The difference between annual weather normalized billed sales and annual weather normalized calendar sales is assumed to be weather normalized unbilled sales. The difference between weather normalized and actual unbilled sales is the unbilled sales adjustment, which is allocated to step based on the weather normalized split for January and December. The adjustment amount for each step is multiplied by the respective rate to calculate an unbilled revenue adjustment amount.