WISCONSIN ELECTRIC POWER COMPANY
Comparison of AS FILED and Modified Cost of Service Study Results

Results of Company ECOS Study - As Filed

Line No.	Customer Class	Projected Sales Revenue (1)	Revenue Requirement (2)	Revenue Increase (3)	% Increase (4)	% of System Average (5)
1	Small Customer Class	30,663,030	42,953,806	12,290,776	40.08%	120.3%
2	Large Customer Class	27,527,644	34,651,350	7,123,706	25.88%	77.7%
3	Mines Customer Class	67,477,017	89,879,293	22,402,276	33.20%	99.6%
4	Street Lighting	569,167	818,288	249,122	43.77%	131.3%
5	Total w/o Special Contracts	126,236,858	168,302,738	42,065,880	33.32%	100.0%

Results of Company ECOS Study - As Adjusted

Line No.	Customer Class	Projected Sales Revenue (1)	Revenue Requirement (2)	Revenue Increase (3)	% Increase (4)	% of System Average (5)
1	Small Customer Class	30,663,030	44,012,351	13,349,321	43.54%	130.4%
2	Large Customer Class	27,527,644	35,660,270	8,132,626	29.54%	88.5%
3	Mines Customer Class	67,477,017	87,963,623	20,486,606	30.36%	91.0%
4	Street Lighting	569,167	733,926	164,760	28.95%	86.7%
5	Total w/o Special Contracts	126,236,858	168,370,171	42,133,313	33.38%	100.0%

Wisconsin Electric Power Company
Cost of Service Study Results
Company As Filed

Line No.	Rate Class	Rate Base	Projected Sales Revenues	Adjust NOI	ROR	Indexed ROR	Income @ 7.66%	Income Deficiency (Excess)	Deficiency (Excess)	% Revenue Increase
		(a)	(b)	(c)	(d) = (c)/(a)	(e)	(f) = 7.66% x (a)	(g) = (f) - (c)	(h) = (g) x GRCF	(i) = (h) / (b)
1	Small Cust.	94,132,379	30,663,030	(150,087)	-0.16%	14.5	7,210,540	7,360,628	12,290,776	40.08%
2	Med. Cust.	1	0.10	0.06	6.01%	-547.6	0	0	0	27.56%
3	Large Cust.	55,027,262	27,527,644	(51,115)	-0.09%	8.5	4,215,088	4,266,203	7,123,706	25.88%
4	Mines	139,033,637	67,477,017	(2,766,166)	-1.99%	181.3	10,649,977	13,416,143	22,402,276	33.20%
5	Lighting & Other	2,202,599	569,167	19,527	0.89%	-80.8	168,719	149,192	249,122	43.77%
6	Juris. w/o S.C.	290,395,878	126,236,858	(2,947,842)	-1.02%	92.5	22,244,324	25,192,166	42,065,880	33.32%
7	Special Contracts	3,129,145	1,194,162	(273,435)	-8.74%	796.2	239,692	513,128	856,821	71.75%
	Total	**293,525,022**	**127,431,020**	**(3,221,277)**	**-1.10%**	100.0	**22,484,017**	**25,705,294**	**42,922,701**	**33.68%**
					Target ROR	7.66%		GRCF	1.6698	

WISCONSIN ELECTRIC POWER COMPANY

CASE U-15981

TILDEN MINING CO., L.C. AND EMPIRE IRON MINING PARTNERSHIP
First Set of Discovery Requests

TM-WE-01: On page 13 of his direct testimony, Mr. Rogers states, "the allocator loss factors are based on our most recent loss study, which was developed in 2004 using data from 2003." Please provide a complete copy of WEPCo's loss study that was developed in 2004 using 2003 data.

Response: The most recent loss study is attached. This the same loss study that was provided in response to data request TM-WE-86 in Case U-15500.

Answered by: Eric Rogers
Date: September 11, 2009

We Energies

Electric System Loss Study

Prepared by:

Electric Distribution Planning
Steve Pecha
Brian Lukecart
Amanda Pachniak

Forecasting & Load Research
Eric Rogers
John Schmid

Analysis completed: August 2004
Report prepared: October 2004

We Energies

Electric System Loss Study

August 2004

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Electric System Loss Study

Executive Summary

The system loss study was divided into two main parts: The Loss Engineering Analysis and the Loss Allocation Analysis.

The Loss Engineering Analysis was headed by Steve Pecha with assistance from Brian Lukecart and Amanda Pachniak. This consisted of performing load-flow analyses on samples of substation transformers and primary feeder conductors. Manufacturer's ratings for line transformers were also researched and tabulated.

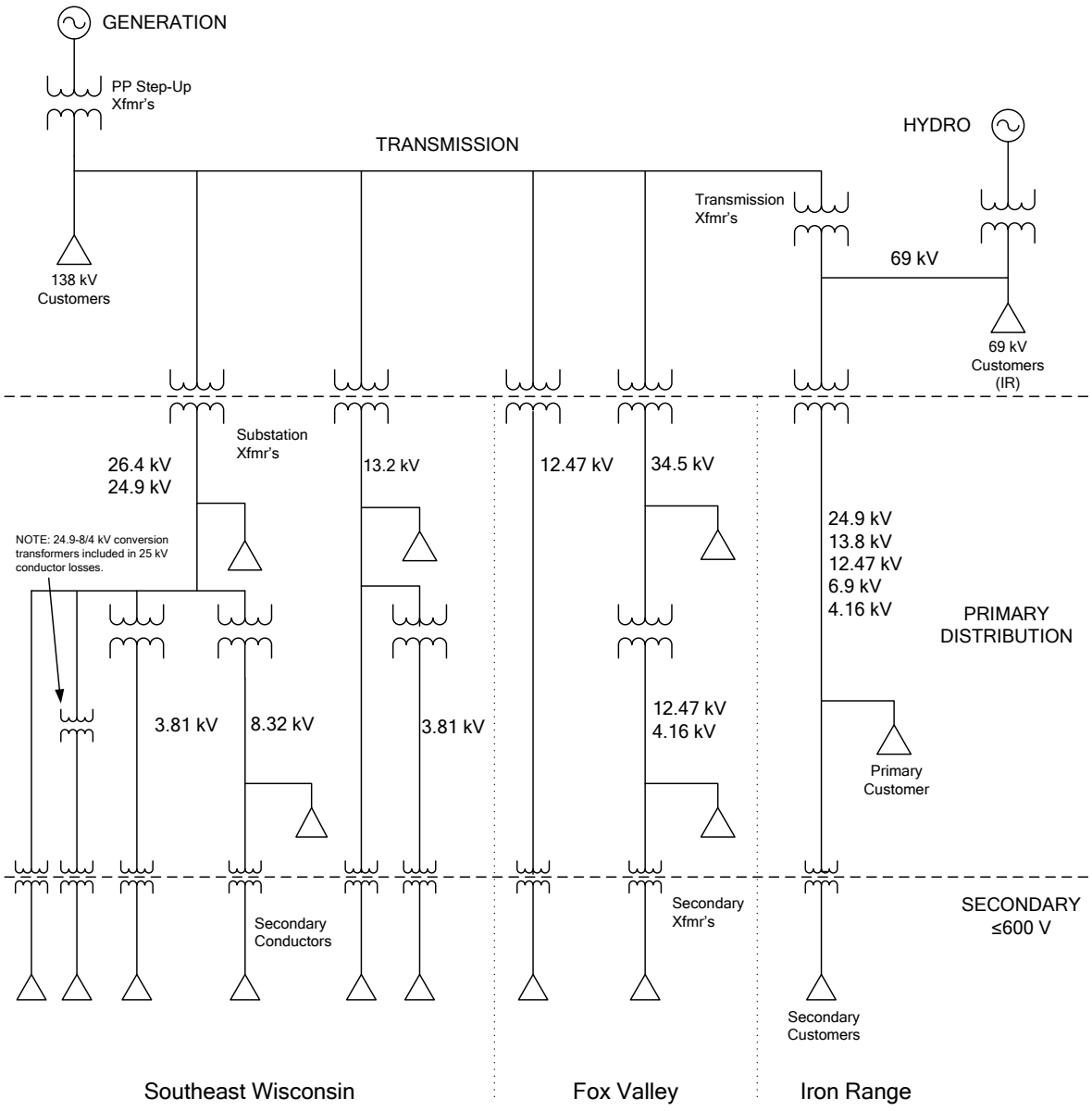
The Loss Allocation Analysis was headed by Eric Rogers with assistance from John Schmid. This consisted of applying the results of the Loss Engineering Analysis to the hourly loads of each customer class and adding up the results.

The results were used in the 2005 budget forecast and 2006/2007 test year forecasts, which were prepared in September 2004. These loss factors will also be used in future class load analyses, upon which the demand allocators for cost-of-service studies are based.

System Description

A detailed model of the We Energies' electric system was developed for the purpose of allocating energy losses to the various distribution system voltage levels and major components of the system. A schematic of the system model is shown in Figure 1. The principal components in the model are: (1) the transmission system (including generation step-up transformers, transmission lines and transmission transformers), (2) distribution substation transformers, (3) primary distribution feeders, (4) line transformers, and (5) secondary conductors.

Figure 1. System Model for Loss Allocation Study



Common loss factors provided by the American Transmission Company apply to both the Wisconsin and Michigan portions of the transmission system.

The distribution system is that portion of the electrical system operating at or below 34.5 kV. It is divided into three geographic regions: Southeast Wisconsin, Fox Valley, and Iron Range. Each region is further defined by its characteristic primary operating voltages.

In southeast Wisconsin, the predominant distribution voltages are 24.9Y/14.4 kV, 13.2Y/7.62 kV and 8.32Y/4.8 kV, with small amounts of 3.81Y/2.2 kV. In addition, a 13.2 kV sub-transmission system serves a small portion of the city of Milwaukee, and 26.4 kV sub-transmission circuits serve some of the urban areas in the cities of Milwaukee, Racine and Kenosha.

In the Fox Valley region, the distribution system is comprised of the 34.5 kV, 12.47Y/7.2 kV and 4.16Y/2.4 kV systems.

A variety of system voltages are utilized in the Iron Range region. These include 24.9Y/14.4 kV, 13.8Y/7.96 kV, 13.8 kV, 12.47Y/7.2 kV, 6.9 kV, and 4.16Y/2.4 kV.

Table 1 lists the designations used in the loss allocation results for transmission and distribution system components.

Table 1. Loss Allocation Designations for System Components

Region	Designation	System Component	# on System	# Studied
ALL	TRAN	Transmission System (Includes Generation Step-Up Xfmr's, Transmission Lines and Xfmr's)	N/A	N/A
SEW	SE1A	138 - 26.4 kV Substation Xfmr's (K/J)	19	19
	SE1B	138 - 24.9 kV Substation Xfmr's (K/Z)	98	96
	SE2A	138 - 13.2 kV Substation Xfmr's (K/H)	16	14
	SE2B	138 - 13.2 kV Substation Xfmr's (K/W)	22	21
	SE3A	26.4/24.9 - 8 kV Substation Xfmr's (J/X, Z/X)	338	286
	SE3B	13.2 - 3.81 kV Substation Xfmr's (W/E)	6	5
	SE3A	26.4 - 3.81 kV Substation Xfmr's (J/E)	23	15
	SE1	138 - 24.9Y/14.4 Feeders (Z)	349	29
	SE1	138 - 26.4 kV Lines (J)	113	1
	SE2	138 - 13.2Y/7.62 Feeders (W)	199	14
	SE2	138 - 13.2 kV Lines (H)	108	9
	SE3	26.4/24.9 - 8.32Y/4.8 kV Feeders (X)	731	30
	SE3	26.4/24.9 - 3.81Y/2.2 kV Feeders (E)	91	13
	SE3	13.2 - 3.81Y/2.2 kV Feeders (E)	28	7
FV	FV1A	138 - 34.5 kV Substation Xfmr's (K/R)	19	18
	FV2A	138 - 12.47 kV Substation Xfmr's (K/F)	5	5
	FV2B	34.5 -12.47 kV Substation Xfmr's (R/F)	36	30
	FV2C	34.5 - 4.16 kV Substation Xfmr's (R/E)	26	3
	FV1	138 - 34.5 kV Lines (R)	55	14
	FV2	138 - 12.47Y/7.2 kV Feeders (F)	20	10
	FV2	34.5 -12.47/4.16 kV Feeders (E)	211	20
IR	IR1A	69 - 24.9/13.8/12.47/6.9/4.16 kV Substation Xfmr's	23	13
	IR1	69 - 24.9/13.8/12.47/6.9/2.4 kV Feeders (Z,W,F,M,E)	59	12

Loss Engineering Analyses

Compared to the previous system loss study which was completed in 1993, the approach used in this study was appreciably affected by the implementation of advanced computer tools for distribution system management (CADOPS) and electrical distribution system analysis (FeederAll), both of which are products of the Distribution Information Systems Division of ABB, Inc. In addition to these software applications, advances made in the area of electronic substation metering allowed for the analysis of individual feeder loads. Up-to-date distribution circuit models were available from the CADOPS system. The availability of enhanced metering information provided for more accurate and efficient analysis of hourly load data through the use of the Substation Metering Information System (SMIS). The FeederAll analysis program provided enhanced functionality and the capability to perform load allocation and load flow analyses that included the calculation of primary conductor losses.

The majority of the loss analysis study involved the evaluation of losses associated with line conductors and transformers on the distribution system. The Distribution Planning Development Group evaluated the technical losses for primary distribution line conductors, substation transformers, and line transformers. The analyses for transformers consisted of determining both load losses (transformer copper losses) and no load losses (transformer core losses) for substation and line transformers. Primary conductor load losses (line losses) were determined by performing load flows on sample groups of feeders selected to represent the major distribution voltages in the SEW, FV and IR service territories. Distribution loads were allocated to each feeder using the actual 2003 coincident system peak metered data obtained from the SMIS. Each circuit configuration was extracted from the CADOPS database for the corresponding time period.

Technical Loss Methodology

TRANSMISSION SYSTEM LOSSES

Transmission system losses were provided by the American Transmission Company. The latest data available is for the entire ATC footprint which includes all portions of the We Energies' system. Average annual transmission losses of 1.94% were used for this loss study. This figure is inclusive of generation step-up transformers, transmission lines and transmission transformers.

DISTRIBUTION SUBSTATION TRANSFORMER LOSSES

Distribution substation transformer losses were calculated individually for each transformer by combining the "no load" losses and "load" losses. The "no load" losses were taken directly from the manufacturers' test reports. Each transformer's "load" loss was determined for the actual load level corresponding to the time of coincident system peak, which was defined as 100% peak load. This load loss value was calculated by taking the test report load loss value and adjusting it from the test kVA level to the actual hourly kVA load corresponding to the coincident system peak. All substation transformers with hourly load information available on August 21, 2003 HE 1500 were included in the analysis. Load losses at the 80%, 60%, and 40% load levels were computed by scaling down the peak load and recalculating. Substation transformers in Southeast Wisconsin and Fox Valley were combined into groups based on high- and low-

side voltage ratings. All Iron Range substation transformers were grouped together. Substation transformer losses are shown in Appendix D1.

PRIMARY DISTRIBUTION SYSTEM LINE LOSSES

The method used to determine primary distribution system line conductor losses involved the preparation of study cases and running power flow analysis on selected groups of feeders of different voltage levels. The power flow analysis calculated and accounted for the line losses as part of the solution. Power flow analyses and losses for all test feeders were determined based on actual system loading conditions at the time of coincident system peak demand, which occurred on August 21, 2003 HE 1500. This time was chosen because it would provide a coordinated overall picture of where system losses are occurring, and results that would be consistent with load research data relative to total system energy.

For each primary distribution voltage level, a group of representative feeders was selected upon which to perform load flow analyses. Circuit models for the selected feeders were extracted from the CADOPS database as it existed for the August 2003 timeframe. The actual metered load data for each selected feeder, corresponding to the time of the system coincident peak, was extracted from the Substation Metering Information System (SMIS). Caution was taken to avoid inconsistent or missing data, in order to try to avoid circuits that might not have been in their normal configuration.

The FeederAll software program for distribution analysis was the tool used to perform load flow analysis and obtain loss results. The actual metered data for each feeder was used to allocate connected loads uniformly based on transformer kVA. Distribution substations and certain large commercial loads were modeled as spot loads. The FeederAll analysis program has the enhanced capability of allocating loads from metered data while compensating for line losses in the process.

Load flow analyses were performed on each feeder of each voltage group with loads scaled to 100%, 80%, 60%, and 40% of peak load, where 100% load was defined as the actual metered load on the feeder at the time of the coincident system peak.

Within each voltage group, the total metered kW and calculated line loss kW for all feeders were summed to determine the average percent line loss and range of losses for that specific voltage group. Results were summarized for each voltage group at 100%, 80%, 60%, and 40% of peak load.

Several basic assumptions were made and used consistently throughout the study. All loads were assumed to have the characteristics of 50% constant power and 50% constant impedance loads. Where switched capacitors were encountered, they were assumed to be energized for all cases except for the reduced loading condition of 40% of peak load. Losses associated with substation transformers, line transformers, and secondary conductors were excluded from the load flow analyses. These items were considered separately. Primary conductor losses are summarized in Appendix D2.

LINE TRANSFORMER LOSSES

Losses for line transformers were developed from a sampling of 22 different kVA sizes of single phase and three phase, overhead and padmounted transformers. Test report data was used to determine “no load” and “load” losses for each size of transformer and losses were calculated for 0 - 100% of rated kVA. A summary of line transformer losses is contained in Appendix D3.

SECONDARY CONDUCTOR LOSSES

Line losses for secondary conductors were estimated based on results of the 1993 loss study. There has not been a significant increase in the data available for secondary losses since the 1993 study. In addition, the secondary system has not changed substantially since the last study was done. For the purposes of this loss study, secondary conductor losses were estimated at 2% at peak for Small General Secondary and Residential customers, and 0.75% at peak for Large General Secondary customers.

Loss Allocation Analysis Procedures

Data Used in the Analysis

- Loss Engineering Analysis Results
- CSS – Customer Billing System Extracts
- CADOPS – Outage Management System Extracts
- Load Research 2003 Class Load Analysis Results

Primary Feeders

A sample of feeders was selected by Distribution Planning and load flow analyses were performed to determine the percent losses at 100%, 80%, 60% and 40% of the system peak load in 2003. The statistics for the samples are listed in Appendix D2

The accounts served by each feeder were identified from the CADOPS extract. This included the accounts on lower-voltage feeders served by the higher voltage feeder. The annual energy for each of the accounts served by the feeders was identified from the CSS extract. Hourly loads were based on class load profiles derived from the results of the 2003 Class Load Analysis. Actual feeder loads were obtained from SMIS, and the profiled class loads were adjusted proportionally such that the total of the class loads matched the actual feeder load from SMIS.

Hourly percent losses for each feeder were determined by interpolating between the four load points. Hourly energy losses for each class were then calculated by multiplying the percent loss for the hour by the class load for the hour. The hourly energy losses for each class were then summed over the 8760 hours in the year to get the annual energy losses. The annual percent energy losses were then calculated for each class and for each feeder by dividing the annual energy losses by the annual energy.

The annual percent losses for each class were determined by a weighted average of the annual percent losses for all the sampled feeders.

Substations

The approach for substations was similar as that for feeders. The difference is the load profiling was applied to the aggregate for all the substations in a category, rather than for each individual substation in the sample. No reliability statistics are available for the substation analysis

Line Transformers

Distribution Planning provided engineering estimates of line transformer losses for 25 different types of line transformers at 100%, 80%, 60%, 40%, 20% and 0% capacity.

Load Research selected samples for 22 of the transformer types. The accounts served by the each feeder were identified by the CADOPS extract. The annual energy for each of the accounts served by the transformers was identified from the CSS extract. Hourly loads were calculated from class load profiles derived from the results of the 2003 Class Load Analysis.

Hourly percent losses for each transformer were determined by interpolating between the six load points. Hourly energy losses for each class were then calculated by multiplying the percent loss for the hour by the class load for the hour. The hourly energy losses for each class were then summed over the 8760 hours in the year to get the annual energy losses. The annual percent energy losses were then calculated for each class and for each transformer by dividing the annual energy losses by the annual energy.

The annual percent losses for each class were determined by averaging the annual percent losses for all the sampled transformers. The statistics for the 22 line transformer samples are listed in Table D3

Secondary System

We did not do any new analysis for the secondary system. We applied the percent losses derived in the 1993 analysis to the 2003 class load profile data.

Summary

The total percent losses for each class were calculated by multiplying the percent losses for each system component by the percent of the class load that is served by the system component. The percent of class load that is served by each system component is shown in Appendix D4. The annual loss factors by customer class and system component are shown in Appendix D5. The calculation of annual energy loss factors by class and for the entire system is shown in Appendix D6. This analysis was also performed for individual months. The results of the monthly loss factor analysis is shown in Appendix D7.

Appendix A - Substation Load Flow Analyses Summary Results

Group	Number of Substations in Sample	Average % Demand Losses
SE1A	19	0.47%
SE1B	96	0.43%
SE2A	14	0.46%
SE2B	21	0.58%
SE3A	301	0.71%
SE3B	5	0.81%
FV1A	18	0.42%
FV2A	5	0.63%
FV2B	30	0.67%
FV2C	3	0.73%
IR1A	13	0.64%

Appendix B - Primary Feeder Load Flow Analyses Summary Results

Group	Number of Feeders in Sample	Average %Demand Losses	Std Dev % Demand Losses	95% Confidence Interval
SE1	30	1.83%	1.38%	0.52%
SE2	23	1.31%	0.67%	0.30%
SE3	50	1.74%	0.84%	0.24%
FV1	14	0.90%	0.88%	0.51%
FV2	30	1.51%	0.79%	0.29%
IR1	12	2.26%	1.83%	1.14%

The confidence interval parameter provides an indication of how scattered the results are among the various feeders tested. For the SE1 group, there is a 95% probability that the true mean is in the range of 1.31% and 2.35%.

Appendix C
Line Transformer Summary Results

Size	Phase	OH or PM	Transformer Type	Pop Size	Sample size	Average Losses Over Entire Year	Std Dev of Ave Losses Over Entire Year	95% Confidence Interval of Ave Losses	Average Losses at Time of System Peak	Std Dev of Ave Losses at Time of Peak	95% Confidence Interval of Ave Losses at
10	1	OH	10 kVA, 1-ph, OH	10,342	50	3.09%	2.55%	0.71%	2.19%	0.92%	0.25%
15	1	OH	15 kVA, 1-ph, OH	19,747	50	3.76%	3.00%	0.83%	2.25%	1.19%	0.33%
25	1	OH	25 kVA, 1-ph, OH	52,713	50	2.76%	2.41%	0.67%	1.91%	1.01%	0.28%
25	1	PM	25 kVA, 1-ph, PM	47,596	50	3.01%	2.00%	0.55%	1.87%	0.62%	0.17%
50	1	OH	50 kVA, 1-ph, OH	26,597	50	1.51%	1.37%	0.38%	1.22%	0.46%	0.13%
50	1	PM	50 kVA, 1-ph, PM	15,134	50	2.67%	2.29%	0.64%	1.62%	1.02%	0.28%
50	3	OH	50 kVA, 3-ph, OH	1,242	50	1.78%	1.80%	0.50%	1.41%	0.67%	0.18%
75	3	OH	75 kVA, 3-ph, OH	1,569	50	3.53%	3.30%	0.92%	2.12%	1.22%	0.34%
75	3	PM	75 kVA, 3-ph, PM	1,863	50	4.80%	4.21%	1.17%	2.66%	1.72%	0.48%
100	1	OH	100 kVA, 1-ph, OH	2,597	50	1.74%	1.46%	0.41%	1.19%	0.54%	0.15%
100	1	PM	100 kVA, 1-ph, PM	3,166	50	1.53%	0.81%	0.22%	0.99%	0.24%	0.07%
100	3	OH	100 kVA, 3-ph, OH	581	50	1.65%	1.71%	0.48%	1.19%	0.69%	0.19%
150	3	OH	150 kVA, 3-ph, OH	1,472	50	2.37%	2.17%	0.60%	1.47%	0.81%	0.22%
150	3	PM	150 kVA, 3-ph, PM	3,205	50	3.12%	2.90%	0.80%	1.95%	1.11%	0.31%
300	3	OH	300 kVA, 3-ph, OH	597	50	2.02%	1.47%	0.41%	1.32%	0.51%	0.14%
300	3	PM	300 kVA, 3-ph, PM	2,471	50	2.18%	1.80%	0.50%	1.49%	0.65%	0.18%
500	3	PM	500 kVA, 3-ph, PM	1,305	50	1.91%	2.00%	0.55%	1.32%	0.89%	0.25%
1000	3	PM	1000 kVA, 3-ph, PM	404	50	1.78%	1.66%	0.46%	1.26%	0.80%	0.22%
1500	3	PM	1500 kVA, 3-ph, PM	251	50	1.49%	1.01%	0.28%	1.03%	0.45%	0.13%
2500	3	PM	2500 kVA, 3-ph, PM	100	50	1.33%	1.03%	0.29%	0.93%	0.48%	0.13%
Sample Total			Sample Total	192,952							
Population Total			Population Total	205,150							
% of Population Represented			% of Population Represented in Sample	94.05%							

APPENDIX D1

138 kV to 34.5 kV Substation Transformer Losses

Substation Transformer	No Load Losses	Full Load Losses	Test MVA	Peak Load (MVA)	Peak Load (kW)	Losses at 100% Load	Losses at 80% Load	Losses at 60% Load	Losses at 40% Load	Comments
Apple Hills 34.5 - 8	43.8	134.4	54	42	41799	124.6	95.5	72.9	56.7	
Butte des Morts 34.5 - 4	32.9	164.1	56	37	36501	102.6	77.5	58.0	44.0	
Butte des Morts 34.5 - 5	68.2	151.4	50	44	44001	186.0	143.6	110.6	87.1	
Casaloma 34.5 - 8	38.7	183.0	54	67	65199	323.7	221.1	141.3	84.3	
City Limits 34.5 - 4	49.8	123.7	30	25	24501	133.6	103.4	80.0	63.2	
City Limits 34.5 - 5	52.7	120.5	30	41	39801	279.8	198.1	134.5	89.0	
City Limits 34.5 - 6	58.9	64.8	30	39	38601	169.5	129.7	98.7	76.6	
Ellington 34.5 - 5	20.3	44.3	10	17	15501	146.7	101.2	65.8	40.6	
Falls - 7	26.6	122.9	36	13	13101	42.9	37.0	32.5	29.2	
Hintz - 7	27.0	104.8	36	10	9999	35.6	32.5	30.1	28.4	
Lawn Road - 8	33.1	80.6	36	24	23601	67.9	55.4	45.6	38.7	
Maes - 7	30.5	142.7	54	36	35601	92.9	70.4	52.9	40.5	
Maes - 8	28.2	106.7	36	22	21501	66.2	52.5	41.9	34.3	
Neevin - 8	40.0	305.1	90	46	45900	120.0	91.2	68.8	52.8	
Roselawn 34.5 - 4	26.5	48.6	10	N/A	N/A	N/A	N/A	N/A	N/A	T4 OOS as of 7/03
White Clay 34.5 - 5	47.3	107.1	36	28	27099	109.8	87.3	69.8	57.3	
White Lake 34.5 - 7	39.5	114.1	30	19	18399	84.1	68.0	55.6	46.7	
Woodenshoe - 7	59.0	127.3	30	34	33699	219.6	161.8	116.8	84.7	
Woodenshoe - 8	34.2	438.6	93.3	31	31299	83.6	65.8	52.0	42.1	

All Losses are in kW

*Losses = (No Load Losses) + (Peak Load MVA / Test MVA)^2 * (Full Load Losses)*

Peak load data is from 8/21/2003 1500 hrs

		System Load (kW)	Total Losses (kW)	Ave. % Loss
Totals:	**100%**	**566103**	**2389**	**0.422%**
	80%	**452882**	**1792**	**0.396%**
	60%	**339662**	**1328**	**0.391%**
	40%	**226441**	**996**	**0.440%**

APPENDIX D1

138 kV to 26.4 kV Substation Transformer Losses

Substation Transformer	ID	No Load Losses	Full Load Losses	Test MVA	Peak Load (MVA)	Peak Load (kW)	Losses at 100% Load	Losses at 80% Load	Losses at 60% Load	Losses at 40% Load	Comments
Albers Bulk - 1	J3100	89.7	111.8	45	35	34899	157.0	132.7	113.9	100.5	
Albers Bulk - 3	J3100	35.6	380.6	75	64	63699	310.9	211.8	134.7	79.6	
Butler - 1	J3700	41.2	133.4	50.4	61	58299	234.7	165.1	110.9	72.2	
Butler - 2	J3700	38.2	132.9	50.4	41	39900	127.8	95.5	70.4	52.5	
Butler - 3	J3700	105.4	264.0	75	49	47601	218.1	177.5	146.0	123.4	
Cornell - 1	J3600	26.2	193.6	50.4	36	35901	125.5	89.8	62.0	42.1	
Cornell - 3	J3600	71.6	116.0	45	43	43101	179.0	140.3	110.3	88.8	
Dewey - 7	J56470	26.3	109.7	36	9	8100	32.6	30.3	28.6	27.3	
Dewey - 8	J56480	58.1	211.8	45	4	0	59.4	58.9	58.5	58.3	
Granville - 1	J3400	195.3	950.8	450	0	99	195.3	195.3	195.3	195.3	
Granville - 8	J3400	25.2	193.3	50.4	72	66300	423.0	279.8	168.4	88.8	
Granville - 9	J3400	64.0	334.6	75	73	67899	381.0	266.9	178.1	114.7	
Hayes - 1	J5140	73.0	328.0	75	51	50001	223.5	169.3	127.2	97.1	
Hayes - 2	J5150	44.3	309.5	75	31	28500	95.8	77.3	62.8	52.5	
Lincoln - 7	J3200	73.8	339.3	75	40	39201	167.9	134.0	107.7	88.9	
Lincoln - 9	J3200	36.0	359.9	75	41	41001	145.7	106.2	75.5	53.6	
Tosa - 5	J49300	33.9	132.9	45	31	31101	97.4	74.5	56.8	44.1	
28 St. 26 - 7	J3870	24.9	196.0	50.4	24	23100	68.6	52.9	40.6	31.9	
28 St. 26 - 8	J3880	34.7	130.4	50.4	25	25401	67.9	55.9	46.7	40.0	

All Losses are in kW
Peak Load data is from 8/21/2003 1500 hrs
Losses = (No Load Losses) + (Load MVA / Test MVA) ^{2} ** (Full Load Losses)*

		System Load (kW)	Total Losses (kW)	Ave. % Loss
Totals:	**100%**	**704103**	**3310.94**	**0.470%**
	80%	**563282**	**2514.04**	**0.446%**
	60%	**422462**	**1894.22**	**0.448%**
	40%	**281641**	**1451.50**	**0.515%**

APPENDIX D1

138 kV to 24.9 kV Substation Transformer Losses (SEW)

Substation Transformer	ID	No Load Losses	Full Load Losses	Test MVA	Peak Load (MVA)	Peak Load (kW)	Losses at 100% Load	Losses at 80% Load	Losses at 60% Load	Losses at 40% Load	Comments
Allerton - 8	Z54780	52.1	323.6	75	32	32499	112.9	91.0	74.0	61.8	
Allerton - 9	Z54790	52.1	326.5	75	70	67200	338.1	235.2	155.1	97.9	
Arcadian - 3	Z9990	97.5	88.2	45	32	31899	143.0	126.6	113.9	104.8	
Auburn - 1	Z1800	52.8	87.5	20	15	14799	102.0	84.3	70.5	60.7	
Bark River - 7	Z46100	41.1	400.6	75	36	36201	134.4	100.8	74.7	56.0	
Barton Bulk - 8	Z9780	64.9	121.2	45	48	47199	202.2	152.8	114.3	86.9	
Barton Bulk - 9	Z9790	66.0	349.0	75	27	25599	109.9	94.1	81.8	73.0	
Boxelder - 9	Z58700	24.0	180.7	25	24	20400	190.6	130.6	84.0	50.7	
Branch - 8	Z42180	33.3	136.7	45	34	33501	110.9	83.0	61.2	45.7	
Branch - 9	Z42190	47.7	433.9	75	49	48099	232.9	166.2	114.4	77.3	
Brookdale - 7	Z47770	32.7	131.6	45	38	37401	125.1	91.8	66.0	47.5	
Brookdale - 8	Z47780	24.3	196.8	50.4	42	41001	158.4	110.1	72.6	45.8	
Burlington Bulk - 1	Z1140	87.2	291.8	75	47	46500	202.3	160.9	128.7	105.7	
Burlington Bulk - 2	Z1150	89.5	291.5	75	14	13101	99.7	96.0	93.2	91.1	
Butternut - 7	Z33570	23.4	112.4	36	22	21300	63.5	49.1	37.8	29.8	
Butternut - 8	Z33580	28.1	104.6	36	20	19800	59.7	48.4	39.5	33.2	
Cedarsauk - 8	Z79680	46.2	146.3	45	30	28899	110.3	87.2	69.3	56.4	
Cedarsauk - 9	Z79690	20.5	299.7	60	22	19899	60.8	46.3	35.0	26.9	
Concord - 7	Z9070	31.9	134.7	45	28	27600	84.0	65.3	50.7	40.2	
Concord - 8	Z9080	32.4	134.9	45	59	56100	262.7	179.8	115.3	69.3	
Cottonwood - 7	Z82870	25.4	165.5	50.4	27	25299	72.8	55.7	42.5	33.0	
Cottonwood - 8	Z82880	33.4	131.6	45	47	45801	175.8	124.6	84.7	56.2	
Edgewood - 8	Z67100	30.5	120.9	42	N/A	N/A	N/A	N/A	N/A	N/A	Readings start on 2/4/04.
Elkhart Lake Bulk - 4	Z4040	45.6	94.9	20	11	10599	72.3	62.7	55.2	49.9	
Elkhart Lake Bulk - 5	Z4050	45.4	97.3	20	11	10599	73.8	63.6	55.6	50.0	
Fort Atkinson Bulk - 2	Z8350	26.8	91.1	36	37	33099	122.5	88.1	61.2	42.1	
Fort Atkinson Bulk - 3	Z8360	22.6	112.6	36	21	20499	61.7	47.6	36.7	28.8	
Fredonia - 8	Z40580	22.9	371.2	60	11	11199	36.0	31.3	27.6	25.0	
Fredonia - 9	Z40590	29.6	104.4	36	11	10500	38.8	35.5	32.9	31.1	
Germantown - 8	Z2680	87.1	297.0	75	34	33699	147.7	125.9	108.9	96.8	
Germantown - 9	Z2690	64.1	334.6	75	49	48201	205.2	154.4	114.9	86.7	
Glacier - 8	Z66100	28.3	95.8	36	16	14901	47.5	40.6	35.2	31.4	Readings start on 7/18/03
Jefferson - 5	Z6650	44.7	98.2	30	30	28299	145.5	109.2	81.0	60.8	
Kenosha - 7	Z9370	25.0	191.2	50.4	58	54300	276.5	185.9	115.5	65.2	
Kenosha - 8	Z9380	56.1	276.8	75	37	37200	123.8	99.5	80.5	66.9	
Kenosha - 9	Z9390	51.5	145.2	45	62	60099	322.7	225.0	149.1	94.9	
Lakeview - 8	Z26200	39.4	79.7	36	27	26901	85.3	68.7	55.9	46.7	
Lyndon - 9	Z53700	15.2	67.8	18	18	15999	80.8	57.2	38.8	25.7	
Maple - 8	Z65300	27.8	103.4	36	26	23901	81.7	62.3	47.2	36.4	
Mequon - 2	Z3900	25.6	190.6	50.4	41	41001	153.0	107.1	71.4	46.0	
Mequon - 3	Z3900	62.0	356.0	75	53	52500	238.4	174.9	125.5	90.2	
Merrill Hills - 8	Z3580	55.9	268.0	75	44	43599	149.0	115.5	89.4	70.8	
Merrill Hills - 9	Z3590	59.2	358.7	75	59	58101	278.9	199.8	138.3	94.4	
Moorland - 7	Z22770	53.8	271.0	75	57	56301	209.8	153.6	110.0	78.8	
Moorland - 8	Z22780	66.1	338.8	75	50	49800	219.1	164.0	121.2	90.6	
Moorland - 9	Z22790	30.1	320.4	84	64	59601	216.1	149.1	97.0	59.8	
Mukwonago - 7	Z77370	43.0	144.0	45	49	47199	210.9	150.4	103.4	69.8	
Mukwonago - 8	Z77380	55.0	254.2	75	42	41001	133.6	105.3	83.3	67.6	
96 St - 7	Z4570	37.5	134.1	50.4	42	41499	129.3	96.3	70.5	52.2	
96 St - 8	Z4580	37.2	137.3	50.4	61	60699	239.0	166.3	109.8	69.5	
96 St - 9	Z4590	33.4	135.8	50.4	54	52500	188.1	132.4	89.1	58.2	
Paris - 8	Z8980	24.0	116.5	36	13	12099	38.7	33.4	29.3	26.3	
Paris - 9	Z8990	49.4	102.3	30	18	17901	87.9	74.1	63.3	55.6	
Parkland - 7	Z33770	22.2	112.3	36	25	21201	74.2	55.5	40.9	30.5	
Parkland - 8	Z33780	29.3	103.0	36	23	20901	70.6	55.7	44.2	35.9	
Pennsylvania - 1	Z8440	77.8	354.0	75	31	31401	139.9	117.5	100.1	87.7	
Pennsylvania - 2	Z8450	72.9	344.0	75	46	43401	202.9	156.1	119.7	93.7	
Pleasant Valley - 7	Z33800	22.1	112.2	36	31	30000	105.6	75.5	52.1	35.5	
Port Washington - 7	Z770	30.2	123.2	42	21	18801	60.4	49.5	41.1	35.0	
Port Washington - 8	Z780	25.2	112.5	36	23	22200	72.8	55.7	42.3	32.8	
Racine - 7	Z1670	60.4	121.8	45	50	49599	209.5	155.8	114.1	84.3	

APPENDIX D1

138 kV to 24.9 kV Substation Transformer Losses (SEW)

Substation Transformer	ID	No Load Losses	Full Load Losses	Test MVA	Peak Load (MVA)	Peak Load (kW)	Losses at 100% Load	Losses at 80% Load	Losses at 60% Load	Losses at 40% Load	Comments
Racine - 8	Z1680	65.3	333.0	75	66	61800	325.5	231.8	159.0	106.9	
Racine - 9	Z1690	29.5	121.9	42	34	33699	108.5	80.0	57.9	42.1	
Random Lake Bulk - 1	Z5700	33.5	50.0	10	10	9000	82.4	64.8	51.1	41.3	
Random Lake Bulk - 2	Z5700	34.8	50.0	10	10	9000	82.8	65.5	52.1	42.5	
Range Line - 7	Z61470	52.3	322.3	75	50	46800	196.1	144.3	104.1	75.3	
Range Line - 8	Z61480	52.2	321.5	75	35	35001	122.6	97.3	77.6	63.5	
Root River - 7	Z77870	22.6	111.8	36	30	28899	101.6	73.2	51.1	35.2	
Root River - 8	Z77880	30.0	98.9	36	N/A	N/A	N/A	N/A	N/A	N/A	Readings start on 11/20/03
Rubicon - 1	Z2000	31.2	55.1	10	13	12399	117.2	86.2	62.1	44.9	
Rubicon - 2	Z2000	30.5	54.2	10	0	0	30.5	30.5	30.5	30.5	Normally open
St Lawrence Bulk - 2	Z8000	45.9	88.9	25	17	17001	87.0	72.2	60.7	52.5	
St Lawrence Bulk - 3	Z8000	41.0	84.6	25	17	17301	81.5	66.9	55.6	47.5	
St Martin Bulk - 1	Z3040	47.8	432.5	75	38	36699	157.1	117.7	87.1	65.3	
St Martin Bulk - 2	Z3050	37.4	368.0	75	57	55200	248.4	172.4	113.3	71.1	
St Rita - 1	Z8540	68.6	251.1	75	0	0	68.6	68.6	68.6	68.6	Normally no load
St Rita - 2	Z8550	24.7	191.9	50.4	56	55800	264.2	178.0	110.9	63.0	
St Rita - 3	Z8560	33.8	131.4	45	30	30399	93.8	72.2	55.4	43.4	
68 St. - 7	Z73570	44.5	380.3	75	37	36501	135.6	102.8	77.3	59.1	
68 St. - 8	Z73580	44.8	387.5	75	52	50601	229.7	163.1	111.3	74.4	
Somers - 8	Z35700	27.5	104.4	36	23	22800	70.5	55.0	43.0	34.4	
Spring Valley - 8	Z33900	23.1	110.6	36	32	32301	112.7	80.4	55.4	37.4	
Stony Brook - 9	Z27000	20.9	63.3	15	9	8400	41.7	34.2	28.3	24.2	
Sugar Creek - 7	Z6570	23.9	181.5	25	6	5799	34.0	30.4	27.6	25.5	
Sugar Creek - 8	Z6580	15.6	62.5	15	12	11499	54.9	40.8	29.8	21.9	
Summit - 1	Z6400	31.4	124.1	42	28	27801	87.7	67.5	51.7	40.4	
Summit - 2	Z6400	31.2	121.6	42	8	7701	35.5	34.0	32.7	31.9	
Sussex - 8	Z5480	26.7	391.5	84	41	40599	120.9	87.0	60.6	41.8	
Sussex - 9	Z5490	21.4	218.8	50.4	49	48501	227.4	153.2	95.5	54.4	
Swan - 7	Z34300	22.7	111.7	36	47	43599	214.7	145.6	91.8	53.4	
Tamarack - 7	Z36370	29.3	96.4	36	15	15000	46.4	40.3	35.4	32.0	Readings start on 5/22/03
Tamarack - 8	Z36380	28.0	104.1	36	28	27201	89.6	67.4	50.2	37.9	
Tichigan - 8	Z33400	22.4	111.3	36	30	28800	97.6	70.6	49.5	34.4	
Waukesha - 1	Z7040	73.1	124.1	45	75	70701	415.0	291.9	196.2	127.8	
Waukesha - 2	Z7050	36.6	131.7	50.4	45	44901	142.6	104.4	74.8	53.6	
Waukesha - 3	Z7060	38.3	133.2	50.4	66	65100	265.3	183.6	120.0	74.6	
Whitewater - 4	Z4400	54.9	79.3	25	21	19401	108.8	89.4	74.3	63.5	
Whitewater - 5	Z4400	45.1	90.7	25	22	20601	112.2	88.0	69.2	55.8	

All Losses are in kW
Peak Load data is from 8/21/2003 1500 hrs
Losses = (No Load Losses) + (Load MVA / Test MVA) ^{2} ** (Full Load Losses)*

		System Load (MW)	Total Losses (MW)	Ave. % Loss
Totals:	**100%**	**3128.2**	**13.31**	**0.43%**
	80%	**2502.6**	**9.93**	**0.40%**
	60%	**1876.9**	**7.30**	**0.39%**
	40%	**1251.3**	**5.43**	**0.43%**

138 kV to 13.2 kV Substation Transformer Losses (3 Wire)

Substation Transformer	ID	No Load Losses	Full Load Losses	Test MVA	Peak Load (MVA)	Peak Load (kW)	Losses at 100% Load	Losses at 80% Load	Losses at 60% Load	Losses at 40% Load	Comments
Everett - 8	H16580	30.7	122.7	36.0	19	19299	66.0	53.3	43.4	36.3	
Everett - 9	H16590	30.7	121.6	36.0	42	41601	195.4	136.1	90.0	57.1	
Greves - 5	H81950	31.8	57.6	18.0	0	0	N/A	N/A	N/A	N/A	NO SMIS
Greves - 7	H81970	20.3	71.5	18.0	0	0	N/A	N/A	N/A	N/A	NO SMIS
Harbor 13.2 - 1	H1000	79.0	381.0	90.0	47	45501	181.8	144.8	116.0	95.4	
Harbor 13.2 - 2	H1000	75.2	372.0	90.0	47	45699	176.0	139.7	111.5	91.3	
Harbor 13.2 - 3	H1000	74.0	436.0	90.0	49	44499	200.8	155.2	119.7	94.3	
Haymarket Square 13.2 - 1	H9400	49.6	125.3	36.0	29	28200	128.7	100.2	78.1	62.2	
Haymarket Square 13.2 - 3	H9400	37.8	130.6	36.0	33	27000	146.9	107.6	77.1	55.2	
Lincoln 13.2 - 4	H3200	75.9	359.8	90.0	58	45099	226.9	172.5	130.3	100.1	
Lincoln 13.2 - 6	H3200	117.9	362.1	90.0	39	36501	186.5	161.8	142.6	128.8	
Nicholson - 2	H2500	30.3	44.7	18.0	1	1078	30.5	30.4	30.4	30.3	
Norwich 13.2 - 5	H51250	46.4	398.5	65.0	26	23400	108.7	86.3	68.8	56.4	
Norwich 13.2 - 7	H51270	43.8	390.5	65.0	31	29499	130.9	99.6	75.2	57.7	
Twenty-Eighth Street 13.2 - 3	H69140	27.7	115.6	39.0	23	21300	68.3	53.7	42.3	34.2	
Twenty-Eighth Street 13.2 - 5	H69160	28.5	116.3	39.0	38	35799	141.2	100.7	69.1	46.5	

All Losses are in kW
Peak Load data is from 8/21/2003 1500 hrs
*Losses = (No Load Losses) + (Load MVA / Test MVA)^2 * (Full Load Losses)*

		System Load (kW)	Total Losses (kW)	Ave. % Loss
Totals:	**100%**	**444475**	**1988.58**	**0.447%**
	80%	**355580**	**1541.77**	**0.434%**
	60%	**266685**	**1194.25**	**0.448%**
	40%	**177790**	**946.02**	**0.532%**

138 kV to 13.2 kV Substation Transformer Losses (4 Wire)

Substation Transformer	ID	No Load Losses	Full Load Losses	Test MVA	Peak Load (MVA)	Peak Load (kW)	Losses at 100% Load	Losses at 80% Load	Losses at 60% Load	Losses at 40% Load	Comments
Center - 5	W46250	19.3	74.4	18.0	21	20862	123.46	85.96	56.80	35.97	
Center - 6	W46260	19.45	74.5	18.0	20	18764	107.60	75.87	51.19	33.55	
Fiebrantz - 5	W11650	16.76	79.73	18.0	17	16800	91.26	64.44	43.58	28.68	
Fiebrantz - 6	W11660	16.77	80.33	18.0	25	23199	166.81	112.79	70.78	40.78	
Fiebrantz - 7	W11670	17.55	94	18.0	15	14001	80.24	57.67	40.12	27.58	
Glendale - 5	W22350	14.119	77.169	21.0	20	19401	82.04	57.59	38.57	24.99	
Glendale - 6	W22360	14.279	76.891	21.0	23	21900	104.13	71.78	46.63	28.66	
Harbor 13.2 - 7	W1000	31.7	60.9	18.0	0	201	31.73	31.72	31.71	31.70	
Haymarket Square 13.2 - 5	W9400	20.3	71.2	18.0	27	25200	180.50	122.83	77.97	45.93	
Haymarket Square 13.2 - 7	W9400	19.6	72.8	18.0	16	16101	78.57	57.34	40.83	29.03	
Kansas 13.2 - 5	W7250	35.2	66.8	18.0	19	18332	107.99	81.79	61.41	46.85	
Kansas 13.2 - 6	W7260	35.63	66.6	18.0	N/A	N/A	N/A	N/A	N/A	N/A	
Milwaukee County Pp - 2	W17200	10.6	62.6	12.0	7	6399	31.90	24.23	18.27	14.01	
Milwaukee County Pp - 3	W17200	10.3	62.2	12.0	6	5601	27.99	21.62	16.67	13.13	
O Connor - 5	W14650	22.532	74.514	18.0	12	11901	57.33	44.80	35.06	28.10	
O Connor - 6	W14660	22.345	77.193	18.0	27	26199	193.45	131.85	83.94	49.72	
Ramsey - 5	W23150	17.1	75	18.0	19	17700	97.18	68.35	45.93	29.91	
Ramsey - 6	W23160	19.2	75.3	18.0	16	14799	75.04	54.94	39.30	28.13	
Shorewood - 6	W62860	25.5	63.7	18.0	20	19299	103.35	75.32	53.53	37.96	
Shorewood - 7	W62870	25.5	64.5	18.0	18	16701	87.17	64.97	47.70	35.37	
West Junction 13.2 - 5	W45550	16.6	71.8	18.0	24	23024	142.21	96.99	61.82	36.70	
West Junction 13.2 - 6	W45560	16.4	72.2	18.0	14	13884	61.82	45.47	32.75	23.67	

All Losses are in kW

*Losses = (No Load Losses) + (Peak Load MVA / Test MVA)^2 * (Full Load Losses)*

Peak load data is from 8/21/2003 1500 hrs

		System Load (kW)	Total Losses (kW)	Ave. % Loss
Totals:	**100%**	**350268**	**2031.78**	**0.580%**
	80%	**280214**	**1448.34**	**0.517%**
	60%	**210161**	**994.55**	**0.473%**
	40%	**140107**	**670.41**	**0.478%**

APPENDIX D1

138 kV to 12.47 kV Substation Transformer Losses

Substation Transformer	Base ID	No Load Losses	Full Load Losses	Test MVA	Peak Load (MVA)	Peak Load (kW)	Losses at 100% Load	Losses at 80% Load	Losses at 60% Load	Losses at 40% Load	Comments
Apple Hills 12.47 - 6	AHL60	25.5	61.7	18	17	16599	79.88	60.31	45.08	34.20	
Casaloma 12.47 - 6	CAS60	25	62.2	18	14	13299	60.50	47.72	37.78	30.68	
Casaloma 12.47 - 7	CAS70	10.1	101.1	18	26	25500	225.95	148.24	87.81	44.64	
Lake Park - 5	LPK50	10.3	100.7	18	20	19500	135.87	90.66	55.50	30.39	
Lake Park - 6	LPK60	17.6	57.7	18	13	12300	46.36	36.01	27.95	22.20	

All Losses are in kW

*Losses = (No Load Losses) + (Peak Load MVA / Test MVA)^2 * (Full Load Losses)*

Peak load data is from 8/21/2003 1500 hrs

		System Load (kW)	Total Losses (kW)	Ave. % Loss
Totals:	**100%**	**87198**	**548.56**	**0.629%**
	80%	**69758**	**382.94**	**0.549%**
	60%	**52319**	**254.12**	**0.486%**
	40%	**34879**	**162.11**	**0.465%**

34.5 kV to 12.47 kV Substation Transformer Losses

Substation Transformer	Base ID	No Load Losses	Full Load Losses	Test MVA	Peak Load (MVA)	Peak Load (kW)	Losses at 100% Load	Losses at 80% Load	Losses at 60% Load	Losses at 40% Load	Comments
Bonduel - 5	BON	7.589	25.092	3.75	4	3896	34.84	25.03	17.40	11.95	
Bridgewood - 5	BGW	8.2	62.4	12	13	12000	79.21	53.65	33.76	19.56	
Bridgewood - 6	BGW	8.5	62.6	12	12	11601	70.07	47.91	30.67	18.35	
Butte des Morts 12.47 - 7	BDM	18.36	52.56	12	8	7401	41.13	32.94	26.56	22.00	
Butte des Morts 12.47 - 8	BDM	8.549	66.623	15	18	17700	108.79	72.70	44.63	24.59	
Center Valley - 5	CVL	6.324	26	3.75	2	2287	16.58	12.89	10.02	7.96	
City Limits 12.47 - 7	CLS	16.826	48.542	12	13	12699	73.79	53.28	37.33	25.94	
City Limits 12.47 - 8	CLS	16.19	34.606	12	17	16500	87.28	61.69	41.78	27.56	
County Hospital - 5	COH	14.77	35.265	12	15	15000	72.84	51.94	35.68	24.06	
County Hospital - 6	COH	17.98	52.443	12	15	15000	104.34	73.25	49.07	31.80	
Dale - 6	DAL	8.223	30.538	3.75	2	1483	13.71	11.74	10.20	9.10	
Dundas - 6	DND	11.218	46.948	7.5	4	3504	22.52	18.45	15.29	13.03	
Ellington 12.47 - 8	ELL	10.6	42.6	7.5	2	2400	15.33	13.63	12.30	11.36	
Freedom - 6	FRD	13.59	40.8	7.5	7	7228	53.15	38.91	27.83	19.92	
Fremont - 6	FRT	7.781	25.958	3.75	4	4107	41.31	29.24	19.85	13.15	
French - 6	FRR	16.111	55.749	15	14	14001	65.37	47.64	33.84	23.99	
Gillett - 5	GIL50	7.489	26.225	3.75	N/A	N/A	N/A	N/A	N/A	N/A	MISSING SMIS DATA
Gillett - 6	GIL60	10.858	46.548	7.5	4	3389	21.16	17.45	14.57	12.51	
High Cliff - 5	HCL	11.5	43.3	7.5	5	5091	31.81	24.50	18.81	14.75	
Hortonia - 5	HTN	11.2	46.521	7.5	2	1800	14.51	13.32	12.39	11.73	
Julius - 5	JUL	7.788	48.268	7.5	8	7264	59.66	40.99	26.46	16.09	
Junction - 5	JCT	10.99	47.23	7.5	8	7971	67.09	46.89	31.19	19.97	
Junction - 6	JCT	11.18	43.35	7.5	N/A	N/A	N/A	N/A	N/A	N/A	NO SMIS DATA
Lind - 6	LND	6.75	22.65	3.75	3	3059	21.95	16.48	12.22	9.18	
Mackville - 5	MAC	5.17	21	2.5	3	2489	28.39	20.03	13.53	8.89	
Maple Creek - 5	MPC	11.242	46.721	7.5	N/A	N/A	N/A	N/A	N/A	N/A	NO SMIS DATA
Oneida - 5	HI	12.565	41.24	7.5	10	9814	91.92	63.35	41.13	25.26	
Readfield - 5	RDF	11.208	46.123	7.5	5	4905	32.25	24.68	18.78	14.58	
Richmond Street - 5	RCH	15.8	60.384	12	19	17799	159.33	107.66	67.47	38.77	
Shiocton - 6	SHC	7.778	25.307	3.75	N/A	N/A	N/A	N/A	N/A	N/A	NO SMIS DATA
Weimar - 5	WMR	9.43	47.28	7.5	7	6938	53.66	37.74	25.35	16.51	
Wescott - 6	WCT	5.21	34.477	7.5	N/A	N/A	N/A	N/A	N/A	N/A	NO SMIS DATA
Western Avenue - 5	WST	12.72	41.05	7.5	8	7947	60.52	43.31	29.93	20.37	
White Clay 12.47 - 8	WCL	12.491	42.06	7.5	N/A	N/A	N/A	N/A	N/A	N/A	NO SMIS DATA
Winneconne - 5	WNC50	7.45	43.42	10	8	8202	37.59	26.74	18.30	12.27	
Winneconne - 6	WNC60	8.455	50.621	10	10	9601	57.33	39.73	26.05	16.27	

All Losses are in kW

Note: The transformer test reports are missing for Bear Creek Village T6, Briarton T5 and T6, Lawrenceville T5, Nichols T5, Waukechon T5, and Zachow T6. They are not included.

*Losses = (No Load Losses) + (Peak Load MVA / Test MVA)^2 * (Full Load Losses)*

Peak load data is from 8/21/2003 1500 hrs

		System Load (kW)	Total Losses (kW)	Ave. % Loss
Totals:	**100%**	**243076**	**1637.44**	**0.674%**
	80%	**194461**	**1167.73**	**0.600%**
	60%	**145846**	**802.40**	**0.550%**
	40%	**97230**	**541.45**	**0.557%**

34.5 kV to 4.16 kV Substation Transformer Losses

Substation Transformer	Base ID	No Load Losses	Full Load Losses	Test MVA	Peak Load (MVA)	Peak Load (kW)	Losses at 100% Load	Losses at 80% Load	Losses at 60% Load	Losses at 40% Load	Comments
Black Creek Village - 5	BRC	4.091	13.26	1.5	0.77	760	7.59	6.33	5.35	4.65	
Fairview - 6	FRV	5.704	19.945	2.5	1.54	1539	13.30	10.57	8.44	6.92	
Metro - 6	MET	7.452	55.417	7.5	4.65	4510	28.79	21.11	15.13	10.87	

All Losses are in kW

*Losses = (No Load Losses) + (Peak Load MVA / Test MVA)^2 * (Full Load Losses)*

Peak load data is from 8/21/2003 1500 hrs

		System Load (kW)	Total Losses (kW)	Ave. % Loss
Totals:	**100%**	**6809**	**49.68**	**0.730%**
	80%	**5447.2**	**38.00**	**0.698%**
	60%	**4085.4**	**28.92**	**0.708%**
	40%	**2723.6**	**22.44**	**0.824%**

The following transformers had missing data.

Substation Transformer		No Load Losses	Full Load Losses	Test MVA	Comments
Abbey Avenue - 5		9.62	44.1	7.5	NO SMIS DATA
Bell Heights - 6		9.51	48.566	7.5	NO SMIS DATA
Cecil Street - 5		12.965	50.593	7.5	NO SMIS DATA
Hilbert - 5				5	MISSING TEST REPORT
Hortonville - 6				5	MISSING TEST REPORT
Kimberly - 6				7.5	MISSING TEST REPORT
Meade Street - 5		9.48	51.74	7.5	Readings start on 9/26/03
Northland Avenue - 5				5	MISSING TEST REPORT
Partridge - 5		6.92	34.32	5	NO SMIS DATA
Pulaski - 5				3.75	MISSING TEST REPORT
Seymour - 5				2	MISSING TEST REPORT
South Park - 5		10.68	48.074	7.5	NO SMIS DATA
Trico - 5				5	MISSING TEST REPORT
Walnut Street 4.16 - 6		10.015	42.49	7.5	Readings start on 12/13/03
Washington Street - 5				5	MISSING TEST REPORT
Washington Street - 6				5	MISSING TEST REPORT
Water Street 4.16 - 5		7.607	39.298	5	Readings start on 8/30/03
Water Street 4.16 - 6		10.574	42.836	7.5	Readings start on 8/30/03
White Lake 4.16 - 6				2.5	MISSING TEST REPORT
Willow 4.16 - 6		7.222	21.175	2.5	NO SMIS DATA
Winnebago - 6				7.5	MISSING TEST REPORT
Wisconsin Avenue - 5				2.5	MISSING TEST REPORT
Wisconsin Avenue - 6				2.5	MISSING TEST REPORT

24.9/26.4 kV to 8.32 kV Substation Transformer Losses (SEW)

Substation Transformer	Base ID	No Load Losses	Full Load Losses	Test MVA	Peak Load (MVA)	Peak Load (kW)	Losses at 100% Load	Losses at 80% Load	Losses at 60% Load	Losses at 40% Load	Comments
Albers 8.32 - 5	X18500	12.08	53.31	10	9	8576	55.4	39.8	27.7	19.0	
Albers 8.32 - 6	X18500	9.055	51.689	10	7	6828	35.5	26.0	18.6	13.3	
Barton 8.32 - 5	X21000	8.1	37.9	8.4	6	5538	25.3	19.1	14.3	10.8	
Barton 8.32 - 6	X21000	7.9	38.2	8.4	4	4335	18.5	14.7	11.7	9.6	
Belgium - 5	X12200	8.529	31.329	5	4	3235	24.6	18.8	14.3	11.1	
Birch - 5	X30700	6.417	53.143	8.4	7	6938	45.9	31.7	20.6	12.7	
Birch - 6	X30700	6.469	53.168	8.4	9	8898	67.6	45.6	28.5	16.3	
Bradley 8.32 - 0	X21400	11.444	63.009	11.2	7	6699	36.0	27.2	20.3	15.4	
Bradley 8.32 - 8	X21400	8.378	50.205	10	10	9099	53.7	37.4	24.7	15.6	
Bradley 8.32 - 9	X21400	8.403	50.522	10	7	6501	31.1	22.9	16.6	12.0	
Brookfield Square - 5	X12800	9.25	43.84	7.5	7	6399	44.6	31.9	22.0	14.9	
Brookfield Square - 6	X12800	9.27	45.55	7.5	7	6801	53.1	37.3	25.0	16.3	
Brookfield Square - 7	X12800	10.925	46.435	7.5	6	6000	43.6	31.9	22.7	16.2	
Brown Deer - 5	X4900	9.144	54.174	7.5	6	5869	45.7	32.5	22.3	15.0	
Brown Deer - 6	X4900	8.947	55.594	7.5	3	3263	20.6	16.4	13.1	10.8	
Brown Deer - 7	X4900	9.46	44.89	7.5	8	7925	63.3	43.9	28.8	18.1	
Burleigh - 5	X8600	10.92	30.78	5	7	6464	64.5	45.2	30.2	19.5	
Burleigh - 6	X8600	11.4	28.72	5	4	4249	32.4	24.8	18.9	14.8	
Burleigh - 7	X8600	13.2	32.766	5	3	3105	26.7	21.9	18.1	15.4	
Burleigh - 8	X8600	5.929	32.007	5	5	4638	34.1	23.9	16.1	10.4	
Burlington 8.32 - 5	X19700	5.95	30.79	5	2	1493	8.7	7.7	7.0	6.4	
Burlington 8.32 - 6	X19700	8.672	29.305	5	4	3477	24.0	18.5	14.2	11.1	
Caledonia - 5	X19900	7.2	27.9	3.75	2	1768	13.6	11.3	9.5	8.2	
Caledonia - 6	X19900	8.41	32.86	5	5	4477	35.6	25.8	18.2	12.8	
Calhoun - 5	X53400	12.764	48.589	10	8	8199	47.0	34.7	25.1	18.2	
Calhoun - 6	X53400	12.994	48.686	10	4	4200	21.6	18.5	16.1	14.4	
Calumet - 5	X18700	10.7	47.6	11.2	7	6576	28.4	22.0	17.1	13.5	
Calumet - 6	X18700	10.6	46.5	11.2	7	6798	29.4	22.7	17.4	13.6	
Cameron - 5	X7400	12.96	42.18	7.5	7	7313	54.5	39.5	27.9	19.6	
Cameron - 6	X7400	12.896	41.8	7.5	7	7088	54.0	39.2	27.7	19.5	
Cameron - 7	X7400	9.39	46.86	7.5	7	6706	47.4	33.7	23.1	15.5	
Campbellsport - 5	X17000	9.8	30.53	5	4	3691	29.8	22.6	17.0	13.0	
Campbellsport - 6	X17000	9.62	30.54	5	1	600	10.2	10.0	9.8	9.7	
Capitol - 5	X21900	8.281	50.555	10	10	9615	57.0	39.5	25.8	16.1	
Capitol - 6	X21900	8.183	50.088	10	7	7187	34.1	24.8	17.5	12.3	
Cedar Grove - 6	X13100	4.87	18.738	2.5	3	3015	35.8	24.7	16.0	9.8	
Charles - 5	X15500	7.567	41.432	7.5	8	7863	58.2	39.9	25.8	15.7	
Charles - 6	X15500	7.522	41.872	7.5	6	6209	36.3	26.0	17.9	12.1	
Chenequa - 5	X72400	11.455	48.317	7.5	3	3034	19.9	16.9	14.5	12.8	
Chenequa - 6	X72400	11.423	48.554	7.5	9	7990	75.6	52.5	34.5	21.7	
Church - 5	X15100	7.9	29.99	5	3	3346	22.6	17.3	13.2	10.2	
Church - 6	X15100	8.56	23.465	3.75	3	2943	23.5	18.2	14.0	11.0	
Cleveland - 5	X13600	5.84	16.888	2.5	2	1765	14.6	11.4	9.0	7.2	
Coldspring - 5	X21600	15.65	43.534	10	10	9000	54.9	40.8	29.8	21.9	
Coldspring - 6	X21600	16.15	46.38	10	10	9699	64.4	47.0	33.5	23.9	
College - 5	X18000	11.598	53.318	10	8	7832	48.2	35.0	24.8	17.5	
College - 6	X18000	11.416	53.951	10	7	6050	34.8	26.4	19.8	15.2	
County Line - 5	X2700	11.59	46.172	10	11	10401	63.5	44.8	30.3	19.9	
County Line - 6	X2700	11.441	54.023	10	7	6201	34.3	26.1	19.7	15.1	
County Line - 7	X2700	11.344	48.653	10	10	9300	58.1	41.3	28.2	18.8	
Deerfield - 5	X37200	5.561	18.909	2.5	2	1538	13.3	10.5	8.3	6.8	
Delafield - 5	X40300	7.881	31.264	5	6	5928	60.1	41.3	26.7	16.2	
Derby - 5	X10700	10.88	46.85	7.5	2	2371	15.7	14.0	12.6	11.6	
Derby - 6	X10700	10.992	47.532	7.5	7	6389	47.1	34.1	24.0	16.8	
Derby - 7	X10700	13.515	35	7.5	7	7065	47.0	34.9	25.6	18.9	
Des Plaines - 5	X41500	6.2	28.2	5.6	4	3658	19.0	14.4	10.8	8.3	
Des Plaines - 6	X41500	9.001	27.691	5	3	3048	21.5	17.0	13.5	11.0	

24.9/26.4 kV to 8.32 kV Substation Transformer Losses (SEW)

Substation Transformer	Base ID	No Load Losses	Full Load Losses	Test MVA	Peak Load (MVA)	Peak Load (kW)	Losses at 100% Load	Losses at 80% Load	Losses at 60% Load	Losses at 40% Load	Comments
Donges Bay - 5	X42400	14	53.058	10	8	7599	45.5	34.1	25.3	19.0	
Donges Bay - 6	X42400	13.88	53.976	10	3	0	17.8	16.4	15.3	14.5	
Douglas - 5	X22800	10.977	52.608	10	9	9000	57.5	40.7	27.7	18.4	
Douglas - 6	X22800	11.642	54.167	10	13	12600	100.4	68.4	43.6	25.8	
Douglas - 7	X22800	8.9	50	10	8	8199	44.2	31.5	21.6	14.5	
Dousman - 5	X13500	7.027	29.013	5	3	3281	20.8	15.9	12.0	9.2	
Dousman - 6	X13500	6.751	29.896	5	4	3832	27.6	20.1	14.3	10.1	
Eagle - 5	X13700	6.626	19.315	2.5	1	1430	13.0	10.7	8.9	7.7	
Eagle - 6	X13700	6.857	16.59	2.5	4	3568	44.5	31.0	20.4	12.9	
East Troy - 5	X16800	8.12	33.54	5	3	2919	20.2	15.8	12.5	10.0	
East Troy - 6	X16800	8.07	33.3	5	4	3778	28.9	21.4	15.6	11.4	
Eden - 6	X10300	5.244	18.999	2.5	3	2571	27.5	19.5	13.3	8.8	
Edgerton - 5	X81600	17.869	47.369	10	3	3099	23.3	21.4	19.8	18.7	
Edgerton - 6	X81600	17.381	47.601	10	7	6000	38.1	30.7	24.8	20.7	
Elkhart Lake 8.32 - 7	X60600	8.321	35.759	5	2	2151	15.3	12.8	10.8	9.4	
Elkhart Lake 8.32 - 8	X60600	8.68	35.1	5	4	3800	29.3	21.9	16.1	12.0	
Elm Grove - 5	X24600	9.3	49.3	10	8	7635	41.4	29.9	20.9	14.4	
Elm Grove - 6	X24600	12.5	55.8	10	6	5980	34.2	26.4	20.3	16.0	
Elmwood - 5	X31400	11.238	52.191	10	7	6547	35.1	26.5	19.8	15.1	
Elmwood - 6	X31400	10.954	52.787	10	8	7848	46.7	33.8	23.8	16.7	
Emmet - 5	X10400	8.6	34.245	5	3	2603	21.1	16.6	13.1	10.6	
Emmet - 6	X10400	6.691	30.079	5	5	5013	40.7	28.4	18.9	12.1	
Erie - 5	X22500	9.036	51.129	10	6	5400	26.2	20.0	15.2	11.8	
Erie - 6	X22500	8.79	51.25	10	12	11301	81.4	55.2	34.9	20.4	
Erie - 7	X22500	9.69	37.528	10	11	11301	58.5	40.9	27.2	17.5	
Fond Du Lac - 5	X19200	7.85	44.85	10	5	4593	17.5	14.0	11.3	9.4	
Fond Du Lac - 6	X19200	7.96	45.04	10	11	10320	57.9	39.9	25.9	15.9	
Forest Home - 5	X6100	11.04	30.705	5	8	7636	93.8	64.0	40.8	24.3	
Forest Home - 6	X6100	11.52	30.47	5	5	4759	43.5	32.0	23.0	16.6	
Forest Home - 7	X6100	8.56	36.68	5	5	4285	38.4	27.7	19.3	13.3	
Forest Home - 8	X6100	6.23	30.07	5	7	6292	58.3	39.6	25.0	14.6	
Fort Atkinson 8.32 - 5	X19100	5.863	27.631	5	2	1875	10.4	8.8	7.5	6.6	
Fort Atkinson 8.32 - 6	X19100	6.2	31.7	5	6	5872	58.2	39.5	24.9	14.5	
Freistadt - 5	X14300	8.47	33.95	5	6	6260	64.8	44.5	28.8	17.5	
Gatliff - 5	X15000	13	35.721	7.5	6	6201	37.7	28.8	21.9	17.0	
Gatliff - 6	X15000	9.669	38.531	7.5	5	4401	24.1	18.9	14.9	12.0	
Gatliff - 7	X15000	11.868	41.973	7.5	8	7701	57.4	41.0	28.2	19.1	
Gebhardt - 5	X27900	10.1	47.336	10	11	10401	66.3	46.1	30.3	19.1	
Gebhardt - 6	X27900	9.95	47.394	10	10	9699	61.2	42.8	28.4	18.2	
Gebhardt - 7	X27900	10.428	64.355	11.2	8	8199	46.6	33.6	23.5	16.2	
Genesee - 5	X4700	10.26	27.33	5	4	3683	26.5	20.7	16.1	12.9	
Genesee - 6	X4700	7.26	34.42	5	0	0	7.3	7.3	7.3	7.3	
Gibbsville - 6	X24200	8.269	35.08	5	3	2634	19.4	15.4	12.3	10.0	
Gilbert - 5	X15600	5.5	27.4	5	6	5862	49.0	33.4	21.2	12.5	
Gilbert - 6	X15600	7.827	29.385	5	4	3972	27.9	20.7	15.0	11.0	
Good Hope - 5	X13000	9.46	34.09	5	4	3595	29.3	22.2	16.6	12.6	
Good Hope - 6	X13000	8.48	29.803	5	5	5257	42.4	30.2	20.7	13.9	
Goodrich - 5	X19500	10.981	53	10	7	6801	39.6	29.3	21.3	15.6	
Goodrich - 6	X19500	11.503	45.638	10	8	7599	42.5	31.4	22.7	16.5	
Grafton - 5	X16400	9.101	27.947	5	4	3854	29.7	22.3	16.5	12.4	
Grafton - 6	X16400	8.723	27.862	5	4	4067	30.4	22.6	16.5	12.2	
Greendale - 5	X7800	7.41	46.339	7.5	7	6318	42.6	29.9	20.1	13.0	
Greendale - 6	X7800	7.745	46.796	7.5	6	6109	42.4	29.9	20.2	13.3	
Greendale - 7	X7800	9.978	42.545	7.5	4	3625	20.3	16.6	13.7	11.6	
Greenfield - 5	X9200	11.86	31.53	5	8	7046	85.7	59.1	38.4	23.7	
Greenfield - 6	X9200	11.04	31.65	5	7	6861	79.9	55.1	35.8	22.1	
Greenfield - 7	X9200	8.32	33.86	5	6	5930	58.5	40.4	26.4	16.3	
Hackbarth - 5	X15700	6.78	51.09	8.4	6	5601	34.7	24.7	16.8	11.3	
Hackbarth - 6	X15700	9.834	43.98	8.4	4	3909	21.4	17.2	14.0	11.7	
Hales Corners - 5	X7300	8.54	30.505	5	5	4592	38.4	27.7	19.3	13.3	
Hales Corners - 7	X7300	8.87	34.28	5	6	5431	53.2	37.2	24.8	16.0	

24.9/26.4 kV to 8.32 kV Substation Transformer Losses (SEW)

Substation Transformer	Base ID	No Load Losses	Full Load Losses	Test MVA	Peak Load (MVA)	Peak Load (kW)	Losses at 100% Load	Losses at 80% Load	Losses at 60% Load	Losses at 40% Load	Comments
Hartland - 5	X8100	9.873	28.193	5	4	3924	27.6	21.2	16.2	12.7	
Hartland - 6	X8100	8.34	35.737	5	3	3445	25.4	19.3	14.5	11.1	
Holloway - 5	X14700	6.457	16.757	2.5	2	1933	17.1	13.2	10.3	8.2	
Holloway - 6	X14700	9.04	26.14	3.75	2	1490	13.2	11.7	10.6	9.7	
Jackson - 5	X17900	8.51	28.439	5	5	4595	37.9	27.3	19.1	13.2	
Jackson - 6	X17900	7.455	29.358	5	3	2652	17.7	14.0	11.1	9.1	
Jerome Park - 5	X19800	17.64	45.91	10	6	6196	36.1	29.4	24.3	20.6	
Jerome Park - 6	X19800	17.75	45.92	10	8	7630	46.9	36.4	28.2	22.4	
Johnson Creek - 5	X18100	4.98	19.084	2.5	2	1682	15.7	11.9	8.8	6.7	
Johnson Creek - 6	X18100	9.3	25.8	2.5	1	585	11.0	10.4	9.9	9.6	
Kettle Moraine - 5	X21300	6.456	34.745	5.6	3	3004	16.8	13.1	10.2	8.1	
Kettle Moraine - 6	X21300	7.234	29.686	5	5	5129	43.0	30.1	20.1	12.9	
Kewaskum - 5	X5500	8.969	27.71	5	3	2898	20.1	16.1	13.0	10.7	
Kewaskum - 6	X5500	8.07	32.84	5	5	4669	40.1	28.6	19.6	13.2	
Knellsville - 5	X22400	10.368	31.5	5	2	2415	17.8	15.1	13.0	11.6	
Knellsville - 6	X22400	7.56	29.436	5	3	2667	16.6	13.4	10.8	9.0	
La Fayette - 6	X20700	5.462	19.196	2.5	2	1399	12.4	9.9	8.0	6.6	
Lannon - 5	X19600	7.5	22.698	3.75	1	763	8.6	8.2	7.9	7.7	
Lannon - 6	X19600	7.995	28.63	5	3	2863	17.6	14.2	11.5	9.5	
Layton - 5	X9500	6.848	57.553	7.5	7	6509	55.3	37.8	24.3	14.6	
Layton - 6	X9500	8.817	52.617	7.5	3	2684	15.6	13.2	11.3	9.9	
Layton - 7	X9500	7.05	55.69	7.5	7	7047	58.6	40.0	25.6	15.3	
Liberty - 5	X21700	17.08	46.47	10	8	7550	45.9	35.5	27.5	21.7	
Liberty - 6	X21700	16.5	46.41	10	7	6648	37.8	30.1	24.2	19.9	
Lomira - 5	X22100	6.52	16.893	2.5	2	2048	18.3	14.0	10.8	8.4	
Lomira - 6	X22100	6.799	34.279	5	2	1595	10.9	9.4	8.3	7.5	
Mallory - 5	X52600	17.674	47.955	10	5	4701	29.2	25.0	21.8	19.5	
Mallory - 6	X52600	17.145	47.42	10	13	12201	96.1	67.6	45.6	29.8	
Marcy - 5	X32300	8.34	45.48	7.5	6	5525	35.8	25.9	18.2	12.7	
Marcy - 6	X32300	6.95	54.78	7.5	7	6811	58.6	40.0	25.5	15.2	
Marshall - 5	X14500	8.4	26.31	3.75	3	2739	24.7	18.8	14.3	11.0	
Marshfield - 5	X29100	6.35	16.964	2.5	2	1648	13.9	11.2	9.1	7.6	
Marytown - 5	X14000	7.332	19.795	2.5	1	950	10.2	9.2	8.4	7.8	
Medford - 5	X7900	9.162	34.635	5	4	3351	26.6	20.3	15.4	11.9	
Medford - 6	X7900	9.2	34.755	5	6	6228	63.2	43.7	28.6	17.8	
Medford - 7	X7900	8.236	37.033	5	3	2683	18.9	15.1	12.1	9.9	
Medford - 8	X7900	6.032	32.295	5	7	6701	64.1	43.2	26.9	15.3	
Melvina - 5	X31500	9.039	51.15	10	6	6243	29.6	22.2	16.4	12.3	
Melvina - 6	X31500	9.059	50.962	10	10	9637	57.4	40.0	26.5	16.8	
Merton - 5	X35900	8.91	28.325	5	3	3375	22.6	17.7	13.8	11.1	
Merton - 6	X35900	7.697	32.837	5	6	5613	51.5	35.7	23.5	14.7	
Mount Calvary - 5	X18200	7.62	23.28	3.75	2	1930	13.8	11.6	9.8	8.6	
Nashotah - 5	X13400	6	17.019	2.5	2	2191	19.9	14.9	11.0	8.2	
New Berlin - 5	X10100	8.691	28.488	5	3	3197	20.7	16.4	13.0	10.6	
New Berlin - 6	X10100	8.69	34.05	5	6	2805	56.9	39.5	26.0	16.4	
Newburg - 5	X27800	8.11	23.69	3.75	1	1242	11.3	10.2	9.3	8.6	
Newburg - 6	X27800	7.18	25.457	3.75	1	1079	9.4	8.6	8.0	7.5	
Northridge - 5	X20800	17.04	46.61	10	10	10101	66.5	48.7	34.8	25.0	
Northridge - 6	X20800	16.99	45.99	10	4	3099	22.6	20.6	19.0	17.9	
Northridge - 7	X20800	14.735	52.912	10	4	3999	24.1	20.7	18.1	16.2	
Norwauk - 5	X15200	9.88	44.64	7.5	8	7701	61.9	43.2	28.6	18.2	
Norwauk - 6	X15200	10.87	39.651	7.5	4	3399	19.5	16.4	14.0	12.3	
Norwauk - 7	X15200	12.424	35.672	7.5	7	7401	47.2	34.7	24.9	18.0	
Oak Park - 5	X16100	7.596	41.157	7.5	7	6399	38.8	27.6	18.8	12.6	
Oak Park - 6	X16100	7.683	40.674	7.5	6	6201	36.4	26.0	18.0	12.3	
Oak Park - 7	X16100	11.832	42.623	7.5	6	5799	40.7	30.3	22.2	16.4	
Okauchee - 5	X12600	7.89	32.85	5	3	3240	23.4	17.8	13.5	10.4	
Okauchee - 6	X12600	8.009	36.532	5	2	1718	12.5	10.9	9.6	8.7	
Oostburg - 6	X18900	7.084	22.975	3.75	4	3908	35.9	25.5	17.5	11.7	
Orchard - 5	X11000	8.7	49.1	11.2	6	5799	21.9	17.1	13.4	10.8	
Orchard - 6	X11000	8.7	48.4	11.2	7	6399	25.0	19.1	14.6	11.3	

24.9/26.4 kV to 8.32 kV Substation Transformer Losses (SEW)

Substation Transformer	Base ID	No Load Losses	Full Load Losses	Test MVA	Peak Load (MVA)	Peak Load (kW)	Losses at 100% Load	Losses at 80% Load	Losses at 60% Load	Losses at 40% Load	Comments
Parkway - 5	X9800	8.869	51.113	10	6	5736	25.7	19.7	14.9	11.6	
Parkway - 6	X9800	9.1	48.7	10	8	8236	43.1	30.8	21.3	14.5	
Pewaukee - 5	X21800	5.54	27.6	5	5	4909	32.7	22.9	15.3	9.9	
Pewaukee - 6	X21800	7.156	30.895	5	2	2233	14.8	12.1	9.9	8.4	
Phantom Lake - 5	X2800	7.706	29.142	5	5	4491	34.2	24.7	17.2	11.9	
Phantom Lake - 6	X2800	7.423	29.395	5	4	3889	25.9	19.3	14.1	10.4	
Pike Lake - 6	X76300	6.01	31.087	5	4	4200	29.0	20.7	14.3	9.7	
Pilgrim - 5	X15900	7.692	29.341	5	2	1880	12.0	10.5	9.2	8.4	
Pilgrim - 6	X15900	7.665	29.682	5	6	5036	43.7	30.8	20.7	13.4	
Pioneer 8.32 - 5	X14900	6.5	29.321	5	1	1470	9.1	8.2	7.4	6.9	
Pioneer 8.32 - 6	X14900	8.475	38.217	5	6	5432	57.1	39.6	26.0	16.3	
Plainfield - 5	X20100	10.391	52.941	10	9	8301	49.6	35.5	24.5	16.7	
Plainfield - 6	X20100	11.022	52.585	10	6	6099	31.9	24.4	18.5	14.4	
Polk - 5	X30200	6.315	23.005	3	2	1431	12.8	10.4	8.6	7.3	
Polk - 6	X30200	7.2	25.89	3.75	2	2022	15.1	12.3	10.1	8.5	
Prospect - 5	X32000	6.553	29.382	5	5	5235	41.7	29.1	19.2	12.2	
Prospect - 6	X32000	6.713	29.737	5	5	4681	35.6	25.2	17.1	11.3	
Random Lake 8.32 - 7	X4300	6.032	17.157	2.5	2	1633	14.0	11.1	8.9	7.3	
Random Lake 8.32 - 8	X4300	5.5	19.532	2.5	3	2475	25.3	18.2	12.6	8.7	
Rawson - 5	X19300	8.859	33.608	5	5	4401	37.3	27.1	19.1	13.4	
Rawson - 6	X19300	6.464	29.833	5	5	5301	41.3	28.7	19.0	12.0	
Richfield - 5	X14800	6.024	34.642	5	5	4509	39.0	27.1	17.9	11.3	
Richfield - 6	X14800	6.16	31.62	5	5	4985	40.7	28.3	18.6	11.7	
Robin - 5	X22200	11.8	53.4	10	9	8285	50.8	36.8	25.9	18.0	
Robin - 6	X22200	12.1	54.5	10	8	7650	47.1	34.5	24.7	17.7	
Rugby - 5	X36100	8.79	34.7	5	3	2899	22.9	17.8	13.9	11.0	
Rugby - 6	X36100	7.355	32.339	5.6	3	2612	16.3	13.1	10.6	8.8	
Rusco - 5	X16000	8.5	28.832	5	4	4334	30.9	22.9	16.6	12.1	
Rusco - 6	X16000	8.659	28.407	5	3	2849	18.0	14.7	12.0	10.2	
Ryan - 5	X26900	6.324	31.48	5	2	1922	11.7	9.7	8.2	7.2	
Saint Martins 8.32 - 5	X11200	5.57	27.6	5	5	4424	28.4	20.2	13.8	9.2	
Saint Martins 8.32 - 6	X11200	6.67	31.72	5	5	4822	37.2	26.2	17.7	11.6	
Salem - 5	X17700	5.92	30.85	5	5	5130	39.6	27.5	18.1	11.3	
Salem - 6	X17700	6.01	31.087	5	2	-182	12.7	10.3	8.4	7.1	
Sheldon - 5	X26800	6.852	29.699	5	5	4838	35.3	25.0	17.1	11.4	
Sheldon - 6	X26800	6.774	29.508	5	7	6760	64.6	43.8	27.6	16.0	
Shepard - 5	X64500	16.4	50.062	10	9	8901	60.6	44.7	32.3	23.5	
Shepard - 6	X64500	15.919	49.613	10	7	6600	40.9	31.9	24.9	19.9	
Sheridan - 5	X19400	7.28	55.693	7.5	6	5619	40.8	28.7	19.3	12.6	
Sheridan - 6	X19400	6.85	55.48	7.5	8	6977	64.6	43.8	27.6	16.1	
Shirley - 5	X48300	8.764	51.403	10	10	9501	55.2	38.5	25.5	16.2	
Shirley - 6	X48300	8.606	51.095	10	11	10401	68.2	46.7	30.1	18.1	
Shirley - 7	X48300	6.67	55.676	11.2	9	8301	40.3	28.2	18.8	12.0	
Silver Lake - 5	X5200	8.576	27.929	5	6	5703	49.0	34.4	23.1	15.0	
Silver Lake - 6	X5200	8.921	27.781	5	1	1001	10.1	9.7	9.3	9.1	
Six Mile - 5	X12700	7.461	29.47	5	5	4541	32.6	23.5	16.5	11.5	
Six Mile - 6	X12700	7.377	29.166	5	4	3951	27.9	20.5	14.8	10.7	
Sixty-Fifth Street - 5	X16200	12.756	35.418	7.5	7	6699	43.6	32.5	23.9	17.7	
Sixty-Fifth Street - 6	X16200	12.1	35.306	7.5	6	5901	37.8	28.5	21.4	16.2	
Sixty-Fifth Street - 7	X16200	8.929	52.415	7.5	5	4800	31.3	23.2	17.0	12.5	
Southport - 5	X12300	9.44	34.34	5	4	3981	33.9	25.1	18.2	13.3	
Southport - 6	X12300	8.32	29.777	5	4	3720	26.5	19.9	14.8	11.2	
Sowauk - 5	X30900	13.039	49.012	10	10	9501	58.2	41.9	29.3	20.3	
Sowauk - 6	X30900	13.649	48.652	10	9	8100	51.3	37.8	27.2	19.7	
Springbrook - 5	X36500	13.219	48.403	10	10	9399	65.6	46.7	32.1	21.6	
Springbrook - 6	X36500	13.399	48.734	10	6	6099	32.7	25.8	20.4	16.5	
Springdale - 5	X33100	7.448	29.395	5	3	3114	21.6	16.5	12.5	9.7	
Springdale - 6	X33100	5.489	36.759	5	4	3744	26.7	19.1	13.1	8.9	
Sturtevant - 5	X34600	11.09	28.72	5	2	2170	16.5	14.6	13.0	12.0	
Sturtevant - 6	X34600	9.126	33.113	5	4	3368	26.3	20.1	15.3	11.9	
Sullivan - 6	X31600	5.16	18.67	2.5	2	2151	19.0	14.0	10.1	7.4	

24.9/26.4 kV to 8.32 kV Substation Transformer Losses (SEW)

Substation Transformer	Base ID	No Load Losses	Full Load Losses	Test MVA	Peak Load (MVA)	Peak Load (kW)	Losses at 100% Load	Losses at 80% Load	Losses at 60% Load	Losses at 40% Load	Comments
Sunny Slope - 5	X12400	8.3	48.29	7.5	5	4701	33.3	24.3	17.3	12.3	
Sunny Slope - 6	X12400	8.68	49.44	7.5	6	5901	42.5	30.3	20.8	14.1	
Sunnyside - 5	X25100	13.398	53.218	10	7	6300	38.0	29.2	22.3	17.3	
Sunnyside - 6	X25100	13.637	52.982	10	11	10500	76.6	53.9	36.3	23.7	
Teutonia - 5	X20200	15.4	48	10	5	5345	29.6	24.5	20.5	17.7	
Teutonia - 6	X20200	15.7	47	10	10	9936	64.6	47.0	33.3	23.5	
Thiensville - 5	X6200	6.653	16.398	2.5	3	3125	35.5	25.1	17.0	11.3	
Thiensville - 6	X6200	6.643	16.81	2.5	2	1935	17.1	13.4	10.4	8.3	
Union - 5	X20400	17.5	45.84	10	10	9300	60.6	45.1	33.0	24.4	
Union - 6	X20400	13.399	56.769	10	8	7899	51.6	37.8	27.1	19.5	
Union Grove - 5	X35400	9.533	32.737	5	5	4445	36.0	26.5	19.1	13.8	
Union Grove - 6	X35400	9.124	33.662	5	6	6110	62.9	43.5	28.5	17.7	
Uptown - 5	X13800	9.598	47.905	10	6	5400	24.6	19.2	15.0	12.0	
Uptown - 6	X13800	9.679	48.586	10	9	8001	45.6	32.7	22.6	15.4	
Vernon - 5	X41400	9.34	30.64	5	4	3385	26.4	20.2	15.5	12.1	
Vernon - 6	X41400	7.929	34.791	5	4	3577	28.2	20.9	15.2	11.2	
Viewport - 5	X17600	10.675	38.822	8.4	5	4500	23.9	19.1	15.4	12.8	
Viewport - 6	X17600	10.269	39.723	8.4	7	6801	41.1	30.0	21.4	15.2	
Wakoka - 5	X15800	10.874	57.398	8.4	6	5736	44.2	32.2	22.9	16.2	
Wakoka - 6	X15800	10.823	56.991	8.4	3	2827	18.8	15.9	13.7	12.1	
Waldo - 5	X28600	7.69	23.24	3.75	3	2838	22.5	17.2	13.0	10.1	
Waldo - 6	X28600	8.784	34.153	5	3	2924	22.6	17.6	13.8	11.0	
Wales - 5	X16700	6.384	29.358	5	8	7286	74.0	49.7	30.7	17.2	
Water 8.32 - 5	X35800	9.67	45.43	7.5	7	6956	52.5	37.1	25.1	16.5	
Water 8.32 - 6	X35800	9.98	45.25	7.5	8	7109	56.9	40.0	26.9	17.5	
Water 8.32 - 7	X35800	9.168	42.202	7.5	8	7109	52.7	37.0	24.8	16.1	
Waterford - 5	X26700	11.341	41.976	7.5	3	2951	19.4	16.5	14.2	12.6	
Waterford - 6	X26700	6.28	31.46	5	3	2440	15.3	12.1	9.5	7.7	
Waubeka - 5	X29500	5.454	36.43	5	4	4111	34.5	24.1	15.9	10.1	
Waubeka - 6	X29500	7.391	29.927	5	3	3433	21.9	16.7	12.6	9.7	
Waukesha Beach - 5	X11100	10.36	35.552	5	3	2865	24.4	19.3	15.4	12.6	
West Bend - 5	X74100	8.3	52.3	11.2	6	6115	24.3	18.6	14.1	10.9	
West Bend - 6	X74100	8.5	53.7	11.2	6	5689	23.5	18.1	13.9	10.9	
Wewauk - 5	X12100	9.886	41.551	8.4	6	6245	34.2	25.4	18.6	13.8	
Wewauk - 6	X12100	9.261	39.26	8.4	4	3787	18.5	15.1	12.6	10.7	
Wildwood - 5	X5900	13.12	41.52	7.5	9	8791	73.7	51.9	34.9	22.8	
Wildwood - 6	X5900	12.8	42.6	7.5	3	3371	21.5	18.4	15.9	14.2	
Wildwood - 7	X5900	6.72	42.66	7.5	7	7170	47.9	33.1	21.6	13.3	
Willow 8.32 - 5	X11900	9.761	32.898	5	2	2400	17.7	14.9	12.6	11.0	
Willow 8.32 - 6	X11900	10.624	31.5	5	6	6205	63.8	44.6	29.8	19.1	
Wind Lake - 5	X10900	7.98	33.26	5	5	4679	41.6	29.5	20.1	13.4	
Wind Lake - 6	X10900	7.707	29.622	5	4	3761	25.5	19.1	14.1	10.6	
Wirth Park - 5	X18600	10.851	51.931	10	7	7177	38.8	28.7	20.9	15.3	
Wirth Park - 6	X18600	10.915	52.505	10	6	5399	27.0	21.2	16.7	13.5	
Woods - 5	X25800	14.107	52.656	10	6	5499	32.1	25.7	20.6	17.0	
Woods - 6	X25800	13.824	52.04	10	7	6300	36.0	28.0	21.8	17.4	

All Losses are in kW
Peak Load data is from 8/21/2003 1500 hrs
*Losses = (No Load Losses) + (Load MVA / Test MVA)^2 * (Full Load Losses)*

		System Load (kW)	Total Losses (kW)	Ave. % Loss
Totals:	**100%**	**1471426**	**10409**	**0.71%**
	80%	**1177141**	**7627**	**0.65%**
	60%	**882856**	**5463**	**0.62%**
	40%	**588570**	**3917**	**0.67%**

APPENDIX D1

24.9/26.4 kV to 8.32 kV Substation Transformer Losses (SEW)

Substation Transformer	Base ID	No Load Losses	Full Load Losses	Test MVA	Peak Load (MVA)	Peak Load (kW)	Losses at 100% Load	Losses at 80% Load	Losses at 60% Load	Losses at 40% Load	Comments

Missing Data for the following transformers

Substation Transformer	Base ID	No Load Losses	Full Load Losses	Test MVA	Comments
Addison - 6	X26300	7.18	25.69	3.75	NO SMIS DATA
Ashippun - 5	X10800	8.6	28.44	5	NO SMIS DATA
Aztalan - 5	X47300	6.193	17.235	2.5	NO SMIS DATA
Bristol - 5	X33300	8	33.2	5	NO SMIS DATA
Browns Lake - 6	X12900	9.716	33.342	5	NO SMIS DATA
Byron - 5	X18400	7.55	23.795	3.75	NO SMIS DATA
Carrollville - 5	X27500	6.487	29.548	5	NO SMIS DATA
Clyman - 5	X12500	3.986	9.317	1	NO SMIS DATA
Clyman - 6	X12500	3.954	8.065	1	NO SMIS DATA
Delafield - 6	X40300	6.89	31.65	5	NO DATA AVAILABLE
Erin - 5	X34700	5.549	19.076	2.5	NO SMIS DATA
Erin - 6	X34700	6.08	17.105	2.5	NO SMIS DATA
Farmington - 5	X4200	6.54	18.8	2.5	NO SMIS DATA
Franklin - 5	X14400	7.664	29.952	5	NO SMIS DATA
Franksville - 5	X15300	8.53	32.86	5	INVALID PEAK DATA
Franksville - 6	X15300	6.64	36.173	5.6	NO DATA AVAILABLE
Freistadt - 6	X14300	6.75	29.226	5	NO DATA AVAILABLE
Hebron - 5	X14200	3.929	9.48	1	NO SMIS DATA
Hebron - 6	X14200	4.117	9.335	1	NO SMIS DATA
Hubbleton - 5	X20000	6.643	16.893	2.5	NO SMIS DATA
Hubbleton - 6	X20000	4.02	7.569	1	NO SMIS DATA
Iron Ridge - 5	X10000	3.945	9.432	1	NO SMIS DATA
Iron Ridge - 6	X10000	6.476	26.953	3.75	NO SMIS DATA
Ixonia - 5	X11500	4.506	18.344	2.5	NO SMIS DATA
La Belle - 6	X24100	7.599	29.331	5	Readings started on 9/6/04
Little Prairie - 5	X28700	6.2	18.12	2.5	NO SMIS DATA
Marshall - 6	X14500	7.413	22.61	3.75	NO DATA AVAILABLE
North Cape - 6	X13200	5.282	19.122	2.5	NO SMIS DATA
North Lake - 5	X18300	4.98	18.518	2.5	NO SMIS DATA
Palmyra - 5	X14100	8.025	27.39	5	Readings started on 10/25/04
Pretty Lake - 6	X62500	6.217	16.71	2.5	NO SMIS DATA
Reeseville - 5	X27100	6.064	17.295	2.5	NO SMIS DATA
Reeseville - 6	X27100	4.8	18.558	2.5	NO SMIS DATA
Richmond - 6	X17100	8.45	23.73	3.75	NO SMIS DATA
Rock Lake - 5	X21200	3.92	7.99	1	NO SMIS DATA
Rock Lake - 6	X21200	4.02	7.569	1	NO SMIS DATA
Rome - 5	X20500	6.539	30.836	5	Readings started on 9/6/04
Saint Lawrence 8.32 - 8	X19000	6.208	17.405	2.5	NO SMIS DATA
Saylesville - 6	X20900	6.81	16.82	2.5	NO SMIS DATA
Scott - 6	X11700	5.22	19.074	2.5	NO SMIS DATA
Springfield - 5	X10600	5.381	18.894	2.5	NO SMIS DATA - Normally Open
Springfield - 6	X10600	5.346	19.134	2.5	NO SMIS DATA
Sullivan - 5	X31600	3.856	9.272	1	NO SMIS DATA
Theresa - 5	X16900	5.37	36.3	5	NO SMIS DATA
Tibbits - 5	X30100	8.325	35.724	5	Readings started on 10/25/04
Tibbits - 6	X30100	6.01	37.1	5	NO SMIS DATA
Tibbits - 6	X30100	6.01	37.1	5	Readings started on 10/25/04
Trenton - 5	X11300	4.02	7.99	1	Readings started on 10/25/04
Trenton - 6	X11300	7.98	23.79	3.75	Readings started on 10/25/04
Wales - 6	X16700	7.723	29.311	5	NO SMIS
Waterloo - 5	X6900	4.02	7.569	1	NO SMIS DATA
Wilmot - 5	X15400	4.62	18.485	2.5	NO SMIS DATA

APPENDIX D1

24.9/26.4 kV to 3.81 kV Substation Transformer Losses

Substation Transformer	ID	No Load Losses	Full Load Losses	Test MVA	Peak Load (MVA)	Peak Load (kW)	Losses at 100% Load	Losses at 80% Load	Losses at 60% Load	Losses at 40% Load	Comments
Armour - 5	E4150	11.8	53.28	7.5	4	3555	25.4	20.5	16.7	14.0	
Armour - 6	E4160	8.85	38.238	5	4	4062	38.0	27.5	19.4	13.5	
Armour - 7	E4170	7.69	35.3	5	4	4060	32.9	23.8	16.8	11.7	
Armour - 8	E4180	7.635	32.866	5	4	4013	31.0	22.6	16.1	11.4	
Bradley 3.81 - 5	E7650	8.7	35.951	5	2	1500	12.6	11.2	10.1	9.3	
Bradley 3.81 - 7	E7670	7.881	37.606	5	4	3801	33.4	24.2	17.1	12.0	
Concordia - 5	E6050	15.52	47.37	7.5	N/A	N/A	N/A	N/A	N/A	N/A	Missing 8/23-29 and 9/6-12
Concordia - 6	E6060	15.682	45.88	7.5	4	4378	32.0	26.1	21.5	18.3	
Concordia - 7	E6070	14.39	45.28	7.5	7	6850	55.0	40.4	29.0	20.9	
Ohio - 5	E8750	10.976	32.06	5	4	3582	29.5	22.9	17.7	13.9	
Ohio - 6	E8760	11.2	31.91	5	4	4175	34.7	26.2	19.7	15.0	
Ohio - 7	E8770	11.04	30.78	5	3	2838	21.6	17.8	14.8	12.7	
Ohio - 8	E8780	8.65	35.353	5	6	5477	55.9	38.9	25.7	16.2	
Westown - 5	E7150	16.675	46.3	7.5	4	4192	32.5	26.8	22.4	19.2	
Westown - 6	E7160	16.043	44.563	7.5	5	4772	36.1	28.9	23.3	19.3	
Westown - 7	E7170	9.194	51.117	7.5	5	4575	29.5	22.2	16.5	12.4	

All Losses are in kW
Peak Load data is from 8/21/2003 1500 hrs
*Losses = (No Load Losses) + (Load MVA / Test MVA)^2 * (Full Load Losses)*

		System Load (kW)	Total Losses (kW)	Ave. % Loss
Totals:	**100%**	**61830**	**500.31**	**0.809%**
	80%	**49464**	**380.10**	**0.768%**
	60%	**37098**	**286.61**	**0.773%**
	40%	**24732**	**219.83**	**0.889%**

The following transformers do not have metering information

Substation Transformer		No Load Losses	Full Load Losses	Test MVA	Comments
Atkinson - 1	E2200	14.784	36.05	7.5	No SMIS
Atkinson - 2	E2200	13.76	36.105	7.5	No SMIS
Atkinson - 3	E2200	12	36.24	7.5	No SMIS
High Street - 5	E29650	5.444	17.515	2	No SMIS
High Street - 6	E29660	5.155	17.86	2	No SMIS
High Street - 7	E29670	5.04	19.06	2.5	No SMIS
Whitnall - 6	E5860	6.216	27.298	3	No SMIS

APPENDIX D1

13.2 kV to 3.81 kV Substation Transformer Losses

Substation Transformer	ID	No Load Losses	Full Load Losses	Test MVA	Peak Load (MVA)	Peak Load (kW)	Losses at 100% Load	Losses at 80% Load	Losses at 60% Load	Losses at 40% Load	Comments
Cambridge - 5	E9650	12	40	7.5	4	4135	24.0	19.5	16.0	13.6	
Cambridge - 6	E9660	11	40	7.5	3	3356	19.8	16.8	14.4	12.7	
Walnut 3.81 - 5	E1750	17	41	7.5	N/A	N/A	N/A	N/A	N/A	N/A	No data for peak
Walnut 3.81 - 6	E1760	17	39	7.5	3	3333	25.1	22.2	19.9	18.3	
Walnut 3.81 - 7	E1770	13	42	7.5	2	1513	14.6	13.8	13.3	12.8	
Whitnall - 5	E5850	6	22	3	4	3287	38.5	26.8	17.8	11.3	

All Losses are in kW
Peak Load data is from 8/21/2003 1500 hrs
Losses = (No Load Losses) + (Load MVA / Test MVA) ^{2} ** (Full Load Losses)*

		System Load (kW)	Total Losses (kW)	Ave. % Loss
Totals:	**100%**	**15624**	**122.01**	**0.781%**
	80%	**12499**	**99.18**	**0.793%**
	60%	**9374.4**	**81.43**	**0.869%**
	40%	**6249.6**	**68.74**	**1.100%**

Iron Range Area Substation Transformer Losses

Substation Transformer	Voltage	ID	No Load Losses	Full Load Losses	Test MVA	Peak Load (MVA)	Peak Load (kW)	Losses at 100% Load	Losses at 80% Load	Losses at 60% Load	Losses at 40% Load	Comments
Aragon - 5	Z	ARA	9.843	45.698	8.4	5	5364	29.2	22.2	16.8	12.9	
Armory - 5	W	ARM	14.2	45.7	10	13	12999	95.0	65.9	43.3	27.1	
Armory - 6	W	ARM	13.082	49.195	11.2	8	7701	38.6	29.4	22.3	17.2	
Bass Lake - 5	W	BAS	15.755	52.12	10	13	12940	107.9	74.7	48.9	30.5	
Bluff View - 6	W	BLV	10.2	51.886	8.4	5	5161	30.7	23.4	17.6	13.5	
Bruce Crossing - 5	H	BRU	7.045	23.763	5	3	2855	14.8	12.0	9.8	8.3	
Crystal Falls - 5	Z	CRF	8.9	26.7	8.4	6	5522	21.1	16.7	13.3	10.9	
Felch Mountain - 8	Z	FMT	6.99	19.37	5.6	N/A	N/A	N/A	N/A	N/A	N/A	Readings start 10/11/2003
Greenstone - 5	Z	GRS	8.923	23.912	5.6	1	1450	10.6	10.0	9.5	9.2	
Land O Lakes - 6	Z	LOL	7.649	37.669	5	4	3744	35.0	25.2	17.5	12.0	
Powers - 6	Z	PWR	7.31	37.26	8.4	5	4546	18.5	14.5	11.3	9.1	
Sagola - 5	Z	SAG	7.4	40.8	8.4	6	6102	30.7	22.3	15.8	11.1	
Strawberry Hill - 6	Z	SBH	6.698	28.912	3.75	3	2536	20.4	15.5	11.6	8.9	
Watersmeet - 6	Z	WSM	7.8	37.08	5.6	4	3542	23.9	18.1	13.6	10.4	

All Losses are in kW
Peak Load data is from 8/21/2003 1500 hrs
*Losses = (No Load Losses) + (Load MVA / Test MVA)^2 * (Full Load Losses)*

		System Load (kW)	Total Losses (kW)	Ave. % Loss
Totals:	**100%**	**74462**	**476.46**	**0.64%**
	80%	**59569.6**	**349.86**	**0.59%**
	60%	**44677.2**	**251.40**	**0.56%**
	40%	**29784.8**	**181.07**	**0.61%**

Missing Data for the following

Substation Transformer	Voltage	ID	No Load Losses	Full Load Losses	Test MVA	Comments
Conover - 6	F	CON			5.6	Test Report Missing
Cornell 13.8 - 6	H	COR			7.5	Test Report Missing
Harris - 5	H	HAR			5	Test Report Missing
Mass - 5	F	MSS				No information
Plains - 8	H	PLA				No information
Plains - 9	H	PLA				No information
Randville - 6	H	RAN			3.75	Test Report Missing
Twin Lake - 5	H	TWL			3.75	Test Report Missing
Crystal Falls - 6	F	CRF	3.058	32.512	5	NO SMIS DATA

34.5kV FEEDER LOSS CALCULATION RESULTS

System Peak Date = 8/21/03 @ 1500 Hrs.

Substation	Feeder	% of Distr. Load at time of Sys. Pk (kW)	(1) Metered Power Flow (kW) (Incl. Line Losses)	(2) System Load (kW)	(3) Line Loss (kW)	(3)/(1) % Loss	Comments/Notes
Apple Hills	R5800	100%	14901.0	14829.0	72.0	0.48%	Feeds French SS
		80%	11932.0	11886.0	46.1	0.39%	
		60%	8957.0	8931.0	25.9	0.29%	
		40%	5917.0	5906.0	11.5	0.19%	
Butte Des Morts	R5180	100%	16500.0	16297.0	202.8	1.23%	Feeds County Hospital SS, SS Cap.
		80%	13400.0	12960.0	139.7	1.04%	assumed in at 100% only
		60%	9846.0	9768.0	78.6	0.80%	
		40%	6578.0	6543.0	34.9	0.53%	
Casaloma	R5150	100%	8799.0	8730.0	68.4	0.78%	Feeds Julius SS
		80%	7047.0	7003.0	43.8	0.62%	
		60%	5290.0	5266.0	24.6	0.47%	
		40%	3531.0	3519.0	10.9	0.31%	
City Limits	R5240	100%	6300.0	6234.0	66.2	1.05%	No distr. substations on this Feeder.
		80%	5050.0	5008.0	42.3	0.84%	
		60%	3796.0	3772.0	23.8	0.63%	
		40%	2536.0	2525.0	10.6	0.42%	
Falls	R5730	100%	6015.0	6003.9	11.1	0.18%	No distr. substations on this Feeder.
		80%	4813.5	4806.3	7.1	0.15%	Two large customers, only.
		60%	3575.3	3571.3	4.0	0.11%	All large conductor - 336 AS.
		40%	2384.3	2382.5	1.8	0.08%	
Maes	R5370	100%	9099.0	9068.0	31.0	0.34%	Feeds Weimar SS + 3 Loads.
		80%	7247.8	7227.9	19.9	0.27%	
		60%	5385.4	5374.3	11.2	0.21%	
		40%	3592.6	3587.6	5.0	0.14%	
Neevin	R5680	100%	20400.0	20290.7	109.3	0.54%	Feeds Winneconne T5 and Western Ave T5
		80%	16328.1	16258.2	69.9	0.43%	
		60%	12130.6	12091.3	39.3	0.32%	
		40%	8172.1	8154.6	17.5	0.21%	
Woodenshoe	R5960	100%	15801.0	15667.2	133.8	0.85%	Feeds Bridgewood T5
		80%	12671.5	12587.0	84.6	0.67%	4.5 mvar Cap 5 at Bridgewood SS.
		60%	9432.9	9385.0	47.8	0.51%	
		40%	6255.0	6229.9	25.1	0.40%	
White Clay	R5710	100%	1448.7	1446.0	2.7	0.19%	Feeds Waukechon SS only
		80%	1159.2	1157.5	1.7	0.15%	
		60%	869.6	868.6	1.0	0.11%	
		40%	579.9	579.4	0.4	0.07%	

34.5kV FEEDER LOSS CALCULATION RESULTS

System Peak Date = 8/21/03 @ 1500 Hrs.

Substation	Feeder	% of Distr. Load at time of Sys. Pk (kW)	(1) Metered Power Flow (kW) (Incl. Line Losses)	(2) System Load (kW)	(3) Line Loss (kW)	(3)/(1) % Loss	Comments/Notes
City Limits	R5110	100%	11901.0	11853.5	47.5	0.40%	Feeds Metro T6, Wash St. T5 & T6,
		80%	9528.8	9498.3	30.4	0.32%	Bell Hts T6; No other Distr. Loads.
		60%	7152.5	7135.4	17.1	0.24%	
		40%	4772.3	4764.6	7.6	0.16%	
White Lake	R5530	100%	8199.0	8091.4	107.6	1.31%	Feeds Fremont T6, Lind T6, Churney
		80%	6568.1	6499.2	69.8	1.06%	No other Distr. Loads.
		60%	4913.2	4874.4	38.7	0.79%	
		40%	3292.9	3275.6	17.2	0.52%	
Hintz	R5590	100%	6000.0	5985.0	15.1	0.25%	Feeds Shioctin T6, Maple Creek T5
		80%	4801.6	4792.0	9.6	0.20%	No other Distr. Loads.
		60%	3588.0	3582.6	5.4	0.15%	MPC Cap. C-2 out.
		40%	2392.8	2390.4	2.4	0.10%	
Ellington	R5500	100%	13215.0	12470.6	474.4	3.59%	Feeds Dale T6, Hortonia T5,
		80%	10573.3	10270.0	303.3	2.87%	Readfield T5, Hortonville T6;
		60%	7930.2	7759.7	170.5	2.15%	RDF Cap-2 out.
		40%	5286.5	5210.8	75.7	1.43%	
Lawn Road	R5780	100%	9300.1	9168.0	132.1	1.42%	Allocated SS loads. Alto Dairy=Spot.
		80%	7415.0	7323.3	91.7	1.24%	LWR Caps=4800; 2400 @ 60%; 0 @ 40%
		60%	5499.0	5453.1	45.5	0.83%	Feeds BlkCrk T5, Briarton T5 & T6,
		40%	3628.4	3609.4	19.0	0.52%	CenterValley T5, Lawrenceville T5, Nichols T5, Willow T6.

		Total Sum of Metered (kW)		Total Sum of Line Loss (kW)	Ave. % Loss
14 Feeder Totals:	100%	147878.8		1474.1	1.00%
	80%	118535.9		959.8	0.81%
	60%	88365.7		533.4	0.60%
	40%	58918.8		239.6	0.41%
			% Pk Load	Max.	Min.
		Feeder Range:	100%	3.59%	0.18%
			80%	2.87%	0.15%
			60%	2.15%	0.11%
			40%	1.43%	0.07%

25kV FEEDER LOSS CALCULATION RESULTS

System Peak Date = 8/21/03 @ 1500 Hrs.

Substation	Feeder	% of Distr. Load at time of Sys. Pk (kW)	(1) Metered Power Flow (kW) (Incl. Line Losses)	(2) System Load (kW)	(3) Line Loss (kW)	(3)/(1) % Loss	Comments/Notes
Butternut	**Z33582**	**100%**	8500.0	8315.6	183.5	2.16%	Campbellsport SS; Cap bank at Campbellsport
		80%	6752.8	6635.3	117.5	1.74%	assumed to be out.
		60%	5029.6	4963.6	66.1	1.31%	
		40%	3329.6	3300.2	29.4	0.88%	
Kenosha	**Z9391**	**100%**	17808.0	17425.0	382.9	2.15%	No Distr. Substations
		80%	14140.0	13895.0	245.0	1.73%	
		60%	10525.0	10387.0	137.8	1.31%	
		40%	7033.0	6971.0	61.3	0.87%	
Lincoln	**J93284**	**100%**	3443.0	3435.0	8.0	0.23%	West Allis Hosp. & WA Women's Ctr - only 2 cust's.
		80%	2728.0	2723.0	5.1	0.19%	
		60%	2026.0	2023.0	2.9	0.14%	
		40%	1344.0	1343.0	1.3	0.10%	
96th St.	**Z4585**	**100%**	5351.0	5333.0	18.0	0.34%	Unit Line to Quad Graphics
		80%	4239.0	4228.0	11.5	0.27%	
		60%	3148.0	3141.0	6.5	0.21%	
		40%	2099.0	2096.0	2.9	0.14%	
Stony Brook	**Z27094**	**100%**	675.0	673.0	2.3	0.34%	Short Line; No SS's
		80%	535.0	533.0	1.5	0.28%	No cap
		60%	397.0	397.0	0.8	0.21%	
		40%	264.0	263.0	0.4	0.14%	
Summit	**Z6451**	**100%**	2260.0	2232.0	27.7	1.22%	High C-Ph;
		80%	1792.0	1774.0	17.7	0.99%	
		60%	1331.0	1322.0	10.0	0.75%	
		40%	884.0	880.0	4.4	0.50%	
Tichigan	**Z33482**	**100%**	6784.1	6771.3	12.7	0.19%	Mainly Waterford T5 & T6.
		80%	5429.4	5421.4	8.0	0.15%	1 switched cap bank - assumed in for heavy analysis
		60%	4073.5	4069.3	4.4	0.11%	
		40%	2713.9	2711.5	2.4	0.09%	
Burlington	**Z1154**	**100%**	8109.9	7710.2	399.8	4.93%	No Distribution Substations on this line.
		80%	6481.0	6233.4	247.5	3.82%	
		60%	4866.0	4724.5	141.2	2.90%	
		40%	3280.0	3207.8	72.9	2.22%	
Moorland	**Z22794**	**100%**	15174.0	15038.3	135.6	0.89%	No Distribution Substations on this line.
		80%	12036.0	11949.0	86.8	0.72%	
		60%	8950.0	8901.0	48.8	0.55%	
		40%	6217.0	6194.0	23.5	0.38%	

25kV FEEDER LOSS CALCULATION RESULTS

System Peak Date = 8/21/03 @ 1500 Hrs.

Substation	Feeder	% of Distr. Load at time of Sys. Pk (kW)	(1) Metered Power Flow (kW) (Incl. Line Losses)	(2) System Load (kW)	(3) Line Loss (kW)	(3)/(1) % Loss	Comments/Notes
Mequon	**Z3965**	**100%**	9180.0	8922.0	258.1	2.81%	No Distribution Substations on this line.
		80%	7298.3	7133.2	165.2	2.26%	
		60%	5439.3	5346.4	92.9	1.71%	
		40%	3603.1	3561.8	41.3	1.15%	
CONCORD	**Z9075**	**100%**	9578.0	9442.6	135.4	1.41%	No Distribution Substations on this line.
		80%	7601.5	7514.9	86.6	1.14%	
		60%	5644.6	5606.8	48.7	0.86%	
		40%	3777.4	3755.8	21.7	0.57%	
Range Line	**Z61483**	**100%**	11541.0	11375.0	166.2	1.44%	Feeds Bradley T7 and T9
		80%	9158.0	9052.0	106.3	1.16%	
		60%	6813.0	6753.0	59.8	0.88%	
		40%	4504.0	4478.0	26.6	0.59%	
Whitewater	**Z4474**	**100%**	7892.0	7789.4	102.7	1.30%	No Distribution Substations on this line; No Caps.
		80%	6260.7	6195.0	65.7	1.05%	
		60%	4656.0	4619.0	37.0	0.79%	
		40%	3077.7	3061.3	16.4	0.53%	
Whitewater	**Z4481**	**100%**	6146.2	6094.6	51.6	0.84%	Ind. Loads; No SS.
		80%	4872.1	4839.1	33.0	0.68%	UWW & WasteWater = spot loads;
		60%	3620.6	3602.0	18.6	0.51%	
		40%	2415.5	2407.3	8.3	0.34%	
Sugar Creek	**Z6572**	**100%**	2858.0	2843.4	14.6	0.51%	Lafayette T6.
		80%	2276.6	2267.2	9.4	0.41%	
		60%	1700.1	1694.8	5.3	0.31%	
		40%	1128.5	1126.2	2.3	0.20%	
Fredonia	**Z40591**	**100%**	10386.0	9971.0	414.7	3.99%	Feeds Belgium and Knellsville SS
		80%	8311.0	8048.0	263.0	3.16%	Distribution load
		60%	6238.0	6089.0	148.7	2.38%	2 switched cap banks
		40%	4189.0	4117.0	71.8	1.71%	
68TH Street	**Z73584**	**100%**	14337.0	14116.0	220.9	1.54%	Feeds Brown Deer T7
		80%	11372.0	11231.0	141.4	1.24%	
		60%	8456.0	8377.0	79.5	0.94%	
		40%	5589.0	5554.0	35.3	0.63%	
96th Street	**Z4571**	**100%**	7791.0	7704.0	86.0	1.10%	Feeds 72nd Street T7 and distr. Load. No caps.
		80%	6243.0	6187.0	55.9	0.90%	
		60%	4638.0	4607.0	31.4	0.68%	
		40%	3094.0	3080.0	14.0	0.45%	

25kV FEEDER LOSS CALCULATION RESULTS

System Peak Date = 8/21/03 @ 1500 Hrs.

Substation	Feeder	% of Distr. Load at time of Sys. Pk (kW)	(1) Metered Power Flow (kW) (Incl. Line Losses)	(2) System Load (kW)	(3) Line Loss (kW)	(3)/(1) % Loss	Comments/Notes
Allerton	**Z54792**	**100%**	12010.0	11809.7	200.4	1.67%	College SS T5 & Mixed distr. Loads.
		80%	9537.2	9409.0	128.2	1.34%	
		60%	7099.7	7027.6	72.1	1.02%	
		40%	4697.6	4665.6	32.0	0.68%	
Allerton	**Z54797**	**100%**	13065.9	12952.0	113.9	0.87%	Greendale T6, Edgerton T6, Mt Carmel, only.
		80%	10357.2	10284.3	72.9	0.70%	Lge conductors. Mainly UG.
		60%	7696.6	7655.7	41.0	0.53%	
		40%	5083.9	5065.7	18.2	0.36%	
SUSSEX	**Z5492**	**100%**	17666.0	17049.9	616.1	3.49%	Feeds Richfield SS
		80%	14202.3	13808.6	393.8	2.77%	
		60%	10599.9	10378.5	221.4	2.09%	
		40%	7101.0	7002.7	98.3	1.38%	
PARIS	**Z8993**	**100%**	10934.1	10698.3	235.9	2.16%	No Distribution Substations on this line.
		80%	8736.3	8585.7	150.6	1.72%	
		60%	6545.7	6459.4	86.2	1.32%	
		40%	4311.9	4270.0	41.8	0.97%	
ST. RITA	**Z8565**	**100%**	4076.0	4016.9	59.1	1.45%	No Distribution Substations on this line.
		80%	3273.3	3232.6	40.7	1.24%	1 switched cap bank
		60%	2442.2	2414.3	27.9	1.14%	
		40%	1611.5	1599.9	11.6	0.72%	
MUKWONAGO	**Z77376**	**100%**	9114.0	8788.0	326.0	3.58%	Feeds Eagle SS
		80%	7315.1	7106.5	208.5	2.85%	
		60%	5503.8	5386.5	117.3	2.13%	
		40%	3680.5	3628.3	52.1	1.42%	
Auburn	**Z1841**	**100%**	7401.0	6982.0	419.1	5.66%	Feeds Eden SS, 1 switched cap bank
		80%	5907.6	5640.9	266.7	4.51%	
		60%	4402.6	4251.0	151.6	3.44%	
		40%	2903.6	2827.3	76.2	2.63%	
CONCORD	**Z9083**	**100%**	22457.0	21762.1	695.0	3.09%	Feeds Wakoka SS
		80%	17852.2	17407.4	444.8	2.49%	
		60%	13303.5	13053.3	250.2	1.88%	
		40%	8811.5	8700.3	111.2	1.26%	
BARTON	**Z9782**	**100%**	8820.0	8766.9	53.1	0.60%	No Distribution Substations on this line.
		80%	6989.0	6955.0	34.0	0.49%	
		60%	5191.8	5172.7	19.1	0.37%	
		40%	3428.1	3419.6	8.5	0.25%	

25kV FEEDER LOSS CALCULATION RESULTS

System Peak Date = 8/21/03 @ 1500 Hrs.

Substation	Feeder	% of Distr. Load at time of Sys. Pk (kW)	(1) Metered Power Flow (kW) (Incl. Line Losses)	(2) System Load (kW)	(3) Line Loss (kW)	(3)/(1) % Loss	Comments/Notes
SOMERS	Z35782	100%	11909.0	11724.3	184.7	1.55%	No Distribution Substations on this line. 3 switched cap
		80%	9569.0	9448.9	120.0	1.25%	banks
		60%	7141.2	7066.8	74.3	1.04%	
		40%	4701.8	4663.8	38.1	0.81%	
RACINE	Z1682	100%	17893.0	17642.9	250.0	1.40%	Feeds Shirley T6
		80%	14192.2	14032.2	160.0	1.13%	
		60%	10552.8	10462.8	90.0	0.85%	
		40%	6985.2	6945.1	40.1	0.57%	
GERMANTOWN	Z2694	100%	18819.0	18457.1	361.9	1.92%	Feeds Water SS T6. 1 switched cap bank. 1 fixed
		80%	15031.7	14806.3	225.4	1.50%	cap bank.
		60%	11214.9	11092.7	122.2	1.09%	
		40%	7432.1	7375.7	56.4	0.76%	

		Total Sum of Metered (kW)	Total Sum of Line Loss (kW)	Ave. % Loss
30 Feeder Totals:	100%	301979.2	6135.7	2.03%
	80%	240489.5	3912.6	1.63%
	60%	179246.3	2213.6	1.23%
	40%	119291.4	1020.7	0.86%

	% Pk Load	Max.	Min.
30 Feeder Range:	100%	5.66%	0.19%
	80%	4.51%	0.15%
	60%	3.44%	0.11%
	40%	2.63%	0.09%

138/13.2 kV H-LINES LOSS CALCULATION RESULTS

System Peak Date = 8/21/03 @ 1500 Hrs.

Substation	Feeder	% of Distr. Load at time of Sys. Pk (kW)	(1) Metered Power Flow (kW) (Incl. Line Losses)	(2) System Load (kW)	(3) Line Loss (kW)	(3)/(1) % Loss	Comments/Notes
28TH ST	H69145	100%	1983.0	1974.3	8.8	0.44%	
		80%	1587.0	1581.5	5.6	0.35%	
		60%	1184.9	1181.7	3.2	0.27%	
		40%	794.2	792.7	1.4	0.18%	
28TH ST	H69149	100%	2181.0	2177.1	3.9	0.18%	
		80%	1745.0	1742.5	2.5	0.14%	
		60%	1302.4	1301.0	1.4	0.11%	
		40%	872.7	872.1	0.6	0.07%	
28TH ST	H69168	100%	4905.0	4888.7	16.4	0.33%	
		80%	3924.9	3914.4	10.5	0.27%	
		60%	2929.6	2923.7	5.9	0.20%	
		40%	1963.3	1960.6	2.7	0.14%	
EVERETT	H16593	100%	4959.0	4939.2	19.8	0.40%	
		80%	3967.7	3955.0	12.7	0.32%	
		60%	2976.2	2969.0	7.1	0.24%	
		40%	1984.4	1981.2	3.2	0.16%	
LINCOLN	H3253	100%	3273.0	3260.0	13.0	0.40%	
		80%	2618.7	2610.4	8.3	0.32%	
		60%	1964.2	1959.5	4.7	0.24%	
		40%	1309.6	1307.5	2.1	0.16%	
NORWICH	H51261	100%	2641.0	2595.9	45.1	1.71%	
		80%	2104.1	2075.2	28.9	1.37%	
		60%	1566.8	1550.6	16.3	1.04%	
		40%	1065.2	1057.6	7.6	0.71%	
NORWICH	H51262	100%	3772.0	3734.5	37.5	0.99%	
		80%	3000.0	2976.0	24.0	0.80%	
		60%	2230.2	2216.7	13.5	0.61%	
		40%	1513.7	1507.3	6.3	0.42%	
NORWICH	H51265	100%	779.0	775.0	4.1	0.53%	
		80%	619.3	616.6	2.6	0.42%	
		60%	460.0	458.6	1.5	0.32%	
		40%	312.1	311.4	0.7	0.22%	
NORWICH	H51266	100%	3490.0	3458.9	31.1	0.89%	
		80%	2776.8	2756.9	19.9	0.72%	
		60%	2065.0	2053.9	11.2	0.54%	
		40%	1402.2	1397.0	5.2	0.37%	

APPENDIX D2

Substation	Feeder	% of Distr. Load at time of Sys. Pk (kW)	(1) Metered Power Flow (kW) (Incl. Line Losses)	(2) System Load (kW)	(3) Line Loss (kW)	(3)/(1) % Loss	Comments/Notes
			Total Sum of Metered (kW)		**Total Sum of Line Loss (kW)**	**Ave. % Loss**	
9 Feeder Totals:		**100%**	**27983.0**		**179.7**	**0.64%**	
		80%	**22343.5**		**115.0**	**0.51%**	
		60%	**16679.3**		**64.7**	**0.39%**	
		40%	**11217.3**		**29.8**	**0.27%**	
				% Pk Load	**Max.**	**Min.**	
			Feeder Range:	**100%**	**1.71%**	**0.18%**	
				80%	**1.37%**	**0.14%**	
				60%	**1.04%**	**0.11%**	
				40%	**0.71%**	**0.07%**	

138/13.2 kV FEEDER LOSS CALCULATION RESULTS

System Peak Date = 8/21/03 @ 1500 Hrs.

Substation	Feeder	% of Distr. Load at time of Sys. Pk (kW)	(1) Metered Power Flow (kW) (Incl. Line Losses)	(2) System Load (kW)	(3) Line Loss (kW)	(3)/(1) % Loss	Comments/Notes
CENTER	W46254	100%	3759.0	3729.0	30.0	0.80%	
		80%	3013.0	2994.3	18.6	0.62%	
		60%	2309.9	2299.8	10.1	0.44%	
		40%	1509.4	1504.8	4.5	0.30%	
CENTER	W46263	100%	8195.0	8059.9	135.2	1.65%	
		80%	6568.7	6483.3	85.4	1.30%	
		60%	4936.6	4889.0	47.6	0.97%	
		40%	3288.0	3266.4	21.7	0.66%	
GLENDALE	W22351	100%	8226.0	8173.0	52.9	0.64%	
		80%	6521.2	6486.7	34.5	0.53%	
		60%	4847.3	4826.4	20.9	0.43%	
		40%	3292.4	3284.4	8.0	0.24%	
GLENDALE	W22361	100%	7770.0	7615.3	154.5	1.99%	
		80%	6200.8	6104.0	96.9	1.56%	
		60%	4616.8	4563.7	53.1	1.15%	
		40%	3121.2	3097.7	23.5	0.75%	
KANSAS	W7253	100%	8091.0	7907.2	183.8	2.27%	
		80%	6463.3	6346.0	117.3	1.81%	
		60%	4818.0	4750.4	67.6	1.40%	
		40%	3248.4	3218.0	30.4	0.94%	
KANSAS	W7263	100%	6884.0	6779.3	104.9	1.52%	
		80%	5486.0	5419.0	67.0	1.22%	
		60%	4078.3	4040.6	37.7	0.92%	
		40%	2762.3	2745.0	17.2	0.62%	
RAMSEY	W23151	100%	6637.0	6575.1	61.9	0.93%	
		80%	5320.0	5280.6	39.4	0.74%	
		60%	3959.0	3936.0	23.0	0.58%	
		40%	2660.6	2651.4	9.2	0.35%	
RAMSEY	W23162	100%	8157.0	7964.9	192.1	2.36%	
		80%	6544.0	6421.7	122.3	1.87%	
		60%	4923.8	4853.7	70.1	1.42%	
		40%	3274.5	3243.6	30.9	0.94%	

138/13.2 kV FEEDER LOSS CALCULATION RESULTS

System Peak Date = 8/21/03 @ 1500 Hrs.

Substation	Feeder	% of Distr. Load at time of Sys. Pk (kW)	(1) Metered Power Flow (kW) (Incl. Line Losses)	(2) System Load (kW)	(3) Line Loss (kW)	(3)/(1) % Loss	Comments/Notes
SHOREWOOD	W62864	100%	7086.0	7005.5	80.6	1.14%	
		80%	5619.6	5569.0	50.6	0.90%	
		60%	4178.2	4150.4	27.8	0.67%	
		40%	2841.8	2828.1	13.7	0.48%	
SHOREWOOD	W62873	100%	5323.0	5300.0	23.0	0.43%	
		80%	4218.1	4203.8	14.3	0.34%	
		60%	3133.8	3126.0	7.8	0.25%	
		40%	2131.6	2127.7	3.9	0.19%	
W. JUNCTION	W45553	100%	7774.0	7732.4	41.6	0.54%	
		80%	6195.1	6168.9	26.2	0.42%	
		60%	4605.5	4590.9	14.6	0.32%	
		40%	3114.9	3108.1	6.8	0.22%	
W. JUNCTION	W45561	100%	8306.9	8229.3	77.6	0.93%	
		80%	6656.8	6605.6	51.2	0.77%	
		60%	4952.3	4921.1	31.2	0.63%	
		40%	3326.4	3314.8	11.6	0.35%	
FIEBRANTZ	W11662	100%	6477.0	6336.7	140.3	2.17%	
		80%	5140.3	5051.2	89.1	1.73%	
		60%	3824.4	3774.8	49.7	1.30%	
		40%	2600.8	2578.4	22.3	0.86%	
FIEBRANTZ	W11673	100%	5590.0	5538.5	51.5	0.92%	
		80%	4435.0	4403.4	31.6	0.71%	
		60%	3299.0	3282.2	16.9	0.51%	
		40%	2243.3	2234.6	8.7	0.39%	

		Total Sum of Metered (kW)		Total Sum of Line Loss (kW)	Ave. % Loss
14 Feeder Totals:	100%	98275.9		1330.0	1.35%
	80%	78381.9		844.5	1.08%
	60%	58482.9		477.9	0.82%
	40%	39415.5		212.5	0.54%
			% Pk Load	Max.	Min.
		Feeder Range:	100%	2.36%	0.43%
			80%	1.87%	0.34%
			60%	1.42%	0.25%
			40%	0.94%	0.19%

138/12.47 kV FEEDER LOSS CALCULATION RESULTS

System Peak Date = 8/21/03 @ 1500 Hrs.

Substation	Feeder	% of Distr. Load at time of Sys. Pk (kW)	(1) Metered Power Flow (kW) (Incl. Line Losses)	(2) System Load (kW)	(3) Line Loss (kW)	(3)/(1) % Loss	Comments/Notes
APPLE HILLS 12.47	46861	100%	2151.0	2127.4	23.6	1.10%	
		80%	1705.1	1690.2	14.9	0.87%	
		60%	1267.1	1258.9	8.3	0.66%	
		40%	878.9	874.8	4.1	0.46%	
APPLE HILLS 12.47	46865	100%	4567.0	4466.3	100.7	2.20%	
		80%	3630.7	3567.1	63.6	1.75%	
		60%	2706.8	2670.8	36.0	1.33%	
		40%	1836.7	1820.1	16.6	0.90%	
CASALOMA 12.47	37162	100%	2800.0	2765.1	34.9	1.25%	
		80%	2237.6	2215.5	22.1	0.99%	
		60%	1665.1	1652.5	12.6	0.76%	
		40%	1121.7	1113.5	5.2	0.46%	
CASALOMA 12.47	37164	100%	6106.0	5988.3	117.7	1.93%	
		80%	4879.7	4805.0	74.7	1.53%	
		60%	3630.7	3589.2	41.5	1.14%	
		40%	2453.3	2434.3	19.0	0.78%	
CASALOMA 12.47	37171	100%	7072.0	6848.9	223.1	3.15%	
		80%	5627.9	5488.9	139.0	2.47%	
		60%	4199.4	4123.8	75.6	1.80%	
		40%	2792.8	1380.0	41.3	1.48%	
CASALOMA 12.47	37172	100%	5274.0	5223.0	51.0	0.97%	
		80%	4181.8	4149.5	32.3	0.77%	
		60%	3108.7	3090.6	18.2	0.58%	
		40%	2111.8	2103.7	8.1	0.38%	
LAKE PARK 12.47	72851	100%	5425.0	5329.9	95.2	1.75%	
		80%	4303.8	4243.9	59.9	1.39%	
		60%	3201.5	3168.0	33.5	1.04%	
		40%	2174.5	2159.1	15.4	0.71%	
LAKE PARK 12.47	72854	100%	4636.0	4565.9	70.1	1.51%	
		80%	3680.3	3635.9	44.4	1.21%	
		60%	2739.4	2714.3	25.0	0.91%	
		40%	1860.0	1848.8	11.2	0.60%	

138/12.47 kV FEEDER LOSS CALCULATION RESULTS

System Peak Date = 8/21/03 @ 1500 Hrs.

Substation	Feeder	% of Distr. Load at time of Sys. Pk (kW)	(1) Metered Power Flow (kW) (Incl. Line Losses)	(2) System Load (kW)	(3) Line Loss (kW)	(3)/(1) % Loss	Comments/Notes
LAKE PARK 12.47	72861	100%	4326.0	4209.5	116.5	2.69%	
		80%	3459.0	3385.5	73.4	2.12%	
		60%	2580.4	2539.5	40.9	1.58%	
		40%	1754.9	1735.5	19.4	1.10%	
LAKE PARK 12.47	72863	100%	1546.0	1539.0	7.1	0.46%	
		80%	1232.1	1227.4	4.7	0.38%	
		60%	916.2	913.2	3.0	0.33%	
		40%	619.2	618.1	1.1	0.18%	

		Total Sum of Metered (kW)		Total Sum of Line Loss (kW)	Ave. % Loss
10 Feeder Totals:	100%	43903.0		840.0	1.91%
	80%	34938.0		529.0	1.51%
	60%	26015.3		294.5	1.13%
	40%	17603.8		141.3	0.80%

	% Pk Load	Max.	Min.
Feeder Range:	100%	3.15%	0.46%
	80%	2.47%	0.38%
	60%	1.80%	0.33%
	40%	1.48%	0.18%

12.47 kV AND 4.16 kV FEEDER LOSS CALCULATION RESULTS

System Peak Date = 8/21/03 @ 1500 Hrs.

Substation	Feeder	% of Distr. Load at time of Sys. Pk (kW)	(1) Metered Power Flow (kW) (Incl. Line Losses)	(2) System Load (kW)	(3) Line Loss (kW)	(3)/(1) % Loss	Comments/Notes
BONDUEL	FBON1	100%	2906.0	2835.0	71.0	2.44%	3 switched cap banks
		80%	2329.1	2283.4	45.5	1.96%	
		60%	1734.0	1707.4	26.7	1.54%	
		40%	1151.0	1137.8	13.2	1.14%	
RICHMOND STREET	FRCH4	100%	6173.0	6110.3	62.7	1.02%	2 switched cap banks
		80%	4922.5	4882.5	39.9	0.81%	
		60%	3680.6	3657.6	23.0	0.62%	
		40%	2419.4	2407.8	11.5	0.48%	
CENTER VALLEY	FCVL2	100%	1254.0	1244.7	9.4	0.75%	1 switched cap bank
		80%	1003.7	997.7	6.0	0.60%	
		60%	746.1	742.6	3.5	0.47%	
		40%	497.0	495.4	1.6	0.32%	
BUTTE DES MORTS	FBDM6	100%	6530.1	6373.3	156.8	2.40%	2 switched cap banks
		80%	5192.9	5095.6	97.2	1.87%	
		60%	3872.1	3819.3	52.7	1.36%	
		40%	2548.1	2518.0	30.1	1.18%	
CITY LIMITS 12.47	FCLS4	100%	6053.0	5972.7	80.4	1.33%	1 switched cap bank
		80%	4803.1	4752.2	50.8	1.06%	
		60%	3572.9	3544.8	28.1	0.79%	
		40%	2357.5	2343.8	13.7	0.58%	
ELLINGTON 12.47	FELL3	100%	945.0	924.9	20.1	2.13%	No capacitors
		80%	756.6	743.7	12.9	1.70%	
		60%	562.3	555.1	7.2	1.29%	
		40%	375.2	372.0	3.2	0.86%	
FREEDOM	FFRD2	100%	4801.0	4679.1	121.9	2.54%	1 switched cap bank
		80%	3847.4	3769.1	78.3	2.03%	
		60%	2890.8	2846.3	44.5	1.54%	
		40%	1926.8	1907.3	19.5	1.01%	
JULIUS	FJUL2	100%	3575.0	3495.7	79.3	2.22%	1 switched cap bank
		80%	2839.4	2789.0	50.3	1.77%	
		60%	2114.2	2086.1	28.2	1.33%	
		40%	1405.1	1391.5	13.6	0.97%	

12.47 kV AND 4.16 kV FEEDER LOSS CALCULATION RESULTS

System Peak Date = 8/21/03 @ 1500 Hrs.

Substation	Feeder	% of Distr. Load at time of Sys. Pk (kW)	(1) Metered Power Flow (kW) (Incl. Line Losses)	(2) System Load (kW)	(3) Line Loss (kW)	(3)/(1) % Loss	Comments/Notes
ONEIDA	FOND3	100%	3466.0	3381.2	84.7	2.44%	1 switched cap bank
		80%	2750.1	2696.7	53.4	1.94%	
		60%	2046.0	2016.3	29.7	1.45%	
		40%	1349.3	1334.2	15.1	1.12%	
WAUKECHON	FWAK1	100%	1446.0	1437.2	8.9	0.61%	1 switched cap bank
		80%	1157.5	1151.8	5.7	0.49%	
		60%	860.1	856.7	3.3	0.39%	
		40%	572.6	570.9	1.7	0.30%	
METRO	EMET6	100%	1461.0	1457.2	3.8	0.26%	2 switched cap banks
		80%	1169.3	1166.6	2.7	0.23%	
		60%	877.4	875.5	1.8	0.20%	
		40%	584.0	583.5	0.6	0.10%	
WINNEBAGO	EWNB1	100%	1598.0	1579.9	18.1	1.13%	2 switched cap banks
		80%	1274.5	1263.2	11.4	0.89%	
		60%	953.1	946.8	6.3	0.66%	
		40%	627.6	624.2	3.4	0.54%	
BLACK CREEK	EBLA1	100%	695.0	684.6	10.1	1.46%	1 switched cap bank
		80%	556.0	549.4	6.6	1.19%	
		60%	414.0	410.0	4.0	0.97%	
		40%	275.0	273.3	1.8	0.64%	
FAIRVIEW	EFRV2	100%	768.0	763.2	4.8	0.63%	1 switched cap bank
		80%	612.3	609.1	3.2	0.52%	
		60%	457.8	455.7	2.0	0.45%	
		40%	300.5	299.4	0.9	0.31%	
WASHINGTON ST	EWSH3	100%	856.0	851.5	4.5	0.52%	1 switched cap bank
		80%	685.4	682.6	2.9	0.42%	
		60%	509.4	507.8	1.6	0.32%	
		40%	339.5	338.7	0.8	0.23%	
COUNTY HOSPITAL	FCOH7	100%	4721.0	4670.5	50.5	1.07%	4 switched cap banks
		80%	3765.2	3732.9	32.3	0.86%	
		60%	2816.3	2797.0	19.3	0.69%	
		40%	1849.7	1839.1	10.5	0.57%	
GILLETT	FGIL61	100%	2410.0	2392.2	17.8	0.74%	1 switched cap bank
		80%	1919.3	1908.1	11.3	0.59%	
		60%	1433.1	1426.7	6.3	0.44%	
		40%	945.8	942.7	3.1	0.33%	
FREMONT	FFRT2	100%	1721.0	1695.2	25.9	1.50%	2 switched cap banks
		80%	1369.9	1351.7	18.2	1.33%	
		60%	1024.8	1012.1	12.7	1.24%	
		40%	675.0	670.6	4.5	0.66%	

12.47 kV AND 4.16 kV FEEDER LOSS CALCULATION RESULTS

System Peak Date = 8/21/03 @ 1500 Hrs.

Substation	Feeder	% of Distr. Load at time of Sys. Pk (kW)	(1) Metered Power Flow (kW) (Incl. Line Losses)	(2) System Load (kW)	(3) Line Loss (kW)	(3)/(1) % Loss	Comments/Notes
FRENCH	FFRR3	100%	3461.0	3435.2	25.8	0.75%	2 switched cap banks
		80%	2758.7	2742.1	16.6	0.60%	
		60%	2072.2	2062.5	9.7	0.47%	
		40%	1382.7	1377.9	4.8	0.34%	
ZACHOW	FZCH2	100%	1386.0	1355.0	31.0	2.24%	1 fixed capacitor
		80%	1104.7	1085.0	19.7	1.79%	
		60%	825.6	814.5	11.2	1.35%	
		40%	551.5	546.3	5.3	0.96%	

		Total Sum of Metered (kW)		Total Sum of Line Loss (kW)	Ave. % Loss
20 Feeder Totals:	100%	56226.3		887.5	1.58%
	80%	44817.5		564.9	1.26%
	60%	33462.9		321.9	0.96%
	40%	22133.3		158.8	0.72%
			% Pk Load	Max.	Min.
		Feeder Range:	100%	2.54%	0.26%
			80%	2.03%	0.23%
			60%	1.54%	0.20%
			40%	1.18%	0.10%

8.32 kV FEEDER LOSS CALCULATION RESULTS

System Peak Date = 8/21/03 @ 1500 Hrs.

Substation	Feeder	% of Distr. Load at time of Sys. Pk (kW)	(1) Metered Power Flow (kW) (Incl. Line Losses)	(2) System Load (kW)	(3) Line Loss (kW)	(3)/(1) % Loss	Comments/Notes
BURLEIGH	X8663	100%	1452.0	1443.0	8.8	0.60%	No capacitors
		80%	1151.0	1145.0	5.6	0.49%	
		60%	855.0	852.0	3.2	0.37%	
		40%	564.6	563.0	1.4	0.25%	
MEDFORD	X7962	100%	3251.1	3217.0	33.9	1.04%	2 fixed cap banks
		80%	2579.0	2556.0	22.6	0.88%	
		60%	1928.3	1914.0	14.3	0.74%	
		40%	1308.5	1299.0	9.3	0.71%	
SIX MILE	X12751	100%	2515.0	2486.0	29.0	1.15%	1 switched cap bank
		80%	1994.0	1975.0	18.6	0.93%	
		60%	1482.0	1472.0	10.5	0.71%	
		40%	977.3	973.0	4.8	0.49%	
UNION	X20461	100%	3494.0	3452.0	41.7	1.19%	2 switched cap banks
		80%	2772.0	2745.0	26.5	0.96%	
		60%	2062.0	2047.0	15.1	0.73%	
		40%	1357.8	1350.0	7.6	0.56%	
WEST BEND	X74161	100%	2914.0	2900.0	15.1	0.52%	2 switched cap banks
		80%	2310.0	2300.0	9.5	0.41%	
		60%	1716.0	1711.0	5.5	0.32%	
		40%	1132.0	1129.0	3.1	0.27%	
MT. CALVARY	X18251	100%	1353.0	1344.0	8.8	0.65%	1 switched cap bank
		80%	1072.2	1067.0	5.6	0.53%	
		60%	796.6	794.0	3.2	0.40%	
		40%	525.2	524.0	1.6	0.30%	
BURLINGTON	X19762	100%	2574.0	2553.0	20.1	0.78%	No capacitors
		80%	2061.0	2048.0	12.8	0.62%	
		60%	1547.0	1540.0	7.2	0.47%	
		40%	1032.0	1029.0	3.2	0.31%	
WIND LAKE	X10962	100%	3319.0	3239.0	80.3	2.42%	2 switched cap banks
		80%	2638.5	2588.0	50.8	1.92%	
		60%	1966.7	1938.0	28.5	1.45%	
		40%	1303.7	1289.0	14.5	1.11%	
GRAFTON	X16452	100%	2826.0	2781.0	45.0	1.59%	No capacitors
		80%	2241.2	2212.0	28.8	1.28%	
		60%	1666.2	1650.0	16.2	0.97%	
		40%	1101.1	1093.9	7.2	0.65%	

8.32 kV FEEDER LOSS CALCULATION RESULTS

System Peak Date = 8/21/03 @ 1500 Hrs.

Substation	Feeder	% of Distr. Load at time of Sys. Pk (kW)	(1) Metered Power Flow (kW) (Incl. Line Losses)	(2) System Load (kW)	(3) Line Loss (kW)	(3)/(1) % Loss	Comments/Notes
CHENEQUA	X72462	100%	4006.0	3863.5	142.5	3.56%	1 switched cap bank
		80%	3203.0	3113.1	89.9	2.81%	
		60%	2387.2	2336.6	50.6	2.12%	
		40%	1582.2	1558.4	23.8	1.50%	
OOSTBURG	X18961	100%	1675.0	1635.5	39.5	2.36%	1 switched cap bank
		80%	1329.3	1304.5	24.8	1.86%	
		60%	994.0	980.5	13.6	1.37%	
		40%	658.7	651.6	7.1	1.07%	
HOLLOWAY	X14751	100%	1414.9	1391.0	23.9	1.69%	1 switched cap bank
		80%	1135.7	1119.6	16.1	1.42%	
		60%	855.1	844.8	10.4	1.21%	
		40%	564.9	561.0	4.0	0.71%	
COLLEGE	X18062	100%	5001.0	4958.5	42.4	0.85%	No capacitors
		80%	3965.9	3939.0	27.1	0.68%	
		60%	2948.4	2933.0	15.3	0.52%	
		40%	1948.3	1941.5	6.8	0.35%	
GEBHARDT	X27971	100%	3137.0	3104.9	32.1	1.02%	2 switched cap banks
		80%	2513.7	2501.4	20.4	0.81%	
		60%	1869.8	1858.2	11.5	0.62%	
		40%	1242.5	1236.9	5.6	0.45%	
DOUGLAS	X22851	100%	5812.1	5701.0	111.1	1.91%	2 switched cap banks
		80%	4619.4	4549.4	69.9	1.51%	
		60%	3442.0	3403.5	38.5	1.12%	
		40%	2667.6	2248.0	19.6	0.73%	
EMMETT	X10461	100%	2630.0	2545.2	84.8	3.22%	1 switched cap bank
		80%	2094.9	2042.0	52.9	2.53%	
		60%	1580.1	1551.4	28.8	1.82%	
		40%	1041.0	1025.7	15.3	1.47%	
FT. ATKINSON	X19162	100%	4708.0	4566.6	141.4	3.00%	2 switched cap banks
		80%	3745.7	3657.6	88.0	2.35%	
		60%	2822.3	2774.3	47.9	1.70%	
		40%	1858.1	1831.5	26.5	1.43%	
MARCY	X32362	100%	3745.0	3654.5	90.4	2.41%	3 switched cap banks
		80%	2983.3	2927.2	56.1	1.88%	
		60%	2229.1	2198.0	31.1	1.40%	
		40%	1458.2	1439.6	18.6	1.28%	

8.32 kV FEEDER LOSS CALCULATION RESULTS

System Peak Date = 8/21/03 @ 1500 Hrs.

Substation	Feeder	% of Distr. Load at time of Sys. Pk (kW)	(1) Metered Power Flow (kW) (Incl. Line Losses)	(2) System Load (kW)	(3) Line Loss (kW)	(3)/(1) % Loss	Comments/Notes
OKAUCHEE	X12652	100%	1526.0	1489.8	36.3	2.38%	1 switched cap bank
		80%	1213.2	1190.1	23.1	1.91%	
		60%	904.5	891.2	13.3	1.47%	
		40%	592.0	585.4	6.5	1.11%	
GREENFIELD	X9262	100%	4502.0	4371.5	130.5	2.90%	2 switched cap banks
		80%	3580.8	3499.2	81.6	2.28%	
		60%	2670.7	2625.8	44.9	1.68%	
		40%	1773.0	1748.6	24.4	1.37%	
UNION GROVE	X35461	100%	3474.0	3406.9	67.1	1.93%	1 switched cap bank
		80%	2758.6	2716.0	42.6	1.54%	
		60%	2053.6	2029.8	23.7	1.15%	
		40%	1367.5	1356.0	11.4	0.83%	
PLAINFIELD	X20162	100%	3399.9	3355.6	44.3	1.30%	1 switched cap bank
		80%	2724.8	2697.0	27.8	1.02%	
		60%	2047.4	2032.1	15.3	0.75%	
		40%	1363.7	1355.8	7.9	0.58%	
MERTON	X35961	100%	1919.0	1885.2	33.8	1.76%	1 switched cap bank
		80%	1521.9	1500.3	21.5	1.41%	
		60%	1131.6	1119.4	12.2	1.07%	
		40%	745.6	739.6	5.9	0.79%	
CALUMET	X18762	100%	3739.0	3668.7	70.4	1.88%	1 switched cap bank
		80%	2969.1	2924.5	44.5	1.50%	
		60%	2210.3	2185.6	24.6	1.11%	
		40%	1459.8	1447.9	11.9	0.82%	
65TH STREET	X16252	100%	4209.0	4113.9	95.1	2.26%	2 switched cap banks
		80%	3375.0	3314.7	60.3	1.79%	
		60%	2537.8	2503.7	34.1	1.34%	
		40%	1684.5	1667.5	17.0	1.01%	
NORWAUK	X15251	100%	4457.0	4341.1	115.9	2.60%	1 switched cap bank
		80%	3546.4	3473.6	72.8	2.05%	
		60%	2645.5	2605.7	39.8	1.50%	
		40%	1746.1	1725.9	20.3	1.16%	
NORTHRIDGE	X20853	100%	4991.0	4925.0	66.0	1.32%	2 switched cap banks
		80%	3997.5	3955.7	41.8	1.05%	
		60%	3002.0	2978.7	23.3	0.78%	
		40%	1997.8	1986.3	11.5	0.58%	

8.32 kV FEEDER LOSS CALCULATION RESULTS

System Peak Date = 8/21/03 @ 1500 Hrs.

Substation	Feeder	% of Distr. Load at time of Sys. Pk (kW)	(1) Metered Power Flow (kW) (Incl. Line Losses)	(2) System Load (kW)	(3) Line Loss (kW)	(3)/(1) % Loss	Comments/Notes
JACKSON	X17952	100%	3367.0	3332.1	35.0	1.04%	1 switched cap bank
		80%	2668.5	2646.0	22.4	0.84%	
		60%	1982.8	1970.0	12.8	0.65%	
		40%	1308.2	1302.4	5.8	0.45%	
RAWSON	X19362	100%	3102.0	3076.4	25.6	0.83%	1 switched cap bank
		80%	2459.7	2443.5	16.3	0.66%	
		60%	1828.5	1819.4	9.1	0.50%	
		40%	1217.9	1213.5	4.4	0.36%	
HACKBARTH	X15751	100%	3181.0	3119.2	61.8	1.94%	1 switched cap bank
		80%	2526.1	2487.3	38.8	1.53%	
		60%	1880.6	1859.4	21.2	1.13%	
		40%	1241.8	1230.9	10.9	0.88%	

		Total Sum of Metered (kW)		Total Sum of Line Loss (kW)	Ave. % Loss
30 Feeder Totals:	**100%**	**97694.1**		**1772.6**	**1.81%**
	80%	**77751.2**		**1119.7**	**1.44%**
	60%	**58043.1**		**625.7**	**1.08%**
	40%	**38821.6**		**317.9**	**0.82%**
			% Pk Load	**Max.**	**Min.**
		Feeder Range:	**100%**	**3.56%**	**0.52%**
			80%	**2.81%**	**0.41%**
			60%	**2.12%**	**0.32%**
			40%	**1.50%**	**0.25%**

3.81 kV FEEDER LOSS CALCULATION RESULTS

APPENDIX D2

System Peak Date = 8/21/03 @ 1500 Hrs.

Substation	Feeder	% of Distr. Load at time of Sys. Pk (kW)	(1) Metered Power Flow (kW) (Incl. Line Losses)	(2) System Load (kW)	(3) Line Loss (kW)	(3)/(1) % Loss	Comments/Notes
ARMOUR	**E4173**	100%	1508.0	1460.2	47.7	3.17%	2 switched cap banks
		80%	1203.7	1173.2	30.5	2.54%	*Transformer metering only*
		60%	901.5	883.6	17.8	1.98%	
		40%	597.3	588.3	8.9	1.49%	
ARMOUR	**E4181**	100%	1410.0	1372.1	37.9	2.69%	No Capacitors
		80%	1119.3	1095.0	24.3	2.17%	*Transformer metering only*
		60%	832.9	819.3	13.6	1.64%	
		40%	550.9	544.9	6.1	1.10%	
ARMOUR	**E4184**	100%	1177.0	1166.7	10.4	0.88%	1 switched cap bank
		80%	933.9	927.3	6.6	0.70%	*Transformer metering only*
		60%	694.7	691.0	3.7	0.53%	
		40%	457.2	455.3	1.9	0.41%	
BRADLEY	**E7653**	100%	1272.0	1221.2	50.8	3.99%	No capacitors
		80%	1019.2	986.7	32.5	3.19%	*Transformer metering only*
		60%	765.7	747.4	18.3	2.39%	
		40%	511.3	503.3	8.1	1.59%	
BRADLEY	**E7671**	100%	684.1	675.9	8.2	1.19%	1 switched cap bank
		80%	542.4	537.1	5.3	0.97%	*Transformer metering only*
		60%	403.3	400.2	3.1	0.77%	
		40%	265.5	264.1	1.4	0.54%	
BRADLEY	**E7673**	100%	961.0	948.6	12.4	1.29%	1 switched cap bank
		80%	761.8	753.9	8.0	1.04%	*Transformer metering only*
		60%	566.2	561.6	4.6	0.81%	
		40%	373.2	371.0	2.1	0.57%	
CAMBRIDGE	**E9663**	100%	1517.0	1446.4	70.7	4.66%	1 switched cap bank
		80%	1210.8	1165.8	45.0	3.72%	*Transformer metering only*
		60%	906.1	881.0	25.1	2.77%	
		40%	605.5	593.9	11.6	1.91%	
CAMBRIDGE	**E9664**	100%	770.0	762.6	7.5	0.97%	1 switched cap bank
		80%	614.1	609.4	4.7	0.77%	*Transformer metering only*
		60%	459.2	456.6	2.7	0.58%	
		40%	304.9	303.5	1.5	0.49%	
CONCORDIA	**E6061**	100%	1127.5	1110.6	16.9	1.50%	1 switched cap bank
		80%	902.6	891.8	10.9	1.20%	*Transformer metering only*
		60%	677.6	671.3	6.3	0.93%	
		40%	451.0	447.9	3.0	0.67%	

3.81 kV FEEDER LOSS CALCULATION RESULTS

APPENDIX D2

System Peak Date = 8/21/03 @ 1500 Hrs.

Substation	Feeder	% of Distr. Load at time of Sys. Pk (kW)	(1) Metered Power Flow (kW) (Incl. Line Losses)	(2) System Load (kW)	(3) Line Loss (kW)	(3)/(1) % Loss	Comments/Notes
CONCORDIA	**E6066**	100%	1045.4	1011.4	34.1	3.26%	1 switched cap bank
		80%	837.9	816.1	21.8	2.60%	*Transformer metering only*
		60%	630.1	617.5	12.6	2.00%	
		40%	418.2	412.0	6.2	1.47%	
OHIO	**E8753**	100%	1371.0	1353.0	18.0	1.32%	1 switched cap bank
		80%	1087.6	1075.9	11.7	1.07%	*Transformer metering only*
		60%	813.1	806.2	6.9	0.85%	
		40%	537.8	534.5	3.2	0.60%	
OHIO	**E8764**	100%	1680.0	1647.0	33.0	1.96%	1 switched cap bank
		80%	1338.6	1317.8	20.8	1.56%	*Transformer metering only*
		60%	1000.1	988.6	11.6	1.16%	
		40%	666.3	660.4	5.9	0.88%	
OHIO	**E8772**	100%	1490.9	1462.1	28.8	1.93%	1 switched cap bank
		80%	1189.5	1171.2	18.3	1.54%	*Transformer metering only*
		60%	889.8	879.5	10.3	1.16%	
		40%	591.7	586.6	5.1	0.86%	
WALNUT	**E1753**	100%	1607.0	1578.8	28.1	1.75%	2 switched capacitors
		80%	1288.2	1269.9	18.3	1.42%	
		60%	968.6	957.6	11.0	1.14%	
		40%	641.8	636.6	5.2	0.80%	
WALNUT	**E1756**	100%	1924.0	1862.5	61.4	3.19%	2 switched cap banks
		80%	1544.3	1503.0	41.2	2.67%	
		60%	1163.2	1137.1	26.1	2.25%	
		40%	767.2	757.0	10.2	1.33%	
WESTOWN	**E7153**	100%	1125.0	1113.1	11.8	1.05%	1 switched cap bank
		80%	900.4	892.8	7.6	0.84%	
		60%	675.8	671.3	4.4	0.66%	
		40%	450.2	447.9	2.3	0.50%	
WESTOWN	**E7155**	100%	1117.0	1108.3	8.7	0.78%	1 switched cap bank
		80%	894.2	888.3	5.9	0.66%	
		60%	671.3	667.4	3.8	0.57%	
		40%	446.4	445.0	1.5	0.33%	
WESTOWN	**E7167**	100%	1205.0	1190.1	14.9	1.24%	1 switched cap bank
		80%	964.6	955.0	9.5	0.99%	
		60%	724.0	718.6	5.4	0.75%	
		40%	482.3	479.7	2.6	0.54%	

3.81 kV FEEDER LOSS CALCULATION RESULTS

APPENDIX D2

System Peak Date = 8/21/03 @ 1500 Hrs.

Substation	Feeder	% of Distr. Load at time of Sys. Pk (kW)	(1) Metered Power Flow (kW) (Incl. Line Losses)	(2) System Load (kW)	(3) Line Loss (kW)	(3)/(1) % Loss	Comments/Notes
WHITNALL	E5861	100%	1131.0	1123.3	7.7	0.68%	1 switched cap bank
		80%	879.1	874.2	4.9	0.56%	
		60%	647.1	644.2	2.9	0.45%	
		40%	417.9	416.4	1.5	0.36%	
WHITNALL	E5862	100%	1126.0	1104.7	21.2	1.89%	No capacitors
		80%	876.1	862.5	13.6	1.55%	
		60%	645.2	637.6	7.6	1.18%	
		40%	418.2	414.7	3.4	0.81%	

		Total Sum of Metered (kW)		Total Sum of Line Loss (kW)	Ave. % Loss
20 Feeder Totals:	100%	25248.9		530.3	2.10%
	80%	20108.1		341.1	1.70%
	60%	15035.3		197.9	1.32%
	40%	9954.8		91.5	0.92%
			% Pk Load	Max.	Min.
		Feeder Range:	100%	4.66%	0.68%
			80%	3.72%	0.56%
			60%	2.77%	0.45%
			40%	1.91%	0.33%

IR AREA FEEDER LOSS CALCULATION RESULTS

System Peak Date = 8/21/03 @ 1500 Hrs.

Substation	Feeder	% of Distr. Load at time of Sys. Pk (kW)	(1) Metered Power Flow (kW) (Incl. Line Losses)	(2) System Load (kW)	(3) Line Loss (kW)	(3)/(1) % Loss	Comments/Notes
CRYSTAL FALLS	ZCRF51	100%	2220.0	2188.1	32.0	1.44%	116 circuit miles
	Z74551	80%	1759.8	1739.3	20.5	1.16%	no capacitors
		60%	1307.7	1296.3	11.5	0.88%	
		40%	872.4	867.3	5.1	0.59%	
GREENSTONE	ZGRS3	100%	1102.0	1087.0	15.0	1.36%	110 circuit miles
	Z25353	80%	883.3	872.9	10.5	1.18%	1 capacitor
		60%	664.4	657.0	7.3	1.10%	
		40%	436.9	437.0	2.7	0.61%	
POWERS	ZPWR51	100%	2032.0	2011.9	20.1	0.99%	77 circuit miles
	Z79751	80%	1626.9	1613.9	13.1	0.80%	1 capacitor
		60%	1209.3	1201.5	7.8	0.64%	
		40%	804.5	800.8	3.6	0.45%	
STRAWBERRY HILL	ZSBH2	100%	1337.0	1323.2	13.9	1.04%	114 Circuit Miles
	Z31762	80%	1062.3	1052.2	10.1	0.95%	1 capacitor
		60%	792.2	784.5	7.6	0.96%	
		40%	516.1	513.4	2.7	0.52%	
LAND O LAKES	ZLOL2	100%	1615.0	1577.4	37.6	2.33%	82 Circuit Miles
	Z52062	80%	1290.0	1265.9	24.0	1.86%	No capacitors
		60%	965.9	952.4	13.5	1.40%	
		40%	642.9	636.9	6.0	0.93%	
ARMORY	WARM52	100%	5100.0	4971.3	128.7	2.52%	19 circuit miles
	W44252	80%	4045.7	3964.4	81.3	2.01%	2 capacitors
		60%	3009.5	2963.9	45.6	1.52%	
		40%	2002.5	1979.1	23.4	1.17%	
BASS LAKE	WBAS2	100%	3252.0	3127.2	124.7	3.84%	155 circuit miles
	W74652	80%	2606.3	2526.1	80.1	3.07%	2 capacitors
		60%	1961.3	1913.7	47.6	2.43%	
		40%	1300.4	1276.8	23.6	1.81%	
BLUFF VIEW	WBLV2	100%	2322.0	2310.2	11.7	0.50%	25 circuit miles
	W22961	80%	1845.7	1838.2	7.5	0.41%	1 CAPACITOR
		60%	1379.1	1374.8	4.3	0.31%	
		40%	909.3	907.2	2.1	0.23%	
BRUCE CROSSING	HBRU1	100%	1231.0	1173.1	57.9	4.71%	167 circuit miles
	H45952	80%	977.4	940.3	37.1	3.79%	No capacitors
		60%	727.4	706.6	20.9	2.87%	
		40%	481.1	471.9	9.3	1.93%	
HARRIS	HHAR3	100%	2650.0	2600.0	50.0	1.89%	62 circuit miles
	H56353	80%	2121.9	2089.9	32.0	1.51%	No capacitors
		60%	1592.9	1574.8	18.0	1.13%	
		40%	1062.9	1054.9	8.0	0.75%	

IR AREA FEEDER LOSS CALCULATION RESULTS

System Peak Date = 8/21/03 @ 1500 Hrs.

Substation	Feeder	% of Distr. Load at time of Sys. Pk (kW)	(1) Metered Power Flow (kW) (Incl. Line Losses)	(2) System Load (kW)	(3) Line Loss (kW)	(3)/(1) % Loss	Comments/Notes
MASS	FMSS2	100%	395.1	394.1	1.0	0.25%	12 Circuit Miles
	F38052	80%	312.9	312.3	0.6	0.20%	No capacitors
		60%	232.4	232.1	0.4	0.15%	
		40%	153.4	153.3	0.2	0.10%	
CONOVER	FC0N2	100%	1521.0	1425.3	95.7	6.29%	70 Circuit Miles
	F37862	80%	1208.5	1146.3	62.2	5.15%	1 Capacitor
		60%	901.1	864.3	36.8	4.08%	
		40%	618.2	602.5	15.7	2.54%	

		Total Sum of Metered (kW)		Total Sum of Line Loss (kW)	Ave. % Loss
12 Feeder Totals:	100%	24777.0		588.3	2.37%
	80%	19740.7		378.9	1.92%
	60%	14743.2		221.3	1.50%
	40%	9800.6		102.4	1.04%

	% Pk Load	Max.	Min.
12 Feeder Range:	100%	6.29%	0.25%
	80%	5.15%	0.20%
	60%	4.08%	0.15%
	40%	2.54%	0.10%

APPENDIX D3

TRANSFORMER LOSSES

Transformer Size/Type	Sample Average No-Load (Core) Losses	Load (Coil) Losses	Losses at 100% Load	Losses at 80% Load	Losses at 60% Load	Losses at 40% Load	Losses at 20% Load	Losses at 0% Load
10 kVA, 1-ph, OH	26	240	266	180	112	64	36	26
15 kVA, 1-ph, OH	40	291	331	226	145	87	52	40
25 kVA, 1-ph, OH	56	419	475	324	207	123	73	56
50 kVA, 1-ph, OH	79	614	694	473	300	178	104	79
100 kVA, 1-ph, OH	168	1189	1357	929	596	358	216	168
167 kVA, 1-ph, OH	246	1438	1684	1166	764	476	304	246
45 kVA, 3-ph, OH	165	780	945	664	446	290	196	165
75 kVA, 3-ph, OH	160	1343	1503	1020	644	375	214	160
150 kVA, 3-ph, OH	277	1784	2061	1419	919	563	349	277
300 kVA, 3-ph, OH	464	3612	4076	2775	1764	1042	608	464
500 kVA, 3-ph, OH	742	4875	5617	3862	2497	1522	937	742
25 kVA, 1-ph, PM	56	524	580	391	245	140	77	56
50 kVA, 1-ph, PM	98	746	844	575	367	217	128	98
100 kVA, 1-ph, PM	146	1120	1265	862	549	325	190	146
167 kVA, 1-ph, PM	229	1447	1676	1155	750	460	287	229
75 kVA, 3-ph, PM	234	1432	1666	1150	749	463	291	234
150 kVA, 3-ph, PM	378	2510	2888	1984	1281	779	478	378
300 kVA, 3-ph, PM	554	4127	4680	3195	2039	1214	719	554
500 kVA, 3-ph, PM	804	5209	6013	4137	2679	1637	1012	804
750 kVA, 3-ph, PM	1154	7853	9007	6180	3981	2411	1468	1154
1000 kVA, 3-ph, PM	1617	8853	10470	7283	4804	3034	1971	1617
1500 kVA, 3-ph, PM	2145	12118	14263	9900	6507	4084	2629	2145
2500 kVA, 3-ph, PM	2746	18208	20954	14399	9301	5659	3474	2746

APPENDIX D3

TRANSFORMER DATA

Transformer Size/Type	Sample #1 Material Item #	Sample #1 No-Load (Core) Losses	Sample #1 Load (Coil) Losses	Sample #2 Material Item #	Sample #2 No-Load (Core) Losses	Sample #2 Load (Coil) Losses	Sample #3 Material Item #	Sample #3 No-Load (Core) Losses	Sample #3 Load (Coil) Losses
10 kVA, 1-ph, OH	216-0706	26	240						
15 kVA, 1-ph, OH	216-0749	42	260	205-6800	36	315	205-7001	42	297
25 kVA, 1-ph, OH	216-0803	57	410	216-2148	57	468	205-6819	55	378
50 kVA, 1-ph, OH	205-6829	75	606	205-7022	88	650	205-6828	75	587
100 kVA, 1-ph, OH	205-6956	164	1192	205-6957	169	1132	216-0978	171	1244
167 kVA, 1-ph, OH	216-1362	250	1267	216-2296	264	1261	205-6855	225	1785
45 kVA, 3-ph, OH	206-0256	175	783	206-0256	190	787	206-0256	130	771
75 kVA, 3-ph, OH	206-2356	172	1321	207-2351	155	1352	207-2351	154	1355
150 kVA, 3-ph, OH	207-1754	273	1710	207-0405	279	1920	207-0758	280	1721
300 kVA, 3-ph, OH	206-2607	513	3594	207-0804	430	3470	207-2459	448	3772
500 kVA, 3-ph, OH	2183225	742	4875						
25 kVA, 1-ph, PM	227-0404	56	514	227-1301	57	536	227-1061	56	521
50 kVA, 1-ph, PM	227-1125	95	838	227-1313	105	696	227-0463	94	704
100 kVA, 1-ph, PM	227-1184	136	1130	227-1325	141	1230	227-0528	160	999
167 kVA, 1-ph, PM	227-0340	245	1502	227-1602	292	1184	227-1249	149	1655
75 kVA, 3-ph, PM	227-8001	230	1266	227-8020	226	1471	227-6283	245	1560
150 kVA, 3-ph, PM	227-3461	355	2812	227-8022	396	2314	227-8041	382	2404
300 kVA, 3-ph, PM	227-8043	637	4172	227-2440	451	3852	227-6461	573	4356
500 kVA, 3-ph, PM	227-6526	694	5841	227-3763	882	4836	227-6887	835	4950
750 kVA, 3-ph, PM	227-3607	1228	8374	227-6941	1205	7247	210-6736	1029	7939
1000 kVA, 3-ph, PM	227-7000	1639	9217	227-6224	1909	9976	227-3381	1304	7366
1500 kVA, 3-ph, PM	227-7250	1959	12599	227-6259	2509	12794	227-5223	1966	10962
2500 kVA, 3-ph, PM	210-9905	2521	17118	227-7123	3081	18439	210-6868	2635	19068

APPENDIX D3

Background

This transformer test data presented here was taken from available test data for transformers purchased by We Energies and predecessor companies between 1990 and 2000. I attempted to obtain 3 samples of test data for each size and type of transformer listed. For some high-volume transformers, each sample may be an average value for several transformers of that type.

For most sizes and types, the samples are drawn from different material item numbers and they provide samples of transformers with various voltage ratings. The samples for a 45 kVA, 3-ph overhead transformer were drawn from a single material item number because no other data for this size and type of transformer was available. Data for the 10 kVA, 1-ph overhead and the 500 kVA, 3-ph overhead types were limited to 1 sample due to a lack of data. The 10 kVA size is no longer purchased and the 500 kVA, 3-ph overhead type is rarely purchased due to limited usage and available field returns.

Ken Ochs

Percent of Class Energy in System Component - Appendix D4

Class	% of System Energy	Transmission System Including Step-Up Transformers	138kV to 26.4kV Transformers (SE1A)	138kV to 24.9kV Transformers (SE1B)	138kV to 13.2kV Transformers (SE2A)	138kV to 13.2kV Transformers (SE2B)	26.4/24.9kV to 8kV Transformers (SE3A)	13.2kV to 4kV Transformers (SE3B)	138kV to 34.5kv Transformers (FV1A)	138kV to 12.47kV Transformers (FV2A)	34.5kV to 12.47kV Transformers (FV2B)	34.5kV to 4kV Transformers (FV2C)	69kV to 24.9/13.8/12.5/ 6.9/4.2kV Transformers (IR1A)
WI RG1	24.65158%	100.00%	1.40%	68.44%	0.21%	9.49%	58.88%	3.58%	10.26%	1.34%	6.93%	1.99%	1.21%
WI RG2	1.46991%	100.00%	0.30%	74.44%	0.08%	2.58%	60.35%	1.27%	13.72%	1.30%	10.28%	2.13%	4.10%
WI CG1 & CG6	6.94278%	100.00%	2.87%	65.15%	0.60%	9.31%	52.51%	4.74%	9.36%	1.56%	5.98%	1.83%	1.94%
WI CG2	3.37397%	100.00%	2.47%	67.57%	0.40%	8.57%	51.08%	4.49%	10.57%	1.69%	6.90%	1.98%	0.75%
WI CG3	17.73839%	100.00%	5.12%	73.01%	1.23%	5.32%	41.09%	3.25%	9.09%	2.21%	4.97%	1.35%	0.27%
WI PRI Low Voltage	1.16969%	100.00%	10.62%	50.64%	5.41%	7.98%	26.41%	3.28%	15.94%	0.49%	4.92%	3.28%	2.82%
WI PRI Med Voltage	26.30130%	100.00%	10.62%	50.64%	5.41%	7.98%	26.41%	3.28%	15.94%	0.49%	4.92%	3.28%	2.82%
WI PRI High Voltage	1.36772%	100.00%	10.62%	50.64%	5.41%	7.98%	26.41%	3.28%	15.94%	0.49%	4.92%	3.28%	2.82%
WI SL & Oth	0.65676%	100.00%	1.40%	67.32%	9.65%	59.83%	9.90%	9.59%	1.00%	0.00%	0.00%	0.00%	0.00%
WI Company Use	0.26136%	100.00%	2.87%	65.15%	0.60%	9.31%	52.51%	4.74%	9.36%	1.56%	5.98%	1.83%	1.94%
MI RG1	0.53139%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
MI RG2	0.03057%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
MI CG1, CG2 & CG5	0.27712%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
MI CG3	0.20363%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
MI PRI Med Voltage	0.33809%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
MI PRI Sched A	0.94109%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
MI PRI Mines & White Pine	7.56064%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
MI SL & Oth	0.01032%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
MI Company Use	0.00559%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
FERC WI 345 kV	1.01082%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
FERC WI < 345 kV	4.98618%	100.00%	0.41%	19.59%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
FERC MI < 69 kV	0.17111%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
WI Total	83.93345%												
MI Total	9.89843%												
FERC Total	6.16812%												
Total	100.00000%												

Energy Loss Factors by Customer Class and System Component - Appendix D5

	Transmission System Including Step-Up Transformers Dec	138kV to 26.4kV Transformers (SE1A) Dec	138kV to 24.9kV Transformers (SE1B) Dec	138kV to 13.2kV Transformers (SE2A) Dec	138kV to 13.2kV Transformers (SE2B) Dec	26.4/24.9kV to 8kV Transformers (SE3A) Dec	13.2kV to 4kV Transformers (SE3B) Dec	138kV to 34.5kv Transformers (FV1A) Dec	138kV to 12.47kV Transformers (FV2A) Dec	34.5kV to 12.47kV Transformers (FV2B) Dec	34.5kV to 4kV Transformers (FV2C) Dec	69kV to 24.9/13.8/12.5/ 6.9/4.2kV Transformers (IR1A) Dec
WI RG1	2.01%	0.47%	0.40%	0.47%	0.48%	0.64%	0.91%	0.40%	0.49%	0.56%	0.73%	0.59%
WI RG2	2.01%	0.47%	0.40%	0.47%	0.48%	0.64%	0.92%	0.40%	0.49%	0.56%	0.74%	0.59%
WI CG1 & CG6	2.01%	0.47%	0.40%	0.47%	0.48%	0.64%	0.91%	0.40%	0.49%	0.56%	0.73%	0.59%
WI CG2	2.01%	0.46%	0.40%	0.46%	0.48%	0.63%	0.91%	0.40%	0.49%	0.56%	0.73%	0.59%
WI CG3	2.01%	0.46%	0.40%	0.46%	0.48%	0.63%	0.91%	0.40%	0.49%	0.56%	0.73%	0.59%
WI PRI Low Voltage	2.01%	0.47%	0.40%	0.47%	0.48%	0.64%	0.91%	0.40%	0.49%	0.56%	0.73%	0.59%
WI PRI Med Voltage	2.01%	0.47%	0.40%	0.47%	0.48%	0.00%	0.00%	0.40%	0.49%	0.56%	0.00%	0.59%
WI PRI High Voltage	2.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
WI SL & Oth	2.02%	0.47%	0.40%	0.47%	0.48%	0.64%	0.94%	0.41%	0.49%	0.56%	0.75%	0.59%
WI Company Use	2.01%	0.47%	0.40%	0.47%	0.48%	0.64%	0.91%	0.40%	0.49%	0.56%	0.73%	0.59%
MI RG1	2.01%											0.59%
MI RG2	2.01%											0.59%
MI CG1, CG2 & CG5	2.00%											0.59%
MI CG3	2.01%											0.59%
MI PRI Med Voltage	2.01%											0.59%
MI PRI Sched A	2.01%											0.59%
MI PRI Mines & White Pine	2.01%											0.59%
MI SL & Oth	2.02%	0.00%		0.00%			0.00%	0.00%	0.00%	0.00%		0.59%
MI Company Use	2.00%											0.59%
FERC WI 345 kV	2.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
FERC WI < 345 kV	2.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
FERC MI < 69 kV	2.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.59%

WI Total
MI Total
FERC Total

Total

Caclculation of System Energy Loss Factors - Appendix D6

	Transmission System Including Step-Up Transformers	138kV to 26.4kV Transformers (SE1A)	138kV to 24.9kV Transformers (SE1B)	138kV to 13.2kV Transformers (SE2A)	138kV to 13.2kV Transformers (SE2B)	26.4/24.9kV to 8kV Transformers (SE3A)	13.2kV to 4kV Transformers (SE3B)	138kV to 34.5kv Transformers (FV1A)	138kV to 12.47kV Transformers (FV2A)	34.5kV to 12.47kV Transformers (FV2B)	34.5kV to 4kV Transformers (FV2C)	69kV to 24.9/13.8/12.5/ 6.9/4.2kV Transformers (IR1A)
WI RG1	2.01%	0.01%	0.27%	0.00%	0.05%	0.37%	0.03%	0.04%	0.01%	0.04%	0.01%	0.01%
WI RG2	2.01%	0.00%	0.30%	0.00%	0.01%	0.38%	0.01%	0.06%	0.01%	0.06%	0.02%	0.02%
WI CG1 & CG6	2.01%	0.01%	0.26%	0.00%	0.04%	0.33%	0.04%	0.04%	0.01%	0.03%	0.01%	0.01%
WI CG2	2.01%	0.01%	0.27%	0.00%	0.04%	0.32%	0.04%	0.04%	0.01%	0.04%	0.01%	0.00%
WI CG3	2.01%	0.02%	0.29%	0.01%	0.03%	0.26%	0.03%	0.04%	0.01%	0.03%	0.01%	0.00%
WI PRI Low Voltage	2.01%	0.05%	0.20%	0.03%	0.04%	0.17%	0.03%	0.06%	0.00%	0.03%	0.02%	0.02%
WI PRI Med Voltage	2.01%	0.05%	0.20%	0.03%	0.04%	0.00%	0.00%	0.06%	0.00%	0.03%	0.00%	0.02%
WI PRI High Voltage	2.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
WI SL & Oth	2.02%	0.01%	0.27%	0.05%	0.29%	0.06%	0.09%	0.00%	0.00%	0.00%	0.00%	0.00%
WI Company Use	2.01%	0.01%	0.26%	0.00%	0.04%	0.33%	0.04%	0.04%	0.01%	0.03%	0.01%	0.01%
MI RG1	2.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.59%
MI RG2	2.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.59%
MI CG1, CG2 & CG5	2.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.59%
MI CG3	2.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.59%
MI PRI Med Voltage	2.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.59%
MI PRI Sched A	2.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
MI PRI Mines & White Pine	2.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
MI SL & Oth	2.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.59%
MI Company Use	2.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.59%
FERC WI 345 kV	2.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
FERC WI < 345 kV	2.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
FERC MI < 69 kV	2.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.59%
Total	2.01%											

Percent of Class Energy in System Component - Appendix D4

Class	26.4/24.9kV Feeders (SE1)	13.2/12.47kV Feeders (SE2)	8.32/ 3.81 kV Feeders (SE3)	34.5 kV Feeders (FV1)	12.47/4.16 kV Feeders (FV2)	24.9/13.8/6.8/4 .16 kV Feeders (IR1)	Line Transformers	Secondary System
WI RG1	68.71%	9.69%	62.46%	10.26%	10.26%	1.21%	100.00%	100.00%
WI RG2	75.98%	2.65%	61.62%	13.72%	13.72%	4.10%	100.00%	100.00%
WI CG1 & CG6	68.02%	9.91%	57.25%	9.36%	9.36%	1.94%	100.00%	100.00%
WI CG2	70.05%	8.97%	55.57%	10.57%	10.56%	0.75%	100.00%	100.00%
WI CG3	78.13%	6.55%	44.34%	9.09%	8.52%	0.27%	100.00%	100.00%
WI PRI Low Voltage	61.26%	13.39%	29.69%	15.94%	8.70%	2.82%	0.00%	0.00%
WI PRI Med Voltage	61.26%	13.39%	29.69%	15.94%	8.70%	2.82%	0.00%	0.00%
WI PRI High Voltage	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
WI SL & Oth	68.71%	9.69%	62.46%	10.26%	10.26%	1.21%	100.00%	100.00%
WI Company Use	68.02%	9.91%	57.25%	9.36%	9.36%	1.94%	100.00%	100.00%
MI RG1	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	100.00%	100.00%
MI RG2	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	100.00%	100.00%
MI CG1, CG2 & CG5	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	100.00%	100.00%
MI CG3	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	100.00%	100.00%
MI PRI Med Voltage	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%
MI PRI Sched A	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
MI PRI Mines & White Pine	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
MI SL & Oth	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	100.00%	100.00%
MI Company Use	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	100.00%	100.00%
FERC WI 345 kV	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
FERC WI < 345 kV	20.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
FERC MI < 69 kV	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%

WI Total
MI Total
FERC Total

Total

Energy Loss Factors by Customer Class and System Component - Appendix D5

	26.4/24.9kV Feeders (SE1) Dec	13.2/12.47kV Feeders (SE2) Dec	8.32/ 3.81 kV Feeders (SE3) Dec	34.5 kV Feeders (FV1) Dec	12.47/4.16 kV Feeders (FV2) Dec	24.9/13.8/6.8/4 .16 kV Feeders (IR1) Dec	Line Transformers Dec	Secondary System Annual
WI RG1	1.20%	0.75%	1.03%	0.83%	1.24%	6.05%	2.54%	0.91%
WI RG2	1.45%	0.68%	1.17%	1.14%	1.30%	6.05%	2.76%	0.91%
WI CG1 & CG6	1.14%	0.68%	1.02%	0.66%	1.12%	5.93%	2.53%	0.91%
WI CG2	1.20%	0.70%	1.00%	0.64%	1.00%	5.93%	2.62%	0.91%
WI CG3	1.21%	0.57%	1.03%	0.57%	1.04%		2.22%	0.91%
WI PRI Low Voltage	1.07%	0.54%	0.84%	0.40%	0.98%		0.00%	0.00%
WI PRI Med Voltage	1.07%	0.54%	0.84%	0.40%	0.98%	0.00%	0.00%	0.00%
WI PRI High Voltage	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
WI SL & Oth	1.10%	0.65%	1.01%	0.55%	1.05%	5.79%	2.54%	0.91%
WI Company Use	1.14%	0.68%	1.02%	0.66%	1.12%	5.93%	2.53%	0.91%
MI RG1				1.00%	0.71%	2.04%	2.89%	0.91%
MI RG2						2.32%	2.98%	0.91%
MI CG1, CG2 & CG5						1.59%	2.50%	0.91%
MI CG3						1.28%	2.24%	0.91%
MI PRI Med Voltage						1.61%	0.00%	0.00%
MI PRI Sched A						0.00%	0.00%	0.00%
MI PRI Mines & White Pine						0.00%	0.00%	0.00%
MI SL & Oth		0.00%		0.00%	0.00%	1.64%	2.89%	0.91%
MI Company Use						1.59%	2.50%	0.91%
FERC WI 345 kV	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%		0.00%
FERC WI < 345 kV	1.07%	0.00%	0.00%	0.00%	0.00%	0.00%		0.00%
FERC MI < 69 kV	0.00%	0.00%	0.00%	0.00%	0.00%	1.61%		0.00%

WI Total
MI Total
FERC Total

Total

Caclculation of System Energy Loss Factors - Appendix D6

	26.4/24.9kV Feeders (SE1)	13.2/12.47kV Feeders (SE2)	8.32/ 3.81 kV Feeders (SE3)	34.5 kV Feeders (FV1)	12.47/4.16 kV Feeders (FV2)	24.9/13.8/6.8/4 .16 kV Feeders (IR1)	Line Transformers	Secondary System	Total Class Losses	Weighted Class Losses
WI RG1	0.83%	0.07%	0.64%	0.08%	0.13%	0.07%	2.54%	0.91%	8.12%	2.00%
WI RG2	1.10%	0.02%	0.72%	0.16%	0.18%	0.25%	2.76%	0.91%	8.96%	0.13%
WI CG1 & CG6	0.78%	0.07%	0.58%	0.06%	0.10%	0.12%	2.53%	0.91%	7.96%	0.55%
WI CG2	0.84%	0.06%	0.56%	0.07%	0.11%	0.04%	2.62%	0.91%	8.01%	0.27%
WI CG3	0.94%	0.04%	0.46%	0.05%	0.09%	0.00%	2.22%	0.91%	7.43%	1.32%
WI PRI Low Voltage	0.65%	0.07%	0.25%	0.06%	0.08%	0.00%	0.00%	0.00%	3.78%	0.04%
WI PRI Med Voltage	0.65%	0.07%	0.25%	0.06%	0.08%	0.00%	0.00%	0.00%	3.56%	0.94%
WI PRI High Voltage	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.01%	0.03%
WI SL & Oth	0.76%	0.06%	0.63%	0.06%	0.11%	0.07%	2.54%	0.91%	7.92%	0.05%
WI Company Use	0.78%	0.07%	0.58%	0.06%	0.10%	0.12%	2.53%	0.91%	7.96%	0.02%
MI RG1	0.00%	0.00%	0.00%	0.00%	0.00%	2.04%	2.89%	0.91%	8.43%	0.04%
MI RG2	0.00%	0.00%	0.00%	0.00%	0.00%	2.32%	2.98%	0.91%	8.80%	0.00%
MI CG1, CG2 & CG5	0.00%	0.00%	0.00%	0.00%	0.00%	1.59%	2.50%	0.91%	7.60%	0.02%
MI CG3	0.00%	0.00%	0.00%	0.00%	0.00%	1.28%	2.24%	0.91%	7.03%	0.01%
MI PRI Med Voltage	0.00%	0.00%	0.00%	0.00%	0.00%	1.61%	0.00%	0.00%	4.20%	0.01%
MI PRI Sched A	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.01%	0.02%
MI PRI Mines & White Pine	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.01%	0.15%
MI SL & Oth	0.00%	0.00%	0.00%	0.00%	0.00%	1.64%	2.89%	0.91%	8.05%	0.00%
MI Company Use	0.00%	0.00%	0.00%	0.00%	0.00%	1.59%	2.50%	0.91%	7.60%	0.00%
FERC WI 345 kV	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.01%	0.02%
FERC WI < 345 kV	0.21%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.22%	0.11%
FERC MI < 69 kV	0.00%	0.00%	0.00%	0.00%	0.00%	1.61%	0.00%	0.00%	4.20%	0.01%
								x		
Total										**5.76%**

Monthly and Annual Loss Factors by Customer Class - Appendix D7

Total System
Percent of Generated Load That is Lost

Class	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
WI RG1	8.17%	8.10%	8.00%	7.88%	7.85%	8.00%	8.30%	8.56%	7.99%	7.87%	7.96%	8.14%	8.10%
WI RG2	8.95%	8.86%	8.72%	8.55%	8.50%	8.67%	9.03%	9.32%	8.69%	8.56%	8.68%	8.92%	8.82%
WI CG1 & CG6	8.02%	7.98%	7.88%	7.78%	7.79%	7.91%	8.15%	8.35%	7.94%	7.80%	7.84%	7.98%	7.97%
WI CG2	8.01%	7.98%	7.91%	7.83%	7.84%	7.94%	8.15%	8.34%	8.00%	7.85%	7.86%	8.00%	7.99%
WI CG3	7.33%	7.31%	7.26%	7.21%	7.22%	7.30%	7.47%	7.64%	7.37%	7.24%	7.23%	7.33%	7.34%
WI PRI Low Voltage	4.81%	4.77%	4.72%	4.71%	4.72%	4.80%	4.97%	5.06%	4.84%	4.75%	4.77%	4.80%	4.82%
WI PRI Med Voltage	3.28%	3.28%	3.26%	3.27%	3.31%	3.32%	3.37%	3.42%	3.34%	3.31%	3.30%	3.28%	3.32%
WI PRI High Voltage	2.00%	2.00%	2.01%	2.02%	2.04%	2.02%	2.00%	2.00%	2.01%	2.02%	2.02%	2.01%	2.01%
WI SL & Oth	8.03%	7.96%	7.86%	7.75%	7.74%	7.80%	8.00%	8.17%	7.83%	7.80%	7.87%	8.01%	7.91%
WI Company Use	8.02%	7.98%	7.88%	7.78%	7.79%	7.91%	8.15%	8.35%	7.94%	7.80%	7.84%	7.98%	7.97%
MI RG1	8.39%	8.38%	8.17%	7.98%	7.95%	8.07%	8.34%	8.46%	8.07%	8.04%	8.26%	8.43%	8.23%
MI RG2	8.78%	8.78%	8.52%	8.29%	8.27%	8.40%	8.70%	8.81%	8.41%	8.37%	8.63%	8.80%	8.59%
MI CG1, CG2 & CG5	7.60%	7.57%	7.43%	7.30%	7.26%	7.35%	7.55%	7.68%	7.36%	7.34%	7.47%	7.60%	7.47%
MI CG3	7.04%	7.01%	6.92%	6.85%	6.84%	6.91%	7.08%	7.18%	6.93%	6.89%	6.91%	7.03%	6.97%
MI PRI Med Voltage	4.23%	4.16%	4.09%	3.98%	3.92%	3.94%	4.09%	4.27%	3.90%	4.00%	4.10%	4.20%	4.09%
MI PRI Sched A	2.00%	2.00%	2.01%	2.02%	2.04%	2.02%	2.00%	2.00%	2.01%	2.02%	2.02%	2.01%	2.01%
MI PRI Mines & White Pine	2.00%	2.00%	2.01%	2.02%	2.04%	2.02%	2.00%	2.00%	2.01%	2.02%	2.02%	2.01%	2.01%
MI SL & Oth	8.04%	8.00%	7.82%	7.64%	7.59%	7.64%	7.83%	7.95%	7.67%	7.70%	7.89%	8.05%	7.82%
MI Company Use	7.60%	7.57%	7.43%	7.30%	7.26%	7.35%	7.55%	7.68%	7.36%	7.34%	7.47%	7.60%	7.47%
FERC WI 345 kV	2.00%	2.00%	2.01%	2.02%	2.04%	2.02%	2.00%	2.00%	2.01%	2.02%	2.02%	2.01%	2.01%
FERC WI < 345 kV	2.22%	2.22%	2.22%	2.23%	2.25%	2.24%	2.24%	2.25%	2.24%	2.24%	2.23%	2.22%	2.24%
FERC MI < 69 kV	4.23%	4.16%	4.09%	3.98%	3.92%	3.94%	4.09%	4.27%	3.90%	4.00%	4.10%	4.20%	4.09%
Total	5.70%	5.67%	5.62%	5.57%	5.57%	5.65%	5.80%	5.93%	5.67%	5.59%	5.61%	5.69%	5.69%

Monthly and Annual Loss Factors by Customer Class - Appendix D7

Total System
Factor to Multiply Customer-Level Load to Obtain Generation-Level

Class	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
WI RG1	1.08894	1.08815	1.08699	1.08548	1.08514	1.08698	1.09056	1.09362	1.08690	1.08544	1.08651	1.08865	1.08812
WI RG2	1.09832	1.09725	1.09555	1.09345	1.09293	1.09488	1.09923	1.10283	1.09515	1.09361	1.09501	1.09792	1.09671
WI CG1 & CG6	1.08715	1.08667	1.08556	1.08441	1.08443	1.08587	1.08872	1.09112	1.08624	1.08459	1.08506	1.08668	1.08659
WI CG2	1.08711	1.08675	1.08585	1.08494	1.08507	1.08627	1.08875	1.09098	1.08690	1.08520	1.08531	1.08695	1.08684
WI CG3	1.07909	1.07883	1.07833	1.07764	1.07779	1.07878	1.08079	1.08268	1.07954	1.07800	1.07791	1.07908	1.07924
WI PRI Low Voltage	1.05048	1.05012	1.04954	1.04942	1.04959	1.05041	1.05225	1.05334	1.05088	1.04992	1.05005	1.05040	1.05069
WI PRI Med Voltage	1.03395	1.03393	1.03369	1.03384	1.03419	1.03433	1.03486	1.03538	1.03459	1.03422	1.03409	1.03390	1.03433
WI PRI High Voltage	1.02040	1.02041	1.02052	1.02060	1.02077	1.02064	1.02037	1.02043	1.02049	1.02058	1.02058	1.02050	1.02052
WI SL & Oth	1.08729	1.08643	1.08526	1.08397	1.08392	1.08463	1.08697	1.08901	1.08494	1.08456	1.08546	1.08707	1.08592
WI Company Use	1.08715	1.08667	1.08556	1.08441	1.08443	1.08587	1.08872	1.09112	1.08624	1.08459	1.08506	1.08668	1.08659
MI RG1	1.09164	1.09150	1.08892	1.08671	1.08637	1.08783	1.09104	1.09247	1.08773	1.08749	1.09004	1.09209	1.08965
MI RG2	1.09629	1.09622	1.09315	1.09037	1.09018	1.09172	1.09533	1.09664	1.09178	1.09140	1.09441	1.09652	1.09396
MI CG1, CG2 & CG5	1.08223	1.08190	1.08029	1.07877	1.07829	1.07936	1.08168	1.08314	1.07940	1.07917	1.08068	1.08221	1.08073
MI CG3	1.07571	1.07541	1.07440	1.07357	1.07338	1.07423	1.07618	1.07732	1.07441	1.07397	1.07428	1.07558	1.07498
MI PRI Med Voltage	1.04417	1.04340	1.04265	1.04147	1.04082	1.04106	1.04269	1.04459	1.04061	1.04170	1.04277	1.04388	1.04267
MI PRI Sched A	1.02042	1.02041	1.02054	1.02062	1.02080	1.02066	1.02037	1.02043	1.02050	1.02059	1.02058	1.02050	1.02053
MI PRI Mines & White Pine	1.02042	1.02041	1.02054	1.02062	1.02080	1.02066	1.02037	1.02043	1.02050	1.02059	1.02058	1.02050	1.02053
MI SL & Oth	1.08744	1.08699	1.08480	1.08268	1.08212	1.08267	1.08497	1.08639	1.08304	1.08347	1.08572	1.08760	1.08485
MI Company Use	1.08223	1.08190	1.08029	1.07877	1.07829	1.07936	1.08168	1.08314	1.07940	1.07917	1.08068	1.08221	1.08073
FERC WI 345 kV	1.02040	1.02041	1.02052	1.02060	1.02077	1.02064	1.02037	1.02043	1.02049	1.02058	1.02058	1.02050	1.02052
FERC WI < 345 kV	1.02267	1.02268	1.02272	1.02282	1.02303	1.02295	1.02289	1.02305	1.02292	1.02289	1.02286	1.02273	1.02287
FERC MI < 69 kV	1.04417	1.04340	1.04265	1.04147	1.04082	1.04106	1.04269	1.04459	1.04061	1.04170	1.04277	1.04388	1.04267
Total	1.06044	1.06013	1.05955	1.05897	1.05904	1.05984	1.06155	1.06308	1.06006	1.05917	1.05945	1.06032	1.06030

Monthly and Annual Loss Factors by Customer Class - Appendix D7

Transmission System
Percent of Generated Load That is Lost

Class	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
WI RG1	2.00%	2.00%	2.01%	2.02%	2.04%	2.02%	1.99%	2.00%	2.01%	2.02%	2.02%	2.01%	2.01%
WI RG2	2.00%	2.00%	2.01%	2.02%	2.04%	2.02%	1.99%	2.00%	2.01%	2.02%	2.02%	2.01%	2.01%
WI CG1 & CG6	2.00%	2.00%	2.01%	2.02%	2.03%	2.02%	1.99%	2.00%	2.00%	2.01%	2.01%	2.01%	2.01%
WI CG2	2.00%	2.00%	2.01%	2.01%	2.03%	2.02%	1.99%	2.00%	2.00%	2.01%	2.01%	2.01%	2.01%
WI CG3	2.00%	2.00%	2.01%	2.01%	2.03%	2.02%	1.99%	2.00%	2.00%	2.01%	2.01%	2.01%	2.01%
WI PRI Low Voltage	2.00%	2.00%	2.01%	2.02%	2.04%	2.02%	2.00%	2.00%	2.01%	2.02%	2.02%	2.01%	2.01%
WI PRI Med Voltage	2.00%	2.00%	2.01%	2.02%	2.04%	2.02%	2.00%	2.00%	2.01%	2.02%	2.02%	2.01%	2.01%
WI PRI High Voltage	2.00%	2.00%	2.01%	2.02%	2.04%	2.02%	2.00%	2.00%	2.01%	2.02%	2.02%	2.01%	2.01%
WI SL & Oth	2.01%	2.01%	2.03%	2.05%	2.07%	2.05%	2.02%	2.01%	2.03%	2.04%	2.03%	2.02%	2.03%
WI Company Use	2.00%	2.00%	2.01%	2.02%	2.03%	2.02%	1.99%	2.00%	2.00%	2.01%	2.01%	2.01%	2.01%
MI RG1	2.00%	2.00%	2.01%	2.02%	2.04%	2.02%	1.99%	2.00%	2.01%	2.02%	2.02%	2.01%	2.01%
MI RG2	2.00%	2.00%	2.01%	2.02%	2.04%	2.02%	1.99%	2.00%	2.01%	2.02%	2.02%	2.01%	2.01%
MI CG1, CG2 & CG5	1.99%	1.99%	2.00%	2.01%	2.03%	2.01%	1.99%	2.00%	2.00%	2.01%	2.01%	2.00%	2.00%
MI CG3	2.00%	2.00%	2.01%	2.02%	2.03%	2.02%	1.99%	2.00%	2.01%	2.01%	2.02%	2.01%	2.01%
MI PRI Med Voltage	2.00%	2.00%	2.01%	2.02%	2.04%	2.02%	2.00%	2.00%	2.01%	2.02%	2.02%	2.01%	2.01%
MI PRI Sched A	2.00%	2.00%	2.01%	2.02%	2.04%	2.02%	2.00%	2.00%	2.01%	2.02%	2.02%	2.01%	2.01%
MI PRI Mines & White Pine	2.00%	2.00%	2.01%	2.02%	2.04%	2.02%	2.00%	2.00%	2.01%	2.02%	2.02%	2.01%	2.01%
MI SL & Oth	2.01%	2.02%	2.03%	2.05%	2.07%	2.06%	2.02%	2.01%	2.04%	2.04%	2.03%	2.02%	2.03%
MI Company Use	1.99%	1.99%	2.00%	2.01%	2.03%	2.01%	1.99%	2.00%	2.00%	2.01%	2.01%	2.00%	2.00%
FERC WI 345 kV	2.00%	2.00%	2.01%	2.02%	2.04%	2.02%	2.00%	2.00%	2.01%	2.02%	2.02%	2.01%	2.01%
FERC WI < 345 kV	2.00%	2.00%	2.01%	2.02%	2.04%	2.02%	2.00%	2.00%	2.01%	2.02%	2.02%	2.01%	2.01%
FERC MI < 69 kV	2.00%	2.00%	2.01%	2.02%	2.04%	2.02%	2.00%	2.00%	2.01%	2.02%	2.02%	2.01%	2.01%
Total	2.00%	2.00%	2.01%	2.02%	2.03%	2.02%	1.99%	2.00%	2.01%	2.01%	2.02%	2.01%	2.01%

Monthly and Annual Loss Factors by Customer Class - Appendix D7

Transmission System
Factor to Multiply Load at Transmission / Distribution Interface to Obtain Generation-Level

Class	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
WI RG1	1.02040	1.02040	1.02052	1.02063	1.02081	1.02064	1.02033	1.02043	1.02047	1.02058	1.02058	1.02049	1.02051
WI RG2	1.02042	1.02042	1.02054	1.02065	1.02083	1.02066	1.02034	1.02042	1.02049	1.02060	1.02060	1.02052	1.02053
WI CG1 & CG6	1.02038	1.02038	1.02049	1.02056	1.02072	1.02058	1.02031	1.02042	1.02042	1.02052	1.02054	1.02048	1.02048
WI CG2	1.02036	1.02036	1.02047	1.02055	1.02071	1.02057	1.02031	1.02041	1.02042	1.02050	1.02052	1.02046	1.02047
WI CG3	1.02037	1.02037	1.02048	1.02055	1.02071	1.02058	1.02033	1.02041	1.02043	1.02051	1.02052	1.02047	1.02047
WI PRI Low Voltage	1.02040	1.02041	1.02052	1.02060	1.02077	1.02064	1.02037	1.02043	1.02049	1.02058	1.02058	1.02050	1.02052
WI PRI Med Voltage	1.02040	1.02041	1.02052	1.02060	1.02077	1.02064	1.02037	1.02043	1.02049	1.02058	1.02058	1.02050	1.02052
WI PRI High Voltage	1.02040	1.02041	1.02052	1.02060	1.02077	1.02064	1.02037	1.02043	1.02049	1.02058	1.02058	1.02050	1.02052
WI SL & Oth	1.02053	1.02055	1.02072	1.02090	1.02111	1.02098	1.02062	1.02054	1.02075	1.02081	1.02075	1.02064	1.02073
WI Company Use	1.02038	1.02038	1.02049	1.02056	1.02072	1.02058	1.02031	1.02042	1.02042	1.02052	1.02054	1.02048	1.02048
MI RG1	1.02039	1.02039	1.02051	1.02062	1.02080	1.02063	1.02033	1.02042	1.02047	1.02056	1.02057	1.02048	1.02051
MI RG2	1.02042	1.02042	1.02054	1.02065	1.02083	1.02066	1.02034	1.02042	1.02049	1.02060	1.02060	1.02052	1.02054
MI CG1, CG2 & CG5	1.02035	1.02035	1.02045	1.02053	1.02068	1.02055	1.02031	1.02041	1.02041	1.02049	1.02051	1.02046	1.02046
MI CG3	1.02039	1.02039	1.02050	1.02059	1.02075	1.02062	1.02034	1.02042	1.02046	1.02055	1.02057	1.02050	1.02050
MI PRI Med Voltage	1.02042	1.02041	1.02054	1.02062	1.02080	1.02066	1.02037	1.02043	1.02050	1.02059	1.02058	1.02050	1.02053
MI PRI Sched A	1.02042	1.02041	1.02054	1.02062	1.02080	1.02066	1.02037	1.02043	1.02050	1.02059	1.02058	1.02050	1.02053
MI PRI Mines & White Pine	1.02042	1.02041	1.02054	1.02062	1.02080	1.02066	1.02037	1.02043	1.02050	1.02059	1.02058	1.02050	1.02053
MI SL & Oth	1.02055	1.02056	1.02074	1.02093	1.02115	1.02102	1.02066	1.02055	1.02078	1.02084	1.02077	1.02065	1.02077
MI Company Use	1.02035	1.02035	1.02045	1.02053	1.02068	1.02055	1.02031	1.02041	1.02041	1.02049	1.02051	1.02046	1.02046
FERC WI 345 kV	1.02040	1.02041	1.02052	1.02060	1.02077	1.02064	1.02037	1.02043	1.02049	1.02058	1.02058	1.02050	1.02052
FERC WI < 345 kV	1.02040	1.02041	1.02052	1.02060	1.02077	1.02064	1.02037	1.02043	1.02049	1.02058	1.02058	1.02050	1.02052
FERC MI < 69 kV	1.02042	1.02041	1.02054	1.02062	1.02080	1.02066	1.02037	1.02043	1.02050	1.02059	1.02058	1.02050	1.02053
Total	1.02040	1.02040	1.02051	1.02060	1.02077	1.02063	1.02035	1.02042	1.02047	1.02056	1.02057	1.02049	1.02051

Monthly and Annual Loss Factors by Customer Class - Appendix D7

Total System Less Transmission System
Percent of Generated Load That is Lost

Class	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
WI RG1	6.17%	6.10%	5.99%	5.85%	5.81%	5.98%	6.31%	6.56%	5.99%	5.86%	5.95%	6.14%	6.09%
WI RG2	6.95%	6.86%	6.71%	6.52%	6.46%	6.64%	7.03%	7.32%	6.68%	6.54%	6.66%	6.91%	6.81%
WI CG1 & CG6	6.02%	5.98%	5.87%	5.77%	5.76%	5.89%	6.16%	6.35%	5.94%	5.79%	5.83%	5.97%	5.96%
WI CG2	6.02%	5.99%	5.90%	5.82%	5.81%	5.93%	6.16%	6.34%	5.99%	5.84%	5.85%	5.99%	5.98%
WI CG3	5.33%	5.31%	5.26%	5.19%	5.19%	5.29%	5.48%	5.64%	5.37%	5.23%	5.22%	5.32%	5.34%
WI PRI Low Voltage	2.81%	2.77%	2.71%	2.69%	2.69%	2.78%	2.97%	3.06%	2.83%	2.74%	2.75%	2.79%	2.81%
WI PRI Med Voltage	1.28%	1.28%	1.25%	1.25%	1.27%	1.30%	1.37%	1.42%	1.34%	1.29%	1.28%	1.27%	1.31%
WI PRI High Voltage	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
WI SL & Oth	6.02%	5.94%	5.83%	5.70%	5.67%	5.75%	5.98%	6.16%	5.80%	5.76%	5.84%	5.99%	5.88%
WI Company Use	6.02%	5.98%	5.87%	5.77%	5.76%	5.89%	6.16%	6.35%	5.94%	5.79%	5.83%	5.97%	5.96%
MI RG1	6.40%	6.38%	6.16%	5.96%	5.91%	6.05%	6.35%	6.46%	6.06%	6.03%	6.24%	6.42%	6.22%
MI RG2	6.78%	6.78%	6.51%	6.26%	6.23%	6.38%	6.71%	6.81%	6.40%	6.36%	6.61%	6.79%	6.58%
MI CG1, CG2 & CG5	5.60%	5.58%	5.43%	5.29%	5.23%	5.34%	5.56%	5.68%	5.36%	5.33%	5.46%	5.59%	5.47%
MI CG3	5.04%	5.01%	4.92%	4.84%	4.80%	4.89%	5.08%	5.18%	4.92%	4.87%	4.90%	5.02%	4.97%
MI PRI Med Voltage	2.23%	2.16%	2.08%	1.96%	1.88%	1.92%	2.10%	2.27%	1.89%	1.99%	2.09%	2.19%	2.08%
MI PRI Sched A	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
MI PRI Mines & White Pine	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
MI SL & Oth	6.03%	5.99%	5.79%	5.59%	5.52%	5.58%	5.81%	5.94%	5.63%	5.66%	5.86%	6.03%	5.79%
MI Company Use	5.60%	5.58%	5.43%	5.29%	5.23%	5.34%	5.56%	5.68%	5.36%	5.33%	5.46%	5.59%	5.47%
FERC WI 345 kV	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
FERC WI < 345 kV	0.22%	0.22%	0.21%	0.21%	0.22%	0.22%	0.24%	0.25%	0.23%	0.22%	0.22%	0.21%	0.22%
FERC MI < 69 kV	2.23%	2.16%	2.08%	1.96%	1.88%	1.92%	2.10%	2.27%	1.89%	1.99%	2.09%	2.19%	2.08%
Total	3.70%	3.67%	3.61%	3.55%	3.54%	3.63%	3.80%	3.93%	3.66%	3.57%	3.60%	3.68%	3.68%

Monthly and Annual Loss Factors by Customer Class - Appendix D7

Total System Less Transmission System
Factor to Multiply Customer-Level Load to Obtain Load at Transmission / Distribution Interface

Class	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
WI RG1	1.06717	1.06640	1.06513	1.06354	1.06302	1.06500	1.06883	1.07172	1.06510	1.06355	1.06460	1.06679	1.06625
WI RG2	1.07634	1.07529	1.07350	1.07133	1.07063	1.07272	1.07732	1.08076	1.07316	1.07154	1.07291	1.07584	1.07465
WI CG1 & CG6	1.06544	1.06497	1.06376	1.06256	1.06242	1.06397	1.06705	1.06929	1.06450	1.06278	1.06322	1.06487	1.06478
WI CG2	1.06542	1.06507	1.06407	1.06309	1.06305	1.06438	1.06708	1.06916	1.06515	1.06340	1.06349	1.06516	1.06504
WI CG3	1.05755	1.05729	1.05669	1.05594	1.05592	1.05703	1.05926	1.06102	1.05793	1.05633	1.05624	1.05743	1.05759
WI PRI Low Voltage	1.02948	1.02912	1.02844	1.02824	1.02823	1.02917	1.03124	1.03225	1.02978	1.02875	1.02888	1.02930	1.02956
WI PRI Med Voltage	1.01328	1.01325	1.01291	1.01297	1.01315	1.01341	1.01420	1.01465	1.01382	1.01336	1.01324	1.01313	1.01353
WI PRI High Voltage	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
WI SL & Oth	1.06542	1.06455	1.06323	1.06178	1.06151	1.06234	1.06501	1.06709	1.06289	1.06245	1.06339	1.06509	1.06387
WI Company Use	1.06544	1.06497	1.06376	1.06256	1.06242	1.06397	1.06705	1.06929	1.06450	1.06278	1.06322	1.06487	1.06478
MI RG1	1.06983	1.06969	1.06704	1.06475	1.06423	1.06584	1.06930	1.07061	1.06591	1.06558	1.06807	1.07017	1.06775
MI RG2	1.07435	1.07428	1.07115	1.06831	1.06793	1.06962	1.07350	1.07469	1.06986	1.06937	1.07232	1.07447	1.07194
MI CG1, CG2 & CG5	1.06065	1.06032	1.05864	1.05707	1.05644	1.05763	1.06015	1.06148	1.05781	1.05750	1.05896	1.06051	1.05906
MI CG3	1.05421	1.05392	1.05282	1.05191	1.05156	1.05253	1.05473	1.05576	1.05287	1.05234	1.05263	1.05397	1.05339
MI PRI Med Voltage	1.02327	1.02253	1.02167	1.02043	1.01961	1.01999	1.02187	1.02368	1.01971	1.02068	1.02174	1.02291	1.02169
MI PRI Sched A	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
MI PRI Mines & White Pine	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
MI SL & Oth	1.06554	1.06509	1.06276	1.06048	1.05971	1.06038	1.06301	1.06451	1.06099	1.06135	1.06363	1.06560	1.06278
MI Company Use	1.06065	1.06032	1.05864	1.05707	1.05644	1.05763	1.06015	1.06148	1.05781	1.05750	1.05896	1.06051	1.05906
FERC WI 345 kV	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
FERC WI < 345 kV	1.00222	1.00222	1.00216	1.00218	1.00221	1.00226	1.00247	1.00257	1.00238	1.00226	1.00223	1.00219	1.00230
FERC MI < 69 kV	1.02327	1.02253	1.02167	1.02043	1.01961	1.01999	1.02187	1.02368	1.01971	1.02068	1.02174	1.02291	1.02169
Total	1.03843	1.03813	1.03746	1.03681	1.03670	1.03762	1.03954	1.04093	1.03799	1.03703	1.03730	1.03822	1.03818

WISCONSIN ELECTRIC POWER COMPANY

CASE U-15981

TILDEN MINING CO., L.C. AND EMPIRE IRON MINING PARTNERSHIP
First Set of Discovery Requests

TM-WE-07: Regarding the distribution substations used to deliver power directly to the CpLC customers, please provide a circuit diagram showing the following:

a. The voltage of all electrical circuits entering and exiting the substations.
b. The rated capacity, number of electrical phases, and primary and secondary voltages, of all power transformers housed within the substations.
c. A line of demarcation, if one exists, indicating where ownership of distribution equipment changes from WEPCo to the CpLC customer.

Objection: WEPCO objects to this request on the basis that the request is ambiguous, overbroad and unduly burdensome and the information requested is not reasonably calculated to lead to the discovery of admissible evidence in this rate proceeding. A circuit diagram showing the voltage of all circuits, rated capacity and number of electric phases of all transformers is not relevant to, or reasonably likely to lead to the discovery of admissible evidence for, calculating a just and reasonable rate. Furthermore, requiring the calculation and presentation of such information is unduly burdensome. Without waiving such objection, the Company responds as follows:

Response: Circuit diagrams for Empire and Tilden Substations are provided in pdf format. Note the diagram for Empire is in two parts.

Objection by: Counsel
Answered by: Eric Rogers and Duane Olson
Date: September 11, 2009

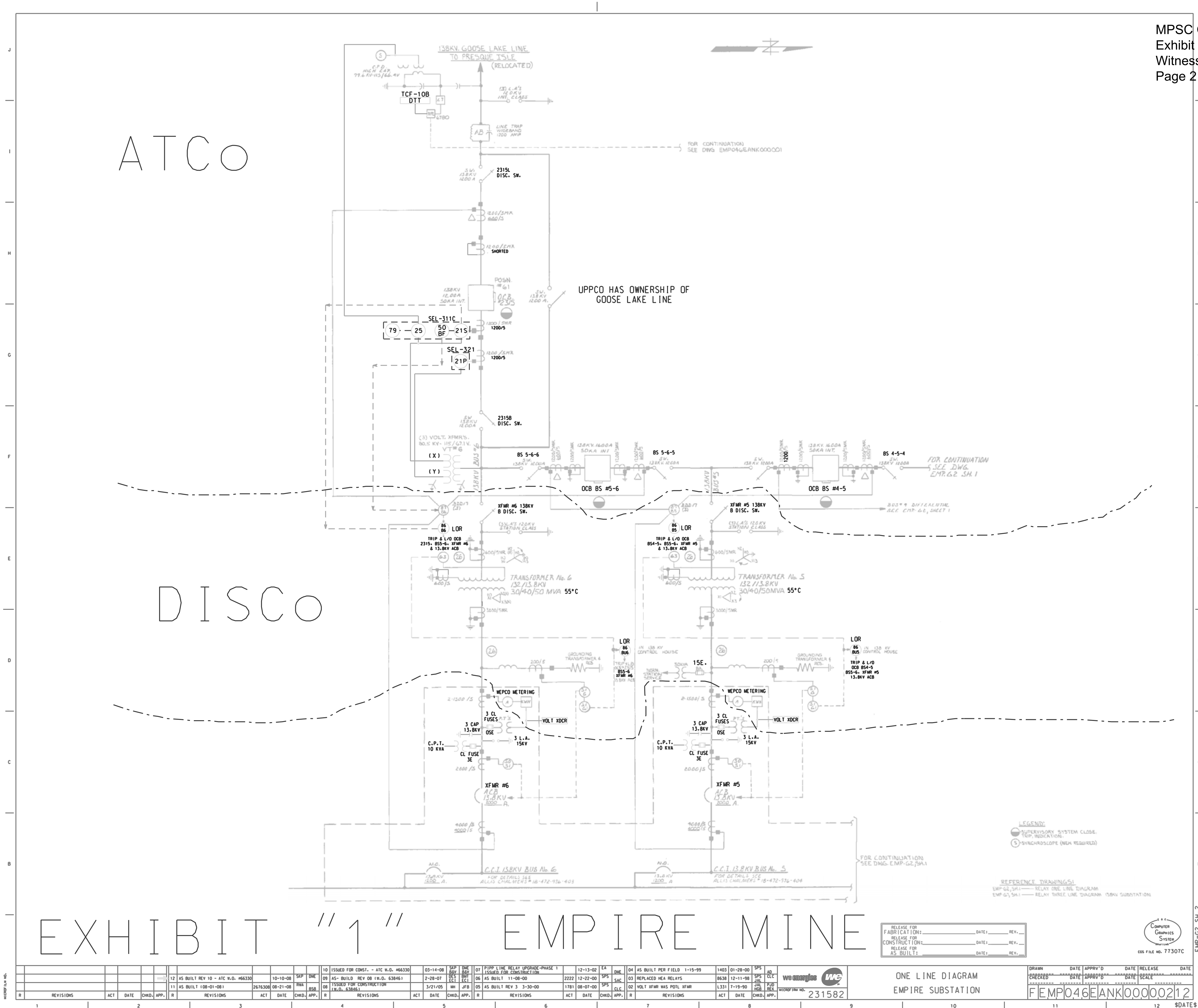

ATCo
DISCo
EXHIBIT "1" EMPIRE MINE
138KV GOOSE LAKE LINE TO PRESQUE ISLE (RELOCATED)
TCF-10B DTT
2315L DISC. SW.
UPPCO HAS OWNERSHIP OF GOOSE LAKE LINE
SEL-311C
SEL-321
2315B DISC. SW.
BS 5-6-6
BS 5-6-5
OCB BS #5-6
OCB BS #4-5
BS 4-5-4
XFMR #6 138KV B DISC. SW.
XFMR #5 138KV B DISC. SW.
TRANSFORMER No. 6
TRANSFORMER No. 5
WEPCO METERING
VOLT XDCR
XFMR #6
XFMR #5
ONE LINE DIAGRAM
EMPIRE SUBSTATION
231582
FEMP046EANK00000212

EXHIBIT "1"

138KV FORSYTH LINE

138KV LINE NLKG11 (NORTH LAKE)

138KV LINE 16342 TO NATIONAL

15 DRAWING ISSUED FOR CONSTRUCTION BY ATC

This ATC issued drawing is presently in the construction stage.
Contact ATC Project Manager Jerry Schaefer
at (920) 338-6524 on all construction related manners.
For technical issues, proposed revisions to this drawing,
and to return "Field Mark-ups", contact the ATC Lead Engineer
Derek Parker at (906) 779-7903
Field Mark-ups Performed By: _____
Date: _____
Contact Number: _____

ATCo

DISCo

TRANSFORMER No.4 132/13.8KV 30 MVA 30/40/50MVA OA/FA/FA 55°C

TRANSFORMER No.3 132/13.8KV 30 MVA 30/40/50MVA OA/FA/FA 55°C

TRANSFORMER No.2 132/13.8KV 30 MVA 30/40/50MVA OA/FA/FA 55°C

TRANSFORMER No.1 132/13.8 KV 30 MVA 30/40/50MVA OA/FA/FA 55°C 33.6/44.7/55.8MVA OA/FA/FA 65°C

13.8 KV SWITCHGEAR (ONE UNIT PER TRANSFORMER)

C.C.T. 13.8KV BUS No.4 | C.C.T. 13.8KV BUS No.3 | C.C.T. 13.8KV BUS No.2 | C.C.T. 13.8KV BUS No.1

LEGEND
SUPERVISORY SYSTEM CLOSE, TRIP, INDICATION.
S — SYNCHROSCOPE (NEW REQUIRED)

NOTES:
1) EXISTING 600A TO BE CHANGED TO 1200A.
2) EXISTING 600A NO CHANGE.
15 3) DTT IS BEING RECEIVED FROM NORTH LAKE BUT NOT TRANSMITTED TO NORTH LAKE.

REFERENCE DRAWING:
EMP-G2, SH.2 — RELAY ONE LINE DIAGRAM

EMPIRE MINE

RELEASE FOR FABRICATION: _____ DATE: _____ REV.: _____
RELEASE FOR CONSTRUCTION: _____ DATE: _____ REV.: _____
RELEASE FOR AS BUILTS: _____ DATE: _____ REV.: _____

Computer Graphics System — COS FILE NO. 77306C

REV	REVISIONS	ACT	DATE	CHKD.	APP.
16	ISSUED FOR CONST. - ATC W.O. #66330		03-14-08	SAP	DNE
15	ISSUED FOR CONST. - ATC W.O. #65426		01-29-08	SAP	DNE
14	AS-BUILD REV 12 I.R.O. 63846		2-23-07	DCS	DNE
13	ADD UNDERFREQUENCY LOAD SHEDDING	223022	05-09-06	SAC	KPW
12	ISSUED FOR CONSTRUCTION (W.O. 63846)		3/21/05	MH	JFB
11	AS BUILT PTPP LINE RELAY UPGRADE - REV 10		07-08-04	MH	TGR
10	PTPP LINE RELAY UPGRADE - PHASE 2 ISSUED FOR CONSTRUCTION		12-13-02	EA	DNE
09	REPL SEL-121 W SEL-321	2725	09-09-01	JAL	
08	AS BUILT REV 6 2-22-01	2514	04-16-01	SPS	PJD
07	AS BUILT PER FIELD 11-08-00		2222	12-22-00	SPS
06	REPLACED POSH #11 PRI RELAYING		1981	10-26-00	SPS
05	AS BUILT REV 3 3-30-00		1781	08-07-00	SPS
04	AS BUILT PER FIELD 1-18-99		1403	01-28-00	SPS
03	REPLACED HEA RELAYS		8638	12-11-98	SPS
17	AS-BUILT REV. 16 -ATC W.O. #66330			10-10-08	SAP

Wisconsin Electric — MICROFILM NO. 231575

ONE LINE DIAGRAM
EMPIRE SUBSTATION

DRAWN	DATE	APPRV'D	DATE	RELEASE	DATE
CHECKED	DATE	APPRV'D	DATE	SCALE	

F EMP 046 E ANK 000001 17

$DATE$ $TIME$

EMP-G2 SH.1 A

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ATC Information on level 45

EXHIBIT "11"

138 KV TILDEN Nº 3 TO NATIONAL

138 KV TILDEN Nº 2 TO NATIONAL

13 138 KV TILDEN LINE 336 TO PRESQUE ISLE

13 DRAWING ISSUED FOR CONSTRUCTION BY ATC

This ATC issued drawing is presently in the construction stage.
Contact ATC Project Manager Jerry Schaefer
at (920) 338-6524 on all construction related manners.
For technical issues, proposed revisions to this drawing,
and to return "Field Mark-ups", contact the ATC Lead Engineer
Derek Parker at (906) 779-7903
Field Mark-ups Performed By: _____
Date: _____
Contact Number: _____

POSN 11 — POSN 21 — POSN 41

BS 1-2 — BS 2-3 — BS 3-4

TRANSFORMER Nº1 — TRANSFORMER Nº2 — TRANSFORMER Nº3 — TRANSFORMER Nº4

OUT OF SERVICE

VOLT. XFMR. #4

138KV BUS 1 — 138KV BUS 2 — 138KV BUS 3 — 138KV BUS 4

NO1 STATION SERVICE 50 KVA — NO2 STATION SERVICE 50 KVA

GROUNDING TRANSFORMER

PT'S

WEPCO METERING

TOTALIZING RELAY (EXISTING)

CPT-1 15KVA 1 Ph, 13.8KV-120/240V — CPT-2 15KVA 1 Ph, 14.4KV-120/240V

A.C.B. XFMR #1 13.8 KV — XFMR #2 13.8 KV — XFMR #3 13.8 KV ACB — XFMR #4 13.8 KV ACB

TILDEN MINE

13.8 KV SWITCHGEAR (ONE UNIT PER TRANSFORMER)

13.8KV BUS #10501 — 13.8KV BUS #10502 — 13.8KV BUS #210501 — 13.8KV BUS #210502

13.8 KV TIE BUS

LEGEND

SUPERVISORY CLOSE, TRIP, AND INDICATION

✱ MATERIAL BY WPS CO.

REFERENCE DRAWINGS:

TIL-G7 SH.1 — RELAY THREE LINE DIAGRAM 138KV SUBSTATION

TIL-G7 SH.2 — RELAY THREE LINE DIAGRAM 138KV OCB-2525

REF FILES	REV NO.	DATE	REVISION DESCRIPTION	ACT	DRAWN	CHK'D	APP'D
	13	05-02-08	LA, CCVT & TRAP REPLACED - W.O. #65411	IB	SKP	DME	
	12	2/15/08	AS-BUILT REV 10 - ATC W.O. #65187	LDO	SKP	DME	
	11	09-06-07	AS BUILT REV 09 (11-30-06) 2564517	2564517	ATB		KPW
	10	07-20-07	ISSUED FOR CONST. - ATC W.O. #65187		B&V	MNG	DME
	09	05-05-06	ADD UNDERFREQUENCY LOAD SHEDDING ON BS #4	223011	SAC		KPW
	08	12-21-00	AS BUILT 11-08-00	2224	SPS		SAC
	07	06-23-00	AS BUILT 3-10-99	1402	SPS		AD
	06	03-02-92	AS BUILT REV 5 1-15-92	617	DML	PMC	SCD

MICROFILM NO. 231270

ONE LINE DIAGRAM

TILDEN SUBSTATION

DRAWN	DATE	APPRVD.	DATE	CGS FILE
				86435C
CHECKED	DATE	APPRVD.	DATE	SCALE

F TLD 266E ANK 000001 13

WAS: TIL-G2 SH.1

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WISCONSIN ELECTRIC POWER COMPANY

CASE U-15981

TILDEN MINING CO., L.C. AND EMPIRE IRON MINING PARTNERSHIP
First Set of Discovery Requests

TM-WE-05: On page 17 of his direct testimony, Mr. Rogers states, "Current customers served by the CpLC and Schedule A tariffs receive power directly from distribution substations…" With respect to this testimony, please respond to the following:

a. How many distribution substations provide power directly to CpLC customers?
b. What is the net plant cost of each substation used to provide power directly to CpLC customers?
c. Do the distribution substations which directly serve the CpLC customers, also serve other Michigan retail or wholesale customers?
d. What is the net booked value of the distribution equipment contained in the distribution substations used to deliver power directly to the CpLC customers?

Objection: WEPCO objects to request TM-WE-05(d) to the extent that it requests the booked value of "distribution equipment" contained in these substations to be calculated and stated separately from the plant cost for each substation, including distribution equipment on the basis that a request for such detail is ambiguous, overbroad, unduly burdensome and not reasonably calculated to lead to the discovery of admissible evidence in this rate proceeding. Both the distribution equipment and all other plant comprising each substation are an integral and necessary part of providing service through the substation, and the net book cost thereof, on a total substation basis, is the booked cost relevant to setting rates. Further dividing such costs into each component part is both overbroad and not relevant to, or reasonably likely to lead to the discovery of admissible evidence for, calculating a just and reasonable rate. Furthermore, requiring the calculation and presentation of such information is unduly burdensome. Without waiving such objection, the Company responds as follows:

Response:

a. CpLC customers are served by two substations owned by the Company – the Empire substation and the Tilden substation.

MPSC Case No. U-15981
Response to TM-WE-05
Page 2 of 2

b. The net plant cost for the Empire Substation is $1,381,619 and the net plant cost for the Tilden substation is $1,201,849.
c. The Empire and Tilden substations serve CpLC customers only.
d. The net book value of the distribution equipment contained in the Empire and Tilden substations is included in the figure in the response to TM-WE-05b.

Answered by: Eric Rogers, Duane Olson and Matt Swartz
Date: September 11, 2009

WISCONSIN ELECTRIC POWER COMPANY

CASE U-15981

TILDEN MINING CO., L.C. AND EMPIRE IRON MINING PARTNERSHIP
First Set of Discovery Requests

TM-WE-06: With respect to WEPCo's distribution substations used to serve WEPCo's Michigan retail customers, please identify the following:

a. Total number of substations.
b. The sizes of the substations in terms of capacity, along with the number of substations for each size.
c. Operation and maintenance cost per substation.

Response:

a. A list of the substations and circuits serving retail customers in Michigan is provided. Note that some of these substations serve customers in Wisconsin as well as Michigan. The substations which service customers in both jurisdictions are listed in work paper WPA6F1-3a.
b. The voltage of each circuit is provided.
c. The total O&M cost for distribution substations is derived from work paper WPA6F1-10 and is the sum of accounts 581, 591 and 592. Of the company total of $8,539,574, the Michigan retail jurisdiction is allocated $301,483, as indicated in Exhibit A6 Schedule F1 Section 2 row124. O&M costs are not split out for individual substations.

Answered by: Eric Rogers
Date: September 11, 2009

StationName	KV	CircuitID	CircuitName	Location	State
Aragon	24.9	30551	ARA51	Norway	MI
Aragon	24.9	30552	ARA52	Norway	MI
Armory	13.8	44251	ARM51	Kingsford	MI
Armory	13.8	44252	ARM52	Kingsford	MI
Armory	13.8	44254	ARM54	Kingsford	MI
Armory	13.8	44261	ARM61	Kingsford	MI
Armory	13.8	44262	ARM62	Kingsford	MI
Armory	13.8	44263	ARM63	Kingsford	MI
Bass Lake	13.8	74651	BAS51	Iron Mountain	MI
Bass Lake	13.8	74652	BAS52	Iron Mountain	MI
Bass Lake	13.8	74653	BAS53	Iron Mountain	MI
Bass Lake	13.8	74663	BAS63	Iron Mountain	MI
Bass Lake	13.8	74664	BAS64	Iron Mountain	MI
Bruce Crossing	13.8	45952	BRU1	Stannard	MI
Bruce Crossing	13.8	45954	BRU2	Stannard	MI
Bruce Crossing	13.8	45951	BRU3	Stannard	MI
Cornell 13.8	13.8	27362	COR1	Cornell	MI
Cornell 13.8	13.8	27363	COR2	Cornell	MI
Cornell 13.8	13.8	27361	COR3	Cornell	MI
Crystal Falls	24.9	74551	CRF51	Crystal Falls	MI
Crystal Falls	24.9	74552	CRF52	Crystal Falls	MI
Crystal Falls	24.9	74553	CRF53	Crystal Falls	MI
Felch Mountain	24.9	17581	FMT81	Felch	MI
Felch Mountain	24.9	17582	FMT82	Felch	MI
Greenstone	24.9	25352	GRS2	Humboldt	MI
Greenstone	24.9	25353	GRS3	Humboldt	MI
Harris	24.9	56381	HAR81	Harris	MI
Harris	24.9	56382	HAR82	Harris	MI
Harris	24.9	56383	HAR83	Harris	MI
Land O Lakes	24.9	52061	LOL1	Watersmeet	MI
Land O Lakes	24.9	52062	LOL2	Watersmeet	MI
Land O Lakes	24.9	52063	LOL3	Watersmeet	MI
Mass	12.47	38051	MSS1	Greenland	MI
Mass	12.47	38052	MSS2	Greenland	MI
Plains	13.8	78621	PLA2	Breitung	MI
Powers	24.9	79751	PWR51	Spalding	MI
Powers	24.9	79761	PWR61	Spalding	MI
Powers	24.9	79762	PWR62	Spalding	MI
Randville	13.8	37561	RAN1	Sagola	MI
Randville	13.8	37562	RAN2	Sagola	MI
Randville	13.8	37563	RAN3	Sagola	MI
Sagola	24.9	13351	SAG51	Sagola	MI
Sagola	24.9	13352	SAG52	Sagola	MI
Strawberry Hill	24.9	31763	SBH1	Iron River	MI
Strawberry Hill	24.9	31762	SBH2	Iron River	MI
Strawberry Hill	24.9	31761	SBH3	Iron River	MI
Watersmeet	24.9	65864	WSM1	Watersmeet	MI
Watersmeet	24.9	65861	WSM2	Watersmeet	MI

Bluff View	13.8	22964	BLV1	Niagara	WI
Bluff View	13.8	22961	BLV2	Niagara	WI
Bluff View	13.8	22962	BLV4	Niagara	WI
Twin Lake	24.9	25251	TWL51	Phelps	WI
Twin Lake	24.9	25252	TWL52	Phelps	WI
Twin Lake	24.9	25253	TWL53	Phelps	WI
Plains	13.8		PLA1	Breitung	MI
Armory	13.8	44253	ARM50	Kingsford	MI
Empire	138	04610	04610	Richmond	MI
Empire	138	04620	04620	Richmond	MI
Empire	138	04630	04630	Richmond	MI
Empire	138	04640	04640	Richmond	MI
Empire	138	04650	04650	Richmond	MI
Empire	138	04660	04660	Richmond	MI
Nordic	69	31280	31280	Felch	MI
Plains	138	78651	78651	Breitung	MI
Plains	138	78652	78652	Breitung	MI
Plains	138	78661	78661	Breitung	MI
Plains	138	78662	78662	Breitung	MI
Tilden	138	26610	26610	Tilden	MI
Tilden	138	26620	26620	Tilden	MI
Tilden	138	26630	26630	Tilden	MI
Tilden	138	26640	26640	Tilden	MI

WISCONSIN ELECTRIC POWER COMPANY

CASE U-15981

TILDEN MINING CO., L.C. AND EMPIRE IRON MINING PARTNERSHIP
First Set of Discovery Requests

TM-WE-02: Please provide the workpapers that support Mr. Rogers' allegation, appearing on page 13 of his direct testimony, that 11 of the 12 monthly system peaks are considerably lower than the annual system peak, as it pertains to the projected 2010 test year.

Response: The monthly coincident peak reports used to develop the 12CP allocators shown in work papers WPA6F1-2 and WPA13F1-2 are included in "Response to TM-WE-02 &03.xls". The coincident peak values are in the sheets named "YYYY CP", where YYYY is the year (2003 through 2007).

Answered by: Eric Rogers
Date: September 11, 2009

Wisconsin Electric Power Company
2003 Class Load Analysis
Non Coincident (by Rate Group)Peak
Generation Level

9/11/09 14:34

Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Maximum
M03C00	Mich Company Use	387	422	332	422	407	296	267	267	296	258	297	394	422
	Total Michigan Company Use	387	422	332	422	407	296	267	267	296	258	297	394	422
M03F60	Mich Wholesale Rate 60 <69KV	11,720	10,625	10,125	7,602	6,401	10,535	10,936	12,362	10,467	9,851	10,557	11,867	12,362
	Total Michigan Wholesale	11,720	10,625	10,125	7,602	6,401	10,535	10,936	12,362	10,467	9,851	10,557	11,867	12,362
M03L88	Mich Lighting Rate 88	451	481	569	611	729	849	663	661	565	517	431	437	849
M03L89	Mich Lighting Rate 89	0	0	0	0	0	0	0	0	0	0	0	0	0
M03U89	Mich Pumping Rate 89	5	5	3	2	2	1	2	4	3	1	2	5	1
M03LRS	Mich Residential Area Lighting	80	96	103	122	143	158	139	139	83	105	87	75	158
M03LSC	Mich Secondary Area Lighting	116	145	119	145	229	238	230	203	129	145	160	119	238
	Total Michigan Lighting & Other	653	727	794	880	1,102	1,246	1,034	1,007	779	768	679	637	1,246
M03P22	Mich Gen Pri CP1 Rate <69KV	6,686	7,601	6,795	3,084	7,392	9,302	4,687	7,854	3,907	3,708	1,791	3,205	7,854
M03P26	Mich Gen Pri Rate 26 Champion Firm	32,812	59,677	30,793	30,929	32,429	35,398	35,636	35,781	41,351	32,246	33,997	29,054	35,781
M03P46	Mich Gen Pri Rate 26 Champion Curt	1,543	1,697	1,925	0	0	1,868	1,624	1,464	0	808	1,431	1,549	1,464
M03P42	Mich Gen Pri Curt Rate <26KV	6,369	6,525	5,980	5,963	5,978	6,166	6,103	6,105	6,240	6,343	7,876	10,992	6,105
M03P27	Mich White Pine Mine 69 KV	4,330	4,775	4,586	4,696	4,243	3,861	3,908	4,042	4,179	4,522	4,335	4,589	4,042
M03P25	Mich Gen Pri Rate 25 Mines	290,378	265,004	308,955	320,775	317,392	292,915	308,331	312,523	310,501	315,561	312,733	295,933	312,523
	Total Michigan General Primary	342,118	345,280	359,033	365,447	367,434	349,509	360,290	367,770	366,178	363,188	362,164	345,321	367,770
M03S72	Mich Gen Sec Cg1	18,226	19,965	18,251	17,117	18,679	19,000	18,154	20,149	13,758	14,840	22,581	18,833	22,581
M03S40	Mich Gen Sec Cg5 Tou	995	1,052	1,074	1,069	862	1,569	1,038	1,015	753	885	1,448	1,304	1,448
M03S76	Mich Gen Sec Cg2 Tou	421	482	432	398	377	352	305	429	368	318	347	392	347
M03S74	Mich Gen Sec Cg3 Tou Demand	10,971	10,742	10,604	10,536	10,391	11,547	11,258	11,842	11,953	10,888	9,919	10,108	9,919
	Total Michigan General Secondary	30,613	32,241	30,362	29,120	30,308	32,468	30,755	33,435	26,831	26,931	34,296	30,637	34,296
M03R62	Mich Res Flat Rg1	38,751	35,171	32,927	27,951	28,249	34,913	29,173	36,969	22,945	35,002	33,773	37,678	38,751
M03R27	Mich Res TOU Rg2	2,482	2,366	2,310	1,908	1,755	2,167	1,399	1,254	1,402	1,918	1,863	2,044	2,482
	Total Michigan Residential	41,232	37,537	35,237	29,858	30,004	37,081	30,571	38,223	24,346	36,919	35,637	39,722	41,232
	Total Michigan Retail	414,616	415,785	425,425	425,305	428,848	420,304	422,650	440,436	418,135	427,806	432,776	416,317	444,545
	Total Michigan	426,722	426,832	435,883	433,329	435,656	431,135	433,853	453,065	428,898	437,915	443,630	428,578	457,329

Wisconsin Electric Power Company
2003 Class Load Analysis
Non Coincident (by Rate Group)Peak
Generation Level

9/11/09 14:34

Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Maximum
W03C00	Wisc Company Use	16,113	16,775	14,773	14,215	13,576	16,055	15,516	15,196	16,336	14,062	14,174	14,622	16,775
	Total Wisconsin Company Use	16,113	16,775	14,773	14,215	13,576	16,055	15,516	15,196	16,336	14,062	14,174	14,622	16,775
W03F60	Wisc Wholesale 345KV	43,154	43,594	41,209	43,365	41,274	71,348	65,994	76,187	60,841	47,209	47,422	51,438	76,187
W03F63	Wisc Wholesale 34KV	49,809	49,750	49,111	43,422	48,259	0	0	0	0	0	0	0	0
	Total Wisc Wholesale (Excluding WPPI)	92,963	93,344	90,320	86,787	89,533	71,348	65,994	76,187	60,841	47,209	47,422	51,438	76,187
W03W01	Wisc WPPI Transmission	224,719	259,448	221,655	199,183	228,805	268,641	284,985	336,057	320,735	318,692	350,357	322,778	336,057
	Total WPPI Transmission	224,719	259,448	221,655	199,183	228,805	268,641	284,985	336,057	320,735	318,692	350,357	322,778	336,057
	Total Wisc Wholesale (Including WPPI)	317,682	352,793	311,975	285,969	318,338	339,990	350,979	412,244	381,576	365,901	397,779	374,217	412,244
W03L01	Wisc Lighting Rate 01	13,319	15,000	16,802	19,314	22,369	25,332	20,175	21,265	15,536	16,241	14,489	12,614	21,265
W03L05	Wisc Lighting Rate 05	1,478	1,372	1,596	1,763	2,013	2,633	2,699	2,770	1,937	1,603	1,289	1,244	2,770
W03U05	Wisc Pumping Rate 05	4,802	5,194	4,432	2,867	4,320	4,654	4,922	4,705	5,397	5,235	3,610	3,831	4,705
W03L36	Wisc Lighting Rate 36 (Tou)	17,994	16,696	16,929	18,592	19,764	20,473	14,883	16,805	14,949	17,695	16,994	16,553	16,805
W03L46	Wisc Lighting Rate 46	2,548	2,470	2,531	2,609	2,751	3,054	2,388	2,684	2,176	2,439	2,483	2,416	2,684
W03LRS	Wisc Res Area Lighting	767	882	982	1,124	1,386	1,379	1,408	1,321	838	940	869	709	1,321
W03LSC	Wisc Gen Sec & Gen Pri Area Lighting	4,393	5,098	5,803	6,359	7,239	7,908	7,842	6,929	5,773	5,294	4,496	4,227	6,929
	Total Wisconsin Lighting & Other	45,301	46,711	49,075	52,628	59,843	65,434	54,317	56,480	46,606	49,448	44,232	41,595	65,434
W03P28	Wisc Gen Pri Cp1 8KV Customers	49,264	52,352	49,156	49,995	48,339	54,123	52,449	55,171	54,940	51,897	45,803	46,827	55,171
W03P29	Wisc Gen Pri Cp3 <=13KV	5,179	4,967	5,731	3,890	4,424	4,485	2,451	3,013	5,071	4,483	3,738	3,332	3,013
W03P81	Wisc Gen Pri Cp3a <13KV	2,261	1,988	2,383	2,133	2,240	2,188	2,353	2,405	2,515	2,630	1,460	2,246	2,405
	Total Wisconsin GP Low Voltage	56,704	59,307	57,269	56,018	55,002	60,796	57,253	60,589	62,526	59,010	51,001	52,406	60,589
W03P27	Wisc Gen Pri Cp1 13KV Customers	205,108	206,063	215,262	230,844	213,459	259,707	254,026	271,051	254,538	232,246	211,110	195,719	271,051
W03P26	Wisc Gen Pri Cp1 26KV Customers	596,891	614,566	608,605	648,157	631,211	702,170	697,073	725,848	699,954	652,061	623,397	605,735	725,848
W03P25	Wisc Gen Pri Cp1 34KV Customers	142,984	136,375	135,876	138,856	135,872	136,770	132,564	130,739	123,951	120,721	113,286	110,872	130,739
W03P30	Wisc Gen Pri Cp3 Medium Voltage	33,060	28,414	31,194	31,696	28,861	26,788	30,201	29,571	28,375	23,141	23,791	31,415	29,571
W03P33	Wisc Gen Pri Cp1 34KV-Stora Enso Kimberly	33,539	32,794	33,779	33,084	30,183	32,426	33,536	28,854	33,985	33,357	29,258	29,842	28,854
W03P34	Wisc Gen Pri Cp1 26KV Charter	5,612	5,754	5,782	5,680	5,609	5,414	5,947	5,299	5,939	5,887	5,584	5,768	5,299
W03P20	Wisc Gen Pri Cp2m 26KV Charter	53,720	57,382	53,380	53,056	52,597	42,772	52,618	48,175	56,524	51,090	46,201	54,323	48,175
W03P21	Wisc Gen Pri Cp2m 13KV	6,876	7,845	6,561	6,627	7,675	6,804	8,084	8,295	7,930	7,576	5,959	5,455	8,295
W03P22	Wisc Gen Pri Cp2m 26KV	20,142	21,307	22,196	22,757	23,893	12,600	23,534	23,922	21,949	24,844	27,539	25,258	23,922
W03P82	Wisc Gen Pri Cp3a 13KV	706	626	734	618	632	603	645	632	560	660	657	698	632
W03P83	Wisc Gen Pri Cp3a 26KV	12,496	12,297	12,426	12,704	11,781	11,458	13,972	17,675	16,667	18,423	14,655	15,048	17,675
W03P84	Wisc Gen Pri Cp3a 34KV	9,573	9,812	10,615	9,149	17,110	24,759	29,454	35,396	34,802	34,290	29,085	33,330	35,396
	Total Wisconsin GP Medium Voltage	1,120,707	1,133,233	1,136,411	1,193,227	1,158,883	1,262,271	1,281,652	1,325,457	1,285,175	1,204,294	1,130,522	1,113,463	1,325,457
W03P38	Wisc Gen Pri Cp1 138KV	2,297	2,912	2,617	884	5,939	5,025	6,862	6,926	7,131	7,887	7,036	8,842	6,926
W03P39	Wisc Gen Pri Cp2m 138KV	12,904	12,966	12,766	12,917	2,048	13,245	13,161	13,101	13,213	13,170	13,225	13,185	13,101
W03P32	Wisc Gen Pri Cp3 138KV Stora Enso Niagra	25,594	17,729	20,686	16,051	24,454	11,214	29,657	27,680	29,694	29,837	16,031	30,051	27,680
	Total Wisconsin GP High Voltage	40,795	33,607	36,069	29,852	32,441	29,484	49,680	47,707	50,038	50,895	36,292	52,079	47,707
	Total Wisconsin General Primary	1,218,206	1,226,146	1,229,749	1,279,097	1,246,326	1,352,551	1,388,586	1,433,753	1,397,738	1,314,199	1,217,815	1,217,948	1,433,753

Wisconsin Electric Power Company
2003 Class Load Analysis
Non Coincident (by Rate Group)Peak
Generation Level

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Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Maximum
W03S44	Wisc Gen Sec Cg1 Flat	391,705	378,442	384,090	360,201	361,291	537,814	456,027	521,507	488,649	363,086	318,110	396,913	488,649
W03S42	Wisc Gen Sec Cg6 Small Tou	11,327	9,788	7,504	4,174	5,826	13,272	8,213	13,923	9,092	5,825	5,704	8,527	9,092
W03S34	Wisc Gen Sec Cg2 Flat Demand	197,360	190,682	197,906	189,461	185,234	227,961	199,315	225,563	246,023	206,297	177,584	205,910	246,023
W03S70	Wisc Gen Sec Cg3 Tou Demand	970,981	950,938	970,810	923,537	957,136	1,085,453	1,107,718	1,131,555	1,171,679	1,006,816	901,756	977,714	1,171,679
W03S71	Wisc Gen Sec Cg3c Curt	2,841	2,699	2,781	3,540	3,401	4,598	3,836	3,031	4,085	3,835	3,606	2,484	4,085
W03S80	Wisc Gen Sec Cg3a Coop	3,452	3,231	3,223	4,045	4,121	3,317	4,125	4,212	4,316	3,755	2,771	2,824	4,316
	Total Cg3, Cg3A and Cg3C	977,274	956,868	976,814	931,122	964,658	1,093,368	1,115,679	1,138,798	1,180,079	1,014,406	908,133	983,022	1,180,079
	Total Wisconsin General Secondary	1,577,667	1,535,780	1,566,314	1,484,958	1,517,009	1,872,415	1,779,234	1,899,791	1,923,844	1,589,614	1,409,532	1,594,372	1,923,844
W03R11	Wisc Res Flat Rg1 & Fg1	1,549,650	1,403,766	1,365,273	1,240,555	1,163,429	1,976,851	2,033,331	2,254,944	1,618,872	1,363,261	1,473,531	1,589,887	2,254,944
W03R17	Wisc Res Tou Rg2	106,340	110,658	95,351	93,799	79,264	108,466	84,351	91,116	62,586	83,043	84,141	103,773	91,116
	Total Wisconsin Residential	1,655,990	1,514,424	1,460,625	1,334,354	1,242,693	2,085,318	2,117,682	2,346,060	1,681,458	1,446,304	1,557,672	1,693,660	2,346,060
	Dates and Times of Non Coin Peaks													
	Mich Wholesale	01/18/02	02/11/02	03/04/02	04/18/02	05/02/02	06/30/02	07/17/02	08/29/02	09/09/02	10/22/02	11/18/02	12/03/02	
		8:00	8:00	8:00	20:00	9:00	22:00	14:00	21:00	17:00	10:00	18:00	18:00	
	Mich Lighting	01/10/02	02/27/02	03/09/02	04/18/02	05/09/02	06/26/02	07/18/02	08/06/02	09/23/02	10/01/02	11/11/02	12/17/02	
		18:00	6:00	6:00	23:00	2:00	1:00	22:00	22:00	20:00	2:00	19:00	19:00	
	Mich General Primary	01/13/02	02/24/02	03/28/02	04/30/02	05/19/02	06/27/02	07/26/02	08/19/02	09/28/02	10/32/2002	11/30/02	12/06/02	
		12:00	5:00	21:00	22:00	15:00	5:00	16:00	21:00	0:00	0:00	20:00	18:00	
	Mich General Secondary	01/03/02	02/11/02	03/05/02	04/24/02	05/30/02	06/25/02	07/17/02	08/12/02	09/09/02	10/14/02	11/06/02	12/09/02	
		9:00	11:00	11:00	11:00	14:00	14:00	14:00	14:00	14:00	9:00	11:00	11:00	
	Mich Residential	01/01/02	02/03/02	03/03/02	04/03/02	05/09/02	06/30/02	07/01/02	08/11/02	09/09/02	10/20/02	11/30/02	12/22/02	
		19:00	18:00	20:00	20:00	21:00	18:00	18:00	19:00	21:00	19:00	18:00	18:00	
	Wisc Wholesale	01/03/02	02/13/02	03/19/02	04/18/02	05/31/02	06/24/02	07/30/02	08/01/02	09/09/02	10/01/02	11/06/02	12/02/02	
		18:00	21:00	12:00	14:00	13:00	17:00	17:00	17:00	15:00	15:00	11:00	18:00	
	Wisc WPPI	01/28/02	02/19/02	03/01/02	04/03/02	05/14/02	06/25/02	07/17/02	08/08/02	09/06/02	10/01/02	11/21/02	12/26/02	
		16:00	12:00	8:00	22:00	11:00	19:00	14:00	12:00	14:00	9:00	18:00	19:00	
	Wisc Lighting	01/12/02	02/27/02	03/14/02	04/21/02	05/30/02	06/30/02	07/17/02	08/01/02	09/29/02	10/01/02	11/29/02	12/07/02	
		18:00	21:00	20:00	21:00	22:00	22:00	22:00	22:00	21:00	21:00	18:00	18:00	
	Wisc General Primary	01/08/02	02/21/02	03/05/02	04/17/02	05/30/02	06/25/02	07/16/02	08/01/02	09/09/02	10/01/02	11/12/02	12/05/02	
		11:00	12:00	9:00	13:00	14:00	11:00	12:00	12:00	14:00	12:00	11:00	12:00	
	Wisc General Secondary	01/07/02	02/28/02	03/05/02	04/16/02	05/30/02	06/25/02	07/17/02	08/01/02	09/09/02	10/01/02	11/05/02	12/05/02	
		11:00	11:00	12:00	14:00	14:00	14:00	14:00	14:00	14:00	14:00	11:00	11:00	
	Wisc Residential	01/01/02	02/25/02	03/04/02	04/16/02	05/30/02	06/30/02	07/21/02	08/01/02	09/09/02	10/01/02	11/30/02	12/08/02	
		18:00	19:00	19:00	21:00	22:00	18:00	18:00	19:00	20:00	19:00	18:00	19:00	

Wisconsin Electric Power Company
2003 Class Load Analysis
Native System Peak
Generation Level

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Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average
M03C00	Mich Company Use	301	318	247	405	407	289	233	259	289	183	231	303	289
	Total Michigan Company Use	301	318	247	405	407	289	233	259	289	183	231	303	289
M03F60	Mich Wholesale Rate 60 <69KV	11,720	7,808	9,193	6,344	5,275	10,530	10,681	12,008	10,084	8,579	9,179	10,367	9,314
	Total Michigan Wholesale	11,720	7,808	9,193	6,344	5,275	10,530	10,681	12,008	10,084	8,579	9,179	10,367	9,314
M03L88	Mich Lighting Rate 88	444	481	569	0	0	0	0	0	0	517	431	437	240
M03L89	Mich Lighting Rate 89	0	0	0	0	0	0	0	0	0	0	0	0	0
M03U89	Mich Pumping Rate 89	2	2	2	2	2	1	1	1	1	1	1	2	1
M03LRS	Mich Residential Area Lighting	79	96	103	0	0	0	0	0	0	105	87	75	45
M03LSC	Mich Secondary Area Lighting	114	145	119	0	0	0	0	0	0	145	160	119	67
	Total Michigan Lighting & Other	638	724	792	2	2	1	1	1	1	767	678	634	353
M03P22	Mich Gen Pri CP1 Rate <69KV	6,737	7,890	7,500	9,059	9,311	9,296	6,140	9,127	9,108	8,128	3,050	3,136	7,374
M03P26	Mich Gen Pri Rate 26 Champion Firm	30,491	29,235	29,749	28,015	35,217	30,929	31,448	28,364	34,029	32,911	29,305	29,007	30,725
M03P46	Mich Gen Pri Rate 26 Champion Curt	1,632	1,348	768	2,231	1,114	0	1,872	1,904	1,214	1,949	1,541	1,576	1,429
M03P42	Mich Gen Pri Curt Rate <26KV	5,957	6,537	5,947	5,762	6,006	6,054	5,954	5,927	5,971	6,269	10,994	10,958	6,861
M03P27	Mich White Pine Mine 69 KV	4,688	4,472	4,204	4,566	4,109	3,578	3,933	4,194	4,484	4,576	4,251	4,651	4,309
M03P25	Mich Gen Pri Rate 25 Mines	257,746	267,647	258,264	289,227	268,609	260,911	286,159	282,099	274,459	283,192	282,453	293,401	275,347
	Total Michigan General Primary	307,251	317,129	306,432	338,861	324,367	310,767	335,506	331,616	329,265	337,025	331,594	342,729	326,045
M03S72	Mich Gen Sec Cg1	9,693	9,799	9,601	15,856	16,860	18,827	14,072	17,445	12,544	8,556	12,064	10,485	12,984
M03S40	Mich Gen Sec Cg5 Tou	1,582	1,672	1,646	1,151	771	1,638	1,335	1,586	802	1,691	2,693	2,393	1,580
M03S76	Mich Gen Sec Cg2 Tou	347	402	348	376	375	344	256	403	359	244	297	329	340
M03S74	Mich Gen Sec Cg3 Tou Demand	9,030	8,952	8,537	9,956	10,339	11,265	9,447	11,128	11,492	8,372	8,481	8,375	9,614
	Total Michigan General Secondary	20,652	20,823	20,131	27,339	28,346	32,074	25,110	30,561	25,197	18,864	23,535	21,583	24,518
M03R62	Mich Res Flat Rg1	37,611	33,523	30,239	20,028	16,870	34,285	24,789	28,909	16,619	25,656	33,773	34,120	28,035
M03R27	Mich Res TOU Rg2	2,232	2,154	2,020	1,252	688	1,599	1,121	1,443	763	1,882	1,863	1,843	1,572
	Total Michigan Residential	39,843	35,677	32,259	21,279	17,558	35,884	25,910	30,352	17,383	27,538	35,637	35,963	29,607
	Total Michigan Retail	368,384	374,354	359,615	387,481	370,273	378,726	386,527	392,530	371,846	384,194	391,443	400,910	380,524
	Total Michigan	380,405	382,481	369,055	394,230	375,955	389,546	397,442	404,797	382,219	392,957	400,853	411,580	390,127

Wisconsin Electric Power Company
2003 Class Load Analysis
Native System Peak
Generation Level

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Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average
W03C00	Wisc Company Use	12,519	12,652	10,971	13,621	13,574	15,708	13,571	14,704	15,934	9,995	10,995	11,260	12,959
	Total Wisconsin Company Use	12,519	12,652	10,971	13,621	13,574	15,708	13,571	14,704	15,934	9,995	10,995	11,260	12,959
W03F60	Wisc Wholesale 345KV	42,954	43,971	40,207	35,756	42,421	69,526	65,579	73,646	60,538	45,577	47,021	50,265	51,455
W03F63	Wisc Wholesale 34KV	47,812	46,344	44,180	46,479	44,667	0	0	0	0	0	0	0	19,123
	Total Wisc Wholesale (Excluding WPPI)	90,765	90,315	84,386	82,235	87,088	69,526	65,579	73,646	60,538	45,577	47,021	50,265	70,579
W03W01	Wisc WPPI Transmission	192,033	214,505	215,526	162,411	182,840	220,633	212,462	255,363	224,719	263,534	241,062	229,826	217,909
	Total WPPI Transmission	192,033	214,505	215,526	162,411	182,840	220,633	212,462	255,363	224,719	263,534	241,062	229,826	217,909
	Total Wisc Wholesale (Including WPPI)	282,798	304,820	299,912	244,646	269,928	290,159	278,040	329,009	285,257	309,112	288,083	280,092	288,488
W03L01	Wisc Lighting Rate 01	13,097	15,000	16,802	0	0	0	0	0	0	16,241	14,489	12,614	7,354
W03L05	Wisc Lighting Rate 05	1,453	1,372	1,596	0	0	0	0	0	0	1,603	1,289	1,244	713
W03U05	Wisc Pumping Rate 05	3,073	2,734	2,622	3,187	2,960	6,072	2,469	6,149	3,182	2,714	2,255	2,263	3,307
W03L36	Wisc Lighting Rate 36 (Tou)	17,694	16,696	16,929	0	0	0	0	0	0	17,695	16,994	16,553	8,547
W03L46	Wisc Lighting Rate 46	2,505	2,470	2,531	0	0	0	0	0	0	2,439	2,483	2,416	1,237
W03LRS	Wisc Res Area Lighting	754	882	982	0	0	0	0	0	0	940	869	709	428
W03LSC	Wisc Gen Sec & Gen Pri Area Lighting	4,320	5,098	5,803	0	0	0	0	0	0	5,294	4,496	4,227	2,436
	Total Wisconsin Lighting & Other	42,897	44,251	47,264	3,187	2,960	6,072	2,469	6,149	3,182	46,927	42,877	40,026	24,022
W03P28	Wisc Gen Pri Cp1 8KV Customers	46,290	47,286	44,957	46,264	48,339	54,436	49,761	54,488	55,219	44,079	42,141	42,729	47,999
W03P29	Wisc Gen Pri Cp3 <=13KV	2,918	3,815	2,664	4,895	4,424	3,728	2,435	2,105	3,281	2,359	2,395	1,917	3,078
W03P81	Wisc Gen Pri Cp3a <13KV	1,366	1,337	1,090	2,224	2,240	1,796	1,786	2,092	1,974	1,500	1,771	1,522	1,725
	Total Wisconsin GP Low Voltage	50,574	52,438	48,710	53,383	55,002	59,961	53,982	58,685	60,475	47,937	46,308	46,168	52,802
W03P27	Wisc Gen Pri Cp1 13KV Customers	176,362	173,230	175,282	198,284	213,459	256,707	231,467	263,938	247,003	187,041	174,874	169,345	205,583
W03P26	Wisc Gen Pri Cp1 26KV Customers	551,333	549,641	537,776	589,427	631,211	688,875	604,377	710,141	682,106	562,672	531,759	549,783	599,092
W03P25	Wisc Gen Pri Cp1 34KV Customers	130,933	130,111	127,483	136,945	135,872	134,091	93,421	125,597	121,517	117,628	102,752	107,775	122,010
W03P30	Wisc Gen Pri Cp3 Medium Voltage	15,690	15,829	14,588	28,162	28,861	26,030	14,656	26,065	25,546	16,467	15,184	21,956	20,753
W03P33	Wisc Gen Pri Cp1 34KV-Stora Enso Kimberly	31,735	31,835	31,905	32,740	30,183	31,337	34,433	34,648	28,073	33,367	30,839	30,940	31,836
W03P34	Wisc Gen Pri Cp1 26KV Charter	5,580	5,610	5,759	5,646	5,609	5,696	3,610	5,927	5,945	5,755	4,402	5,625	5,430
W03P20	Wisc Gen Pri Cp2m 26KV Charter	49,872	48,814	53,496	52,551	52,597	53,181	1,170	50,073	49,885	42,874	12,472	51,860	43,237
W03P21	Wisc Gen Pri Cp2m 13KV	7,021	7,588	6,158	8,296	7,675	8,080	7,761	8,219	7,774	7,565	5,476	7,355	7,414
W03P22	Wisc Gen Pri Cp2m 26KV	15,221	15,949	16,176	23,287	23,893	14,106	17,737	22,817	23,518	18,439	22,062	25,102	19,859
W03P82	Wisc Gen Pri Cp3a 13KV	581	601	600	713	632	554	568	595	543	449	641	657	595
W03P83	Wisc Gen Pri Cp3a 26KV	11,555	11,542	9,199	12,693	11,781	11,850	12,161	15,152	16,253	13,635	13,102	13,284	12,684
W03P84	Wisc Gen Pri Cp3a 34KV	8,780	8,341	8,896	9,292	17,110	24,732	14,532	33,315	32,811	31,384	28,297	30,231	20,643
	Total Wisconsin GP Medium Voltage	1,004,663	999,092	987,318	1,098,036	1,158,883	1,255,239	1,035,892	1,296,488	1,240,972	1,037,277	941,860	1,013,914	1,089,136
W03P38	Wisc Gen Pri Cp1 138KV	3,610	2,454	2,325	7,440	5,939	5,104	6,930	6,652	10,474	7,249	7,499	8,150	6,152
W03P39	Wisc Gen Pri Cp2m 138KV	12,997	13,168	12,929	12,903	2,048	13,183	11,643	13,169	13,206	13,135	12,821	13,177	12,032
W03P32	Wisc Gen Pri Cp3 138KV Stora Enso Niagra	24,031	25,751	23,806	26,891	24,454	8,554	27,837	24,991	29,074	30,100	29,311	28,614	25,285
	Total Wisconsin GP High Voltage	40,638	41,373	39,060	47,234	32,441	26,841	46,411	44,813	52,754	50,484	49,631	49,942	43,468
	Total Wisconsin General Primary	1,095,874	1,092,903	1,075,088	1,198,653	1,246,326	1,342,041	1,136,285	1,399,986	1,354,202	1,135,699	1,037,798	1,110,023	1,185,407

Wisconsin Electric Power Company
2003 Class Load Analysis
Native System Peak
Generation Level

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Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average
W03S44	Wisc Gen Sec Cg1 Flat	351,559	311,424	305,939	357,659	340,296	536,218	499,282	521,218	505,950	268,663	270,551	327,808	383,047
W03S42	Wisc Gen Sec Cg6 Small Tou	15,462	15,136	14,985	9,081	5,563	13,858	12,040	14,345	10,484	15,213	12,839	13,759	12,731
W03S34	Wisc Gen Sec Cg2 Flat Demand	153,169	140,327	149,295	177,701	182,161	224,297	194,685	218,951	230,757	154,370	149,198	165,311	178,352
W03S70	Wisc Gen Sec Cg3 Tou Demand	754,449	717,228	720,923	884,897	958,032	1,062,037	968,886	1,122,348	1,144,202	715,592	704,545	767,353	876,708
W03S71	Wisc Gen Sec Cg3c Curt	2,333	2,126	2,083	3,114	3,485	4,263	3,422	2,868	3,254	3,450	1,764	1,802	2,830
W03S80	Wisc Gen Sec Cg3a Coop	3,018	2,949	3,059	3,294	4,001	3,308	3,257	4,096	3,664	3,342	2,491	2,632	3,259
	Total Cg3, Cg3A and Cg3C	759,801	722,303	726,065	891,305	965,517	1,069,608	975,566	1,129,312	1,151,121	722,384	708,800	771,787	882,797
	Total Wisconsin General Secondary	1,279,991	1,189,190	1,196,284	1,435,746	1,493,537	1,843,981	1,681,574	1,883,826	1,898,312	1,160,629	1,141,388	1,278,665	1,456,927
W03R11	Wisc Res Flat Rg1 & Fg1	1,404,242	1,291,727	1,337,038	897,028	658,595	1,795,135	1,658,054	2,069,071	1,200,032	1,093,431	1,441,298	1,469,279	1,359,577
W03R17	Wisc Res Tou Rg2	95,648	90,077	88,073	53,036	30,981	72,942	67,584	84,499	45,024	79,048	81,261	79,833	72,334
	Total Wisconsin Residential	1,499,890	1,381,804	1,425,111	950,064	689,576	1,868,077	1,725,639	2,153,570	1,245,056	1,172,479	1,522,559	1,549,112	1,431,911
	Total Wisconsin Retail	3,918,652	3,708,148	3,743,747	3,587,650	3,432,400	5,060,170	4,545,967	5,443,531	4,500,752	3,515,734	3,744,622	3,977,827	4,098,267
	Total Wisconsin	4,213,969	4,025,620	4,054,630	3,845,916	3,715,901	5,366,038	4,837,579	5,787,244	4,801,942	3,834,840	4,043,700	4,269,179	4,399,713
	Total Native System from This Report	4,402,341	4,193,596	4,208,159	4,077,736	3,909,017	5,534,950	5,022,559	5,936,678	4,959,442	3,964,263	4,203,491	4,450,933	4,571,930
	Native System Peak	4,383,000	4,304,000	4,188,000	4,001,000	3,794,000	5,466,000	5,044,000	5,983,000	4,942,000	4,011,000	4,208,000	4,487,000	4,567,583
	Date of Native System Peak	1/27/2003	2/12/2003	3/3/2003	4/7/2003	5/13/2003	6/25/2003	7/3/2003	8/21/2003	9/8/2003	10/8/2003	11/24/2003	12/16/2003	
	Hour of Native System Peak	18:00	19:00	19:00	12:00	12:00	15:00	15:00	15:00	15:00	20:00	18:00	18:00	
	Variation from Native System Peak	-0.44%	2.57%	-0.48%	-1.92%	-3.03%	-1.26%	0.43%	0.77%	-0.35%	1.17%	0.11%	0.80%	-0.10%

Wisconsin Electric Power Company
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Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
M03C00	Mich Company Use	166	168	143	175	170	114	113	111	112	105	118	164	1,659
	Total Michigan Company Use	166	168	143	175	170	114	113	111	112	105	118	164	1,659
M03F60	Mich Wholesale Rate 60 <69KV	5,069	4,177	3,841	3,005	2,839	3,276	5,096	4,924	4,492	4,506	4,327	5,240	50,790
	Total Michigan Wholesale	5,069	4,177	3,841	3,005	2,839	3,276	5,096	4,924	4,492	4,506	4,327	5,240	50,790
M03L88	Mich Lighting Rate 88	179	159	185	166	177	184	155	177	168	182	163	179	2,074
M03L89	Mich Lighting Rate 89													
M03U89	Mich Pumping Rate 89	1	1	1	0	0	0	0	1	0	0	1	1	9
M03LRS	Mich Residential Area Lighting	32	32	34	33	35	34	33	37	25	37	33	31	394
M03LSC	Mich Secondary Area Lighting	46	48	39	39	56	52	54	54	38	51	60	49	586
	Total Michigan Lighting & Other	258	239	258	239	268	270	242	268	232	270	256	260	3,062
M03P22	Mich Gen Pri CP1 Rate <69KV	4,509	4,107	4,632	4,367	4,511	4,599	4,721	4,707	4,682	4,777	1,753	1,942	49,305
M03P26	Mich Gen Pri Rate 26 Champion Firm	21,470	19,755	22,179	22,048	21,408	22,559	24,493	25,896	23,010	23,327	22,330	20,880	269,355
M03P46	Mich Gen Pri Rate 26 Champion Curt	928	853	999	778	534	802	813	1,023	564	982	798	911	9,982
M03P42	Mich Gen Pri Curt Rate <26KV	4,116	3,786	4,110	3,746	3,923	3,775	3,960	4,027	3,943	4,064	6,165	5,432	51,047
M03P27	Mich White Pine Mine 69 KV	3,230	2,954	3,312	3,132	2,150	1,690	2,684	2,779	2,918	3,163	3,019	3,203	34,232
M03P25	Mich Gen Pri Rate 25 Mines	192,817	176,891	194,253	201,064	112,659	124,376	205,806	211,094	192,578	207,995	206,779	183,629	2,209,941
	Total Michigan General Primary	227,070	208,345	229,485	235,134	145,184	157,800	242,475	249,525	227,695	244,309	240,844	215,996	2,623,863
M03S72	Mich Gen Sec Cg1	5,965	5,929	6,061	5,539	5,964	5,868	6,226	6,411	4,494	5,425	6,739	6,305	70,926
M03S40	Mich Gen Sec Cg5 Tou	779	736	707	662	737	637	674	701	461	657	1,181	1,258	9,190
M03S76	Mich Gen Sec Cg2 Tou	202	215	207	180	180	150	147	202	158	145	161	191	2,140
M03S74	Mich Gen Sec Cg3 Tou Demand	5,267	4,803	5,075	4,775	4,956	4,980	5,475	5,614	5,102	4,917	4,588	4,889	60,442
	Total Michigan General Secondary	12,213	11,683	12,050	11,157	11,836	11,636	12,522	12,928	10,215	11,143	12,668	12,645	142,697
M03R62	Mich Res Flat Rg1	16,188	13,833	13,356	11,724	11,887	12,634	12,332	14,243	9,236	13,288	13,489	15,519	157,729
M03R27	Mich Res TOU Rg2	1,100	948	868	720	657	622	566	638	439	731	817	969	9,074
	Total Michigan Residential	17,288	14,781	14,224	12,444	12,544	13,255	12,898	14,881	9,675	14,019	14,306	16,488	166,803
	Total Michigan Retail	256,830	235,049	256,018	258,974	169,833	182,961	268,137	277,602	247,817	269,742	268,075	245,388	2,936,425
	Total Michigan	262,065	239,393	260,002	262,154	172,842	186,351	273,346	282,637	252,421	274,353	272,520	250,792	2,988,875

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Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
W03C00	Wisc Company Use	7,260	6,996	6,671	6,129	5,939	6,484	6,820	6,566	6,475	5,974	5,884	6,382	77,579
	Total Wisconsin Company Use	7,260	6,996	6,671	6,129	5,939	6,484	6,820	6,566	6,475	5,974	5,884	6,382	77,579
W03F60	Wisc Wholesale 345KV	23,751	21,477	22,113	21,074	22,325	25,773	30,466	31,510	25,865	24,992	24,850	25,841	300,036
W03F63	Wisc Wholesale 34KV	29,928	26,867	29,238	26,803	26,805								139,640
	Total Wisc Wholesale (Excluding WPPI)	53,679	48,344	51,351	47,877	49,130	25,773	30,466	31,510	25,865	24,992	24,850	25,841	439,677
W03W01	Wisc WPPI Transmission	104,691	110,480	107,125	86,605	88,837	90,942	117,658	137,746	118,217	120,380	123,647	134,045	1,340,373
	Total WPPI Transmission	104,691	110,480	107,125	86,605	88,837	90,942	117,658	137,746	118,217	120,380	123,647	134,045	1,340,373
	Total Wisc Wholesale (Including WPPI)	158,370	158,824	158,476	134,482	137,967	116,715	148,124	169,256	144,082	145,372	148,497	159,886	1,780,050
W03L01	Wisc Lighting Rate 01	5,554	5,193	5,719	5,484	5,691	5,722	4,910	5,907	4,848	5,984	5,719	5,398	66,129
W03L05	Wisc Lighting Rate 05	629	485	555	511	523	608	671	787	617	603	520	544	7,054
W03U05	Wisc Pumping Rate 05	1,622	1,393	1,558	1,477	1,564	1,653	1,495	1,934	1,479	1,622	1,364	1,458	18,618
W03L36	Wisc Lighting Rate 36 (Tou)	7,504	5,780	5,762	5,279	5,029	4,624	3,622	4,668	4,665	6,520	6,707	7,083	67,244
W03L46	Wisc Lighting Rate 46	1,063	855	861	741	700	690	581	746	679	899	980	1,034	9,828
W03LRS	Wisc Res Area Lighting	318	304	333	318	352	311	342	366	261	345	342	302	3,894
W03LSC	Wisc Gen Sec & Gen Pri Area Lighting	1,832	1,765	1,975	1,806	1,842	1,786	1,908	1,925	1,802	1,951	1,774	1,809	22,174
	Total Wisconsin Lighting & Other	18,524	15,775	16,764	15,616	15,700	15,394	13,529	16,332	14,351	17,924	17,405	17,628	194,941
W03P28	Wisc Gen Pri Cp1 8KV Customers	28,736	26,568	27,910	23,651	24,643	25,167	26,644	27,584	25,433	25,271	23,063	23,985	308,655
W03P29	Wisc Gen Pri Cp3 <=13KV	2,658	2,447	2,499	2,470	2,111	2,210	2,066	2,005	2,068	2,031	1,613	1,838	26,016
W03P81	Wisc Gen Pri Cp3a <13KV	976	926	988	1,025	1,084	1,041	1,131	1,129	1,070	1,092	1,004	1,052	12,520
	Total Wisconsin GP Low Voltage	32,370	29,942	31,397	27,146	27,838	28,418	29,842	30,718	28,571	28,395	25,680	26,875	347,191
W03P27	Wisc Gen Pri Cp1 13KV Customers	113,166	104,422	118,442	110,150	114,290	120,308	134,692	139,786	124,184	117,131	106,218	107,387	1,410,176
W03P26	Wisc Gen Pri Cp1 26KV Customers	347,276	320,258	348,451	339,675	350,419	361,025	382,264	394,210	364,555	359,010	320,648	326,005	4,213,795
W03P25	Wisc Gen Pri Cp1 34KV Customers	86,421	77,976	85,917	82,184	85,082	77,554	78,982	76,394	73,550	75,667	66,404	63,448	929,580
W03P30	Wisc Gen Pri Cp3 Medium Voltage	15,733	13,826	14,982	14,732	14,700	14,340	13,737	16,648	14,808	14,197	13,109	13,538	174,351
W03P33	Wisc Gen Pri Cp1 34KV-Stora Enso Kimberly	23,454	21,264	23,304	21,266	22,999	23,358	24,978	25,594	23,596	22,252	21,141	19,439	272,646
W03P34	Wisc Gen Pri Cp1 26KV Charter	3,569	3,490	4,008	3,531	3,378	3,776	3,370	3,976	3,851	3,980	3,581	3,730	44,241
W03P20	Wisc Gen Pri Cp2m 26KV Charter	21,844	25,321	30,662	21,124	19,571	27,749	18,007	28,890	27,718	28,943	24,446	26,234	300,509
W03P21	Wisc Gen Pri Cp2m 13KV	4,055	3,953	3,438	3,856	3,662	4,104	4,705	5,086	4,659	4,710	3,945	4,054	50,227
W03P22	Wisc Gen Pri Cp2m 26KV	13,363	11,614	12,360	13,322	13,620	12,898	13,652	13,575	13,227	16,111	14,451	13,388	161,579
W03P82	Wisc Gen Pri Cp3a 13KV	323	304	312	283	266	243	251	278	270	311	279	319	3,441
W03P83	Wisc Gen Pri Cp3a 26KV	6,978	6,032	6,464	6,664	6,566	6,460	6,981	8,509	7,933	8,284	7,411	7,660	85,941
W03P84	Wisc Gen Pri Cp3a 34KV	5,695	5,259	5,872	5,474	8,861	15,580	16,298	21,588	20,380	20,505	17,552	17,290	160,354
	Total Wisconsin GP Medium Voltage	641,878	593,720	654,212	622,261	643,413	667,394	697,917	734,534	678,730	671,103	599,185	602,493	7,806,839
W03P38	Wisc Gen Pri Cp1 138KV	2,018	1,687	1,687	4,861	5,432	4,539	5,013	5,351	5,242	5,702	5,705	5,716	52,952
W03P39	Wisc Gen Pri Cp2m 138KV	9,242	8,461	9,361	9,047	8,515	9,059	9,198	9,027	9,175	9,555	9,136	9,439	109,215
W03P32	Wisc Gen Pri Cp3 138KV Stora Enso Niagra	20,937	18,388	18,908	18,533	15,198	20,624	21,320	21,382	22,849	23,292	20,968	21,406	243,805
	Total Wisconsin GP High Voltage	32,197	28,536	29,956	32,441	29,145	34,222	35,531	35,760	37,265	38,549	35,809	36,562	405,972
	Total Wisconsin General Primary	706,445	652,197	715,564	681,848	700,396	730,033	763,290	801,012	744,566	738,046	660,674	665,930	8,560,002

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Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
W03S44	Wisc Gen Sec Cg1 Flat	182,034	162,278	172,786	149,928	151,929	160,396	187,812	187,148	166,429	152,331	140,150	170,331	1,983,552
W03S42	Wisc Gen Sec Cg6 Small Tou	7,998	6,993	6,737	5,447	5,559	5,630	6,317	6,601	6,307	6,188	5,883	7,568	77,227
W03S34	Wisc Gen Sec Cg2 Flat Demand	85,534	77,134	84,859	76,526	77,993	80,987	84,340	90,178	90,060	86,784	77,453	89,623	1,001,472
W03S70	Wisc Gen Sec Cg3 Tou Demand	437,465	396,589	437,478	396,796	419,086	438,133	488,029	501,264	464,712	432,734	376,956	434,927	5,224,170
W03S71	Wisc Gen Sec Cg3c Curt	1,593	1,483	1,672	1,727	1,806	1,937	2,042	1,916	1,796	1,924	1,582	1,388	20,865
W03S80	Wisc Gen Sec Cg3a Coop	1,671	1,503	1,592	1,625	1,785	1,828	1,886	1,876	1,886	1,758	1,329	1,391	20,130
	Total Cg3, Cg3A and Cg3C	440,729	399,575	440,742	400,148	422,678	441,899	491,957	505,057	468,394	436,415	379,867	437,705	5,265,166
	Total Wisconsin General Secondary	716,296	645,980	705,124	632,048	658,159	688,912	770,426	788,984	731,189	681,719	603,352	705,228	8,327,416
W03R11	Wisc Res Flat Rg1 & Fg1	689,343	573,851	579,890	505,969	536,494	560,912	715,693	797,090	527,180	565,886	597,081	667,771	7,317,161
W03R17	Wisc Res Tou Rg2	49,263	41,481	39,466	31,709	30,856	29,539	35,344	38,754	26,999	32,049	37,071	43,772	436,302
	Total Wisconsin Residential	738,605	615,332	619,355	537,678	567,350	590,451	751,038	835,844	554,178	597,935	634,153	711,543	7,753,463
	Total Wisconsin Retail	2,179,870	1,929,284	2,056,808	1,867,190	1,941,606	2,024,790	2,298,283	2,442,171	2,044,285	2,035,623	1,915,584	2,100,329	24,835,822
	Total Wisconsin	2,345,500	2,095,103	2,221,955	2,007,801	2,085,512	2,147,988	2,453,226	2,617,993	2,194,841	2,186,969	2,069,965	2,266,597	26,693,451
	Total System	2,607,564	2,334,496	2,481,957	2,269,955	2,258,354	2,334,339	2,726,572	2,900,630	2,447,263	2,461,322	2,342,485	2,517,389	29,682,325

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Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
M03C00	Mich Company Use	188	190	161	196	192	129	127	125	127	118	133	185	1,870
	Total Michigan Company Use	188	190	161	196	192	129	127	125	127	118	133	185	1,870
M03F60	Mich Wholesale Rate 60 <69KV	5,576	4,595	4,211	3,281	3,116	3,596	5,563	5,381	4,925	4,946	4,734	5,752	55,677
	Total Michigan Wholesale	5,576	4,595	4,211	3,281	3,116	3,596	5,563	5,381	4,925	4,946	4,734	5,752	55,677
M03L88	Mich Lighting Rate 88	203	180	208	187	200	207	174	198	190	205	183	202	2,337
M03L89	Mich Lighting Rate 89	0	0	0	0	0	0	0	0	0	0	0	0	0
M03U89	Mich Pumping Rate 89	2	1	1	1	0	1	1	1	0	0	1	1	10
M03LRS	Mich Residential Area Lighting	36	36	38	37	39	38	37	42	28	42	37	35	444
M03LSC	Mich Secondary Area Lighting	52	54	43	44	63	58	60	61	43	58	68	55	660
	Total Michigan Lighting & Other	292	271	291	269	302	304	272	302	262	305	289	293	3,450
M03P22	Mich Gen Pri CP1 Rate <69KV	4,960	4,518	5,079	4,767	4,951	5,048	5,154	5,144	5,134	5,244	1,918	2,131	54,048
M03P26	Mich Gen Pri Rate 26 Champion Firm	21,908	20,158	22,632	22,498	21,845	23,020	24,992	26,424	23,480	23,803	22,786	21,306	274,852
M03P46	Mich Gen Pri Rate 26 Champion Curt	947	870	1,019	794	545	818	829	1,043	575	1,002	814	929	10,186
M03P42	Mich Gen Pri Curt Rate <26KV	4,528	4,165	4,506	4,089	4,306	4,143	4,323	4,401	4,324	4,461	6,745	5,963	55,956
M03P27	Mich White Pine Mine 69 KV	3,343	3,058	3,428	3,242	2,225	1,749	2,778	2,876	3,020	3,275	3,125	3,315	35,437
M03P25	Mich Gen Pri Rate 25 Mines	197,559	181,241	199,030	206,008	115,429	127,434	210,866	216,285	197,314	213,110	211,864	188,144	2,264,283
	Total Michigan General Primary	233,246	214,010	235,695	241,398	149,302	162,213	248,943	256,174	233,847	250,895	247,252	221,789	2,694,763
M03S72	Mich Gen Sec Cg1	6,748	6,707	6,825	6,216	6,731	6,623	6,988	7,204	5,067	6,116	7,580	7,109	79,913
M03S40	Mich Gen Sec Cg5 Tou	882	832	796	743	831	719	757	788	520	740	1,328	1,419	10,354
M03S76	Mich Gen Sec Cg2 Tou	229	244	234	203	203	169	165	227	179	163	181	216	2,411
M03S74	Mich Gen Sec Cg3 Tou Demand	5,958	5,433	5,715	5,360	5,594	5,621	6,144	6,308	5,752	5,544	5,161	5,512	68,102
	Total Michigan General Secondary	13,816	13,216	13,570	12,522	13,359	13,133	14,054	14,526	11,516	12,563	14,249	14,255	160,781
M03R62	Mich Res Flat Rg1	18,312	15,648	15,041	13,158	13,417	14,259	13,841	16,003	10,413	14,981	15,174	17,496	177,742
M03R27	Mich Res TOU Rg2	1,244	1,072	977	808	742	702	635	717	495	824	919	1,092	10,228
	Total Michigan Residential	19,556	16,720	16,018	13,966	14,159	14,961	14,475	16,720	10,907	15,805	16,093	18,588	187,969
	Total Michigan Retail	266,910	244,217	265,574	268,155	177,122	190,611	277,744	287,722	256,532	279,568	277,883	254,925	3,046,963
	Total Michigan	272,674	249,002	269,947	271,632	180,431	194,335	283,434	293,227	261,584	284,632	282,750	260,863	3,104,510

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Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
W03C00	Wisc Company Use	7,823	7,539	7,181	6,597	6,407	7,002	7,364	7,091	6,977	6,430	6,334	6,877	83,623
	Total Wisconsin Company Use	7,823	7,539	7,181	6,597	6,407	7,002	7,364	7,091	6,977	6,430	6,334	6,877	83,623
W03F60	Wisc Wholesale 345KV	23,991	21,694	22,337	21,287	22,551	26,033	30,773	31,828	26,126	25,244	25,101	26,102	303,067
W03F63	Wisc Wholesale 34KV	30,917	27,726	30,173	27,660	27,663	0	0	0	0	0	0	0	144,140
	Total Wisc Wholesale (Excluding WPPI)	54,908	49,420	52,510	48,947	50,213	26,033	30,773	31,828	26,126	25,244	25,101	26,102	447,206
W03W01	Wisc WPPI Transmission	106,937	112,850	109,423	88,463	90,743	92,893	120,182	140,701	120,753	122,962	126,299	136,920	1,369,124
	Total WPPI Transmission	106,937	112,850	109,423	88,463	90,743	92,893	120,182	140,701	120,753	122,962	126,299	136,920	1,369,124
	Total Wisc Wholesale (Including WPPI)	161,845	162,270	161,933	137,410	140,956	118,926	150,955	172,528	146,879	148,206	151,400	163,023	1,816,330
W03L01	Wisc Lighting Rate 01	5,985	5,596	6,156	5,903	6,139	6,179	5,302	6,379	5,225	6,442	6,156	5,817	71,279
W03L05	Wisc Lighting Rate 05	664	512	585	539	552	642	709	831	651	636	548	574	7,443
W03U05	Wisc Pumping Rate 05	1,712	1,470	1,642	1,557	1,650	1,747	1,580	2,044	1,560	1,710	1,438	1,537	19,646
W03L36	Wisc Lighting Rate 36 (Tou)	8,087	6,228	6,203	5,683	5,425	4,994	3,911	5,041	5,027	7,018	7,220	7,633	72,469
W03L46	Wisc Lighting Rate 46	1,145	921	927	797	755	745	627	805	732	967	1,055	1,114	10,592
W03LRS	Wisc Res Area Lighting	345	329	360	344	381	336	370	396	282	373	369	327	4,211
W03LSC	Wisc Gen Sec & Gen Pri Area Lighting	1,974	1,902	2,126	1,944	1,987	1,929	2,061	2,079	1,942	2,100	1,910	1,949	23,901
	Total Wisconsin Lighting & Other	19,912	16,957	17,999	16,766	16,889	16,572	14,561	17,574	15,419	19,245	18,695	18,952	209,542
W03P28	Wisc Gen Pri Cp1 8KV Customers	30,505	28,174	29,597	25,054	26,161	26,745	28,315	29,314	26,970	26,799	24,457	25,434	327,524
W03P29	Wisc Gen Pri Cp3 <=13KV	2,757	2,538	2,592	2,562	2,190	2,293	2,144	2,080	2,145	2,104	1,672	1,905	26,981
W03P81	Wisc Gen Pri Cp3a <13KV	1,036	982	1,048	1,085	1,151	1,107	1,202	1,200	1,134	1,158	1,065	1,116	13,285
	Total Wisconsin GP Low Voltage	34,298	31,695	33,237	28,702	29,501	30,144	31,660	32,593	30,250	30,062	27,194	28,455	367,791
W03P27	Wisc Gen Pri Cp1 13KV Customers	117,392	108,322	122,866	114,264	118,558	124,800	139,722	145,006	128,821	121,379	110,071	111,282	1,462,482
W03P26	Wisc Gen Pri Cp1 26KV Customers	358,756	330,503	359,598	350,542	361,629	372,959	394,900	407,241	376,607	370,495	330,906	336,435	4,350,573
W03P25	Wisc Gen Pri Cp1 34KV Customers	89,094	80,388	88,483	84,638	87,623	79,870	81,341	78,676	75,747	77,927	68,387	65,343	957,517
W03P30	Wisc Gen Pri Cp3 Medium Voltage	16,253	14,269	15,461	15,204	15,171	14,814	14,191	17,199	15,297	14,651	13,529	13,971	180,009
W03P33	Wisc Gen Pri Cp1 34KV-Stora Enso Kimberly	24,180	21,921	24,000	21,901	23,686	24,056	25,724	26,359	24,301	22,917	21,773	20,019	280,836
W03P34	Wisc Gen Pri Cp1 26KV Charter	3,686	3,601	4,136	3,644	3,486	3,901	3,482	4,108	3,978	4,108	3,696	3,850	45,676
W03P20	Wisc Gen Pri Cp2m 26KV Charter	22,566	26,131	31,643	21,799	20,197	28,666	18,602	29,845	28,634	29,869	25,228	27,074	310,255
W03P21	Wisc Gen Pri Cp2m 13KV	4,207	4,101	3,566	4,000	3,798	4,257	4,881	5,276	4,833	4,881	4,088	4,201	52,089
W03P22	Wisc Gen Pri Cp2m 26KV	13,805	11,985	12,755	13,748	14,056	13,324	14,103	14,023	13,664	16,626	14,913	13,816	166,819
W03P82	Wisc Gen Pri Cp3a 13KV	335	316	323	294	276	252	261	289	280	323	289	331	3,568
W03P83	Wisc Gen Pri Cp3a 26KV	7,208	6,225	6,670	6,877	6,776	6,673	7,212	8,790	8,195	8,549	7,648	7,905	88,730
W03P84	Wisc Gen Pri Cp3a 34KV	5,871	5,422	6,048	5,638	9,125	16,045	16,785	22,233	20,989	21,118	18,076	17,806	165,155
	Total Wisconsin GP Medium Voltage	663,355	613,184	675,550	642,549	664,382	689,619	721,203	759,044	701,346	692,843	618,603	622,033	8,063,710
W03P38	Wisc Gen Pri Cp1 138KV	2,059	1,721	1,722	4,960	5,542	4,631	5,115	5,460	5,349	5,819	5,821	5,833	54,033
W03P39	Wisc Gen Pri Cp2m 138KV	9,430	8,633	9,552	9,231	8,689	9,244	9,386	9,211	9,362	9,750	9,323	9,632	111,444
W03P32	Wisc Gen Pri Cp3 138KV Stora Enso Niagra	21,365	18,764	19,294	18,911	15,508	21,045	21,755	21,818	23,315	23,767	21,395	21,843	248,780
	Total Wisconsin GP High Voltage	32,854	29,118	30,567	33,103	29,740	34,920	36,256	36,490	38,026	39,335	36,539	37,308	414,257
	Total Wisconsin General Primary	730,507	673,998	739,355	704,353	723,622	754,683	789,120	828,127	769,621	762,240	682,336	687,796	8,845,758

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Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
W03S44	Wisc Gen Sec Cg1 Flat	196,158	174,869	185,991	161,386	163,893	173,213	202,821	202,104	179,341	163,973	150,861	183,547	2,138,157
W03S42	Wisc Gen Sec Cg6 Small Tou	8,619	7,536	7,251	5,863	5,997	6,080	6,822	7,128	6,796	6,661	6,332	8,156	83,241
W03S34	Wisc Gen Sec Cg2 Flat Demand	92,170	83,119	91,345	82,375	84,135	87,458	91,080	97,384	97,047	93,417	83,373	96,576	1,079,480
W03S70	Wisc Gen Sec Cg3 Tou Demand	471,406	427,359	470,913	427,122	452,089	473,146	527,029	541,322	500,767	465,806	405,765	468,671	5,631,396
W03S71	Wisc Gen Sec Cg3c Curt	1,716	1,598	1,800	1,859	1,948	2,092	2,205	2,070	1,935	2,071	1,703	1,495	22,492
W03S80	Wisc Gen Sec Cg3a Coop	1,801	1,620	1,714	1,749	1,925	1,975	2,037	2,026	2,033	1,892	1,431	1,498	21,700
	Total Cg3, Cg3A and Cg3C	474,924	430,577	474,426	430,729	455,963	477,213	531,271	545,418	504,735	469,769	408,899	471,665	5,675,588
	Total Wisconsin General Secondary	771,870	696,099	759,014	680,353	709,988	743,965	831,994	852,034	787,920	733,820	649,464	759,943	8,976,465
W03R11	Wisc Res Flat Rg1 & Fg1	746,042	620,379	626,231	546,403	580,622	607,706	775,399	863,586	569,924	611,108	645,493	721,915	7,914,808
W03R17	Wisc Res Tou Rg2	53,315	44,844	42,620	34,243	33,394	32,003	38,293	41,987	29,188	34,610	40,077	47,321	471,894
	Total Wisconsin Residential	799,356	665,223	668,850	580,646	614,016	639,709	813,692	905,573	599,112	645,718	685,570	769,236	8,386,702
	Total Wisconsin Retail	2,321,646	2,052,277	2,185,218	1,982,119	2,064,515	2,154,928	2,449,367	2,603,308	2,172,072	2,161,024	2,036,066	2,235,927	26,418,467
	Total Wisconsin	2,491,315	2,222,086	2,354,332	2,126,126	2,211,877	2,280,856	2,607,686	2,782,928	2,325,927	2,315,660	2,193,800	2,405,826	28,318,419
	Total System Demand Obligation	2,763,989	2,471,088	2,624,278	2,397,758	2,392,308	2,475,191	2,891,120	3,076,155	2,587,511	2,600,292	2,476,550	2,666,689	31,422,930
	Total Native System from This Report	2,657,052	2,358,238	2,514,856	2,309,295	2,301,565	2,382,298	2,770,939	2,935,454	2,466,759	2,477,330	2,350,250	2,529,769	30,053,806
	Native System	2,628,768	2,363,295	2,485,672	2,312,583	2,234,488	2,346,484	2,761,596	2,925,982	2,487,853	2,423,749	2,355,888	2,530,373	29,856,731
	Variation form Native System	-1.08%	0.21%	-1.17%	0.14%	-3.00%	-1.53%	-0.34%	-0.32%	0.85%	-2.21%	0.24%	0.02%	-0.66%

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Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Maximum	
M04C00	Mich Company Use	393	344	297	312	284	291	277	257	289	277	304	359	393	
	Total Michigan Company Use	393	344	297	312	284	291	277	257	289	277	304	359	393	
M04F60	Mich Wholesale Rate 60 <69KV	10,474	9,720	8,799	9,134	7,068	8,558	9,848	9,915	10,168	9,429	10,245	11,496	11,496	
	Total Michigan Wholesale	10,474	9,720	8,799	9,134	7,068	8,558	9,848	9,915	10,168	9,429	10,245	11,496	11,496	
M04L88	Mich Lighting Rate 88	406	498	481	606	722	738	742	623	538	484	459	408	738	
M04L89	Mich Lighting Rate 89	2	3	3	4	4	4	4	4	2	1	3	2	4	
M04U89	Mich Pumping Rate 89	4	6	5	2	2	3	9	10	2	4	2	4	3	
M04LRS	Mich Residential Area Lighting	81	85	95	122	126	154	132	114	104	87	81	82	154	
M04LSC	Mich Secondary Area Lighting	118	123	161	177	210	238	213	178	172	137	143	126	238	
	Total Michigan Lighting & Other	611	716	744	910	1,064	1,137	1,100	928	817	714	688	622	1,137	
M04P22	Mich Gen Pri CP1 Rate <69KV	1,895	1,766	1,598	2,345	1,673	2,228	4,086	2,610	2,300	2,245	3,077	1,859	1,673	10123
M04P26	Mich Gen Pri Rate 26 Champion Firm	33,409	31,049	29,449	32,214	33,547	32,916	44,671	36,262	50,699	33,888	30,031	31,945	33,547	
M04P46	Mich Gen Pri Rate 26 Champion Curt	1,577	1,437	1,523	1,773	0	1,787	770	1,827	0	1,675	0	1,086	0	
M04P42	Mich Gen Pri Curt Rate <26KV	8,105	8,598	8,631	10,970	8,450	10,992	10,237	9,586	7,954	8,310	10,398	8,292	8,450	
M04P27	Mich White Pine Mine 69 KV	4,607	4,460	4,700	4,367	4,388	0	0	3,042	3,224	4,089	4,052	4,380	4,388	
M04P25	Mich Gen Pri Rate 25 Mines	281,962	294,341	296,597	309,264	320,434	304,218	284,334	294,628	292,337	303,451	312,112	311,335	320,434	
	Total Michigan General Primary	331,555	341,650	342,498	360,933	368,492	352,141	344,098	347,955	356,514	353,658	359,668	358,897	368,492	
M04S72	Mich Gen Sec Cg1	18,535	16,227	18,459	15,700	17,467	18,609	17,146	17,144	17,585	16,184	20,653	19,435	20,653	
M04S40	Mich Gen Sec Cg5 Tou	1,516	1,086	1,385	711	888	1,462	1,276	1,265	1,457	997	1,255	1,683	1,255	
M04S76	Mich Gen Sec Cg2 Tou	428	356	387	384	373	392	390	346	380	327	400	384	400	
M04S74	Mich Gen Sec Cg3 Tou Demand	10,257	9,518	9,204	9,802	10,585	11,358	11,286	10,801	11,457	9,723	10,088	10,147	10,088	
	Total Michigan General Secondary	30,737	27,187	29,435	26,597	29,314	31,821	30,097	29,555	30,879	27,231	32,396	31,648	32,396	
M04R62	Mich Res Flat Rg1	38,525	31,683	28,646	27,120	26,996	32,556	28,347	27,807	27,665	27,153	34,890	42,357	42,357	
M04R27	Mich Res TOU Rg2	1,863	2,025	1,802	1,579	967	1,513	1,390	1,479	1,556	1,128	1,726	2,858	2,858	
	Total Michigan Residential	40,388	33,707	30,448	28,699	27,963	34,069	29,737	29,286	29,221	28,281	36,617	45,215	45,215	
	Total Michigan Retail	403,290	403,260	403,126	417,139	426,833	419,168	405,032	407,725	417,431	409,884	429,369	436,383	447,240	
	Total Michigan	414,157	413,324	412,223	426,585	434,185	428,016	415,156	417,897	427,888	419,589	439,918	448,238	459,128	

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Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Maximum
W04C00	Wisc Company Use	15,859	15,980	12,398	15,113	16,128	14,717	14,273	13,986	13,933	12,761	14,326	15,283	16,128
	Total Wisconsin Company Use	15,859	15,980	12,398	15,113	16,128	14,717	14,273	13,986	13,933	12,761	14,326	15,283	16,128
W04F60	Wisc Wholesale 345KV	50,158	34,226	16,557	22,130	30,581	73,290	68,383	69,134	68,459	46,595	49,912	52,375	46,595
W04F63	Wisc Wholesale 34KV	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Wisc Wholesale (Excluding WPPI)	50,158	34,226	16,557	22,130	30,581	73,290	68,383	69,134	68,459	46,595	49,912	52,375	46,595
W04W01	Wisc WPPI Transmission	371,229	300,668	309,884	286,390	313,047	304,839	314,027	278,270	289,486	482,804	332,430	289,433	482,804
	Total WPPI Transmission	371,229	300,668	309,884	286,390	313,047	304,839	314,027	278,270	289,486	482,804	332,430	289,433	482,804
	Total Wisc Wholesale (Including WPPI)	421,387	334,894	326,442	308,520	343,628	378,129	382,410	347,404	357,946	529,399	382,342	341,808	529,399
W04L01	Wisc Lighting Rate 01	13,606	14,527	16,784	18,918	19,582	28,142	21,250	20,380	17,455	15,489	14,006	13,312	15,489
W04L05	Wisc Lighting Rate 05	1,442	1,428	1,746	1,759	1,684	2,670	2,519	2,475	2,116	1,523	1,237	1,336	1,523
W03U05	Mich Pumping Rate 89	4,319	4,493	5,245	4,029	3,620	4,391	3,168	4,060	3,747	3,462	3,896	4,097	3,462
W04L36	Wisc Lighting Rate 36 (Tou)	18,227	16,968	17,161	18,290	16,122	20,541	17,364	18,203	16,311	16,203	16,552	17,858	16,203
W04L46	Wisc Lighting Rate 46	2,545	2,287	2,347	2,613	2,339	3,071	2,440	2,518	2,298	2,104	2,260	2,584	2,104
W04LRS	Wisc Res Area Lighting	799	844	953	1,129	1,252	1,450	1,339	1,143	1,115	816	790	766	816
W04LSC	Wisc Gen Sec & Gen Pri Area Lighting	4,401	5,009	5,861	6,651	7,120	8,264	8,020	6,808	6,149	5,299	4,536	4,235	5,299
	Total Wisconsin Lighting & Other	45,339	45,556	50,099	53,389	51,719	68,531	56,101	55,587	49,191	44,895	43,276	44,186	68,531
W04P28	Wisc Gen Pri Cp1 8KV Customers	46,664	45,483	43,959	46,336	52,455	53,795	50,560	50,896	54,991	49,031	47,428	47,229	54,991
W04P81	Wisc Gen Pri Cp3a <13KV	2,123	2,050	2,018	2,176	1,886	2,106	2,121	2,036	2,215	2,225	1,781	2,003	2,215
	Total Wisconsin GP Low Voltage	48,787	47,533	45,976	48,512	54,341	55,900	52,682	52,931	57,205	51,256	49,209	49,231	57,205
W04P27	Wisc Gen Pri Cp1 13KV Customers	202,833	200,539	214,942	212,388	240,108	250,289	254,339	243,474	251,135	220,322	204,973	196,062	251,135
W04P26	Wisc Gen Pri Cp1 26KV Customers	597,931	598,503	597,397	613,534	670,079	697,606	706,396	689,650	704,850	632,848	605,353	595,192	704,850
W04P25	Wisc Gen Pri Cp1 34KV Customers	114,223	114,907	113,398	102,022	107,880	112,690	110,322	109,531	108,984	101,384	103,452	100,038	108,984
W04P34	Wisc Gen Pri Cp1 26KV Charter	5,489	5,280	5,312	5,465	5,133	5,640	5,867	5,814	5,840	5,702	5,742	5,538	5,840
W04P33	Wisc Gen Pri Cp1 34KV-Stora Enso Kimberly	27,581	25,484	29,070	33,054	33,091	19,342	31,469	34,561	35,963	35,093	30,283	32,754	35,963
W04P21	Wisc Gen Pri Cp2m 13KV	3,923	5,223	3,477	4,815	2,747	3,887	5,882	6,046	5,983	6,214	5,702	3,346	5,983
W04P22	Wisc Gen Pri Cp2m 26KV	31,849	37,302	37,916	39,129	36,963	38,576	39,662	38,177	42,291	44,012	41,893	38,219	42,291
W04P20	Wisc Gen Pri Cp2m 26KV Charter	56,458	55,231	57,966	52,295	61,166	57,744	47,767	56,918	43,711	56,961	51,167	60,397	43,711
W04P29	Wisc Gen Pri Cp3 13KV	2,853	2,805	3,356	2,604	2,854	2,787	3,005	2,901	2,864	2,900	3,175	3,264	2,864
W04P30	Wisc Gen Pri Cp3 26KV	34,974	27,954	34,507	36,821	33,357	36,141	42,521	35,969	37,911	39,026	40,376	39,928	37,911
W04P40	Wisc Gen Pri Cp3 34KV	0	0	6,587	15,487	19,286	7,415	6,448	7,897	6,333	4,874	7,840	7,553	6,333
W04P82	Wisc Gen Pri Cp3a 13KV	667	676	570	563	611	583	622	665	519	600	697	732	519
W04P83	Wisc Gen Pri Cp3a 26KV	13,918	14,906	14,485	15,108	16,523	15,436	13,972	14,681	13,678	13,104	13,647	11,367	13,678
W04P84	Wisc Gen Pri Cp3a 34KV	33,085	27,981	25,236	24,618	30,351	28,256	30,467	26,451	29,524	25,702	27,664	25,773	29,524
W04P54	Wisc Gen Pri CpFN 34KV	0	0	0	0	0	11,800	11,880	11,175	11,499	11,263	11,674	8,713	11,499
	Total Wisconsin GP Medium Voltage	1,125,784	1,116,794	1,144,219	1,157,904	1,260,150	1,276,393	1,298,739	1,272,734	1,289,585	1,188,742	1,141,965	1,120,163	1,301,084
W04P38	Wisc Gen Pri Cp1 138KV	7,727	8,292	6,403	7,761	8,306	8,427	9,190	4,856	11,775	7,327	5,238	8,013	11,775
W04P39	Wisc Gen Pri Cp2m 138KV	13,347	12,927	12,941	13,269	12,933	12,420	12,926	12,511	13,427	13,297	13,181	13,327	13,427
W04P32	Wisc Gen Pri Cp3 138KV Stora Enso Niagra	25,611	26,206	19,999	25,016	24,409	24,546	23,268	24,141	28,619	28,439	27,102	26,345	28,619
	Total Wisconsin GP High Voltage	46,685	47,425	39,343	46,046	45,647	45,393	45,384	41,507	53,822	49,063	45,520	47,685	53,822
	Total Wisconsin General Primary	1,221,257	1,211,752	1,229,538	1,252,462	1,360,139	1,377,686	1,396,805	1,367,173	1,400,612	1,289,061	1,236,694	1,217,079	1,400,612

Wisconsin Electric Power Company
2004 Class Load Analysis
Non Coincident (by Rate Group)Peak
Generation Level

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Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Maximum
W04S44	Wisc Gen Sec Cg1 Flat	365,060	365,314	376,311	342,845	427,186	471,035	501,038	496,996	471,944	375,181	317,542	362,563	501,038
W04S42	Wisc Gen Sec Cg6 Small Tou	10,517	9,908	8,475	4,855	5,475	11,392	12,073	11,986	10,559	6,014	6,514	9,037	12,073
W04S34	Wisc Gen Sec Cg2 Flat Demand	210,707	198,139	197,622	200,017	210,961	234,959	228,439	235,419	236,388	194,170	196,506	201,438	228,439
W04S70	Wisc Gen Sec Cg3 Tou Demand	979,716	979,564	990,006	943,885	1,088,313	1,148,510	1,154,940	1,092,248	1,145,607	1,015,753	982,277	979,053	1,154,940
W04S71	Wisc Gen Sec Cg3c Curt	2,897	2,732	2,948	5,286	4,778	4,978	3,664	4,825	6,135	5,526	5,006	4,144	3,664
W04S80	Wisc Gen Sec Cg3a Coop	2,954	2,952	3,259	3,875	3,599	4,303	3,503	4,069	4,443	4,003	3,279	3,383	3,503
	Total Cg3, Cg3A and Cg3C	985,567	985,248	996,214	953,046	1,096,690	1,157,791	1,162,107	1,101,141	1,156,186	1,025,282	990,562	986,580	1,162,107
	Total Wisconsin General Secondary	1,571,851	1,558,609	1,578,622	1,500,763	1,740,312	1,875,177	1,903,657	1,845,542	1,875,077	1,600,648	1,511,123	1,559,617	1,903,657
W04R11	Wisc Res Flat Rg1 & Fg1	1,627,048	1,423,894	1,357,889	1,224,082	1,216,310	2,085,972	1,945,110	1,901,078	1,887,550	1,241,489	1,506,305	1,821,804	2,085,972
W04R17	Wisc Res Tou Rg2	122,940	95,848	82,945	75,106	69,109	81,424	73,927	84,969	93,833	58,374	78,814	104,475	81,424
	Total Wisconsin Residential	1,749,988	1,519,742	1,440,834	1,299,187	1,285,419	2,167,397	2,019,036	1,986,047	1,981,382	1,299,864	1,585,119	1,926,279	2,167,397
	Dates and Times of Non Coin Peaks													
	Mich Wholesale	01/18/02	02/11/02	03/04/02	04/18/02	05/02/02	06/30/02	07/17/02	08/29/02	09/09/02	10/22/02	11/18/02	12/03/02	
		8:00	8:00	8:00	20:00	9:00	22:00	14:00	21:00	17:00	10:00	18:00	18:00	
	Mich Lighting	01/10/02	02/27/02	03/09/02	04/18/02	05/09/02	06/26/02	07/18/02	08/06/02	09/23/02	10/01/02	11/11/02	12/17/02	
		18:00	6:00	6:00	23:00	2:00	1:00	22:00	22:00	20:00	2:00	19:00	19:00	
	Mich General Primary	01/13/02	02/24/02	03/28/02	04/30/02	05/19/02	06/27/02	07/26/02	08/19/02	09/28/02	10/32/2002	11/30/02	12/06/02	
		12:00	5:00	21:00	22:00	15:00	5:00	16:00	21:00	0:00	0:00	20:00	18:00	
	Mich General Secondary	01/03/02	02/11/02	03/05/02	04/24/02	05/30/02	06/25/02	07/17/02	08/12/02	09/09/02	10/14/02	11/06/02	12/09/02	
		9:00	11:00	11:00	11:00	14:00	14:00	14:00	14:00	14:00	9:00	11:00	11:00	
	Mich Residential	01/01/02	02/03/02	03/03/02	04/03/02	05/09/02	06/30/02	07/01/02	08/11/02	09/09/02	10/20/02	11/30/02	12/22/02	
		19:00	18:00	20:00	20:00	21:00	18:00	18:00	19:00	21:00	19:00	18:00	18:00	
	Wisc Wholesale	01/03/02	02/13/02	03/19/02	04/18/02	05/31/02	06/24/02	07/30/02	08/01/02	09/09/02	10/01/02	11/06/02	12/02/02	
		18:00	21:00	12:00	14:00	13:00	17:00	17:00	17:00	15:00	15:00	11:00	18:00	
	Wisc WPPI	01/28/02	02/19/02	03/01/02	04/03/02	05/14/02	06/25/02	07/17/02	08/08/02	09/06/02	10/01/02	11/21/02	12/26/02	
		16:00	12:00	8:00	22:00	11:00	19:00	14:00	12:00	14:00	9:00	18:00	19:00	
	Wisc Lighting	01/12/02	02/27/02	03/14/02	04/21/02	05/30/02	06/30/02	07/17/02	08/01/02	09/29/02	10/01/02	11/29/02	12/07/02	
		18:00	21:00	20:00	21:00	22:00	22:00	22:00	22:00	21:00	21:00	18:00	18:00	
	Wisc General Primary	01/08/02	02/21/02	03/05/02	04/17/02	05/30/02	06/25/02	07/16/02	08/01/02	09/09/02	10/01/02	11/12/02	12/05/02	
		11:00	12:00	9:00	13:00	14:00	11:00	12:00	12:00	14:00	12:00	11:00	12:00	
	Wisc General Secondary	01/07/02	02/28/02	03/05/02	04/16/02	05/30/02	06/25/02	07/17/02	08/01/02	09/09/02	10/01/02	11/05/02	12/05/02	
		11:00	11:00	12:00	14:00	14:00	14:00	14:00	14:00	14:00	14:00	11:00	11:00	
	Wisc Residential	01/01/02	02/25/02	03/04/02	04/16/02	05/30/02	06/30/02	07/21/02	08/01/02	09/09/02	10/01/02	11/30/02	12/08/02	
		18:00	19:00	19:00	21:00	22:00	18:00	18:00	19:00	20:00	19:00	18:00	19:00	

Wisconsin Electric Power Company
2004 Class Load Analysis
Native System Peak
Generation Level

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Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average
M04C00	Mich Company Use	303	254	219	301	267	291	259	250	289	271	228	281	268
	Total Michigan Company Use	303	254	219	301	267	291	259	250	289	271	228	281	268
M04F60	Mich Wholesale Rate 60 <69KV	10,474	8,311	7,031	5,130	4,199	6,748	9,421	8,954	8,100	8,501	9,721	11,004	8,133
	Total Michigan Wholesale	10,474	8,311	7,031	5,130	4,199	6,748	9,421	8,954	8,100	8,501	9,721	11,004	8,133
M04L88	Mich Lighting Rate 88	406	498	473	0	0	0	0	0	0	0	459	408	187
M04L89	Mich Lighting Rate 89	2	3	3	0	0	0	0	0	0	0	3	2	1
M04U89	Mich Pumping Rate 89	1	2	1	2	2	1	1	1	1	3	2	2	2
M04LRS	Mich Residential Area Lighting	81	85	93	0	0	0	0	0	0	0	81	82	35
M04LSC	Mich Secondary Area Lighting	118	123	159	0	0	0	0	0	0	0	143	126	56
	Total Michigan Lighting & Other	608	712	728	2	2	1	1	1	1	3	688	620	281
M04P22	Mich Gen Pri CP1 Rate <69KV	3,238	2,901	3,098	3,980	3,699	4,754	3,938	4,418	4,419	4,126	2,912	2,904	3,699
M04P26	Mich Gen Pri Rate 26 Champion Firm	27,923	27,977	29,945	29,403	29,665	8,725	32,674	33,933	33,126	33,179	28,901	31,663	28,926
M04P46	Mich Gen Pri Rate 26 Champion Curt	1,360	1,311	862	1,764	1,722	0	1,448	2,016	0	1,730	2,055	1,603	1,323
M04P42	Mich Gen Pri Curt Rate <26KV	10,720	11,144	10,743	11,054	10,772	8,315	10,445	10,315	10,196	9,682	6,448	10,445	10,023
M04P27	Mich White Pine Mine 69 KV	4,692	4,433	4,543	4,421	4,554	0	0	2,827	3,225	4,076	3,751	4,133	3,388
M04P25	Mich Gen Pri Rate 25 Mines	261,088	266,920	262,324	279,439	272,116	200,022	275,738	263,320	273,500	270,204	275,259	270,535	264,206
	Total Michigan General Primary	309,022	314,687	311,515	330,062	322,527	221,816	324,243	316,829	324,465	322,996	319,327	321,283	311,564
M04S72	Mich Gen Sec Cg1	9,741	7,799	9,148	15,036	15,034	17,687	15,234	14,411	17,396	13,796	13,219	12,135	13,386
M04S40	Mich Gen Sec Cg5 Tou	2,240	1,681	2,179	700	1,011	1,828	1,446	1,504	1,540	962	2,632	2,369	1,674
M04S76	Mich Gen Sec Cg2 Tou	368	296	331	383	340	404	376	339	381	327	361	338	354
M04S74	Mich Gen Sec Cg3 Tou Demand	8,685	7,902	7,876	9,908	9,651	11,701	10,899	10,568	11,309	9,868	8,719	8,943	9,669
	Total Michigan General Secondary	21,033	17,678	19,534	26,027	26,035	31,620	27,955	26,822	30,625	24,953	24,932	23,785	25,083
M04R62	Mich Res Flat Rg1	32,542	28,108	27,127	17,477	15,040	25,282	24,141	21,114	18,273	18,134	30,464	38,225	24,661
M04R27	Mich Res TOU Rg2	2,303	1,770	1,650	649	678	1,169	1,124	1,048	878	672	1,592	2,053	1,299
	Total Michigan Residential	34,845	29,879	28,777	18,126	15,718	26,451	25,265	22,162	19,151	18,806	32,056	40,278	25,959
	Total Michigan Retail	365,507	362,955	360,555	374,216	364,283	279,889	377,464	365,814	374,242	366,759	377,002	385,965	362,888
	Total Michigan	376,284	371,520	367,805	379,648	368,749	286,928	387,144	375,017	382,630	375,532	386,951	397,250	371,288

Wisconsin Electric Power Company
2004 Class Load Analysis
Native System Peak
Generation Level

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Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average
W04C00	Wisc Company Use	12,242	11,828	9,157	14,597	15,146	14,715	13,333	13,611	13,933	12,507	10,726	11,965	12,813
	Total Wisconsin Company Use	12,242	11,828	9,157	14,597	15,146	14,715	13,333	13,611	13,933	12,507	10,726	11,965	12,813
W04F60	Wisc Wholesale 345KV	35,970	22,638	16,181	15,945	22,890	61,392	66,830	69,134	66,479	43,187	48,924	51,482	43,421
W04F63	Wisc Wholesale 34KV	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Wisc Wholesale (Excluding WPPI)	35,970	22,638	16,181	15,945	22,890	61,392	66,830	69,134	66,479	43,187	48,924	51,482	43,421
W04W01	Wisc WPPI Transmission	274,076	264,874	213,748	245,477	260,873	194,361	274,135	233,255	273,120	235,265	247,532	240,342	246,421
	Total WPPI Transmission	274,076	264,874	213,748	245,477	260,873	194,361	274,135	233,255	273,120	235,265	247,532	240,342	246,421
	Total Wisc Wholesale (Including WPPI)	310,046	287,512	229,929	261,421	283,763	255,753	340,965	302,390	339,598	278,452	296,456	291,824	289,842
W04L01	Wisc Lighting Rate 01	13,606	14,527	16,505	0	0	0	0	0	0	0	14,006	13,312	5,996
W04L05	Wisc Lighting Rate 05	1,442	1,428	1,717	0	0	0	0	0	0	0	1,237	1,336	597
W03U05	Mich Pumping Rate 89	2,880	2,408	2,920	2,681	2,349	3,021	2,028	3,322	2,763	3,531	1,933	1,997	2,653
W04L36	Wisc Lighting Rate 36 (Tou)	18,227	16,968	16,875	0	0	0	0	0	0	0	16,552	17,858	7,207
W04L46	Wisc Lighting Rate 46	2,545	2,287	2,308	0	0	0	0	0	0	0	2,260	2,584	999
W04LRS	Wisc Res Area Lighting	799	844	937	0	0	0	0	0	0	0	790	766	345
W04LSC	Wisc Gen Sec & Gen Pri Area Lighting	4,401	5,009	5,764	0	0	0	0	0	0	0	4,536	4,235	1,995
	Total Wisconsin Lighting & Other	43,900	43,472	47,026	2,681	2,349	3,021	2,028	3,322	2,763	3,531	41,313	42,087	19,791
W04P28	Wisc Gen Pri Cp1 8KV Customers	42,342	40,564	40,178	46,336	50,798	54,195	50,213	50,558	54,991	49,031	41,216	41,668	46,841
W04P81	Wisc Gen Pri Cp3a <13KV	1,411	1,381	1,395	2,176	1,694	2,056	1,803	1,843	2,215	2,225	1,105	1,407	1,726
	Total Wisconsin GP Low Voltage	43,753	41,946	41,572	48,512	52,491	56,250	52,016	52,401	57,205	51,256	42,322	43,075	48,567
W04P27	Wisc Gen Pri Cp1 13KV Customers	168,686	165,235	162,599	212,388	235,288	249,422	238,226	238,463	251,135	220,322	172,494	169,244	206,959
W04P26	Wisc Gen Pri Cp1 26KV Customers	534,431	527,417	526,499	613,534	654,386	698,482	675,314	673,113	704,850	632,848	533,285	515,210	607,447
W04P25	Wisc Gen Pri Cp1 34KV Customers	107,013	109,884	110,076	102,022	109,588	112,344	109,954	107,091	108,984	101,384	98,085	90,507	105,578
W04P34	Wisc Gen Pri Cp1 26KV Charter	5,552	5,471	5,372	5,465	5,453	5,580	6,038	5,892	5,840	5,702	5,601	5,683	5,637
W04P33	Wisc Gen Pri Cp1 34KV-Stora Enso Kimberly	27,322	29,696	28,226	33,054	33,780	19,066	34,083	34,447	35,963	35,093	32,192	29,771	31,058
W04P21	Wisc Gen Pri Cp2m 13KV	3,847	3,983	3,454	4,815	2,702	3,975	5,967	5,843	5,983	6,214	5,098	5,381	4,772
W04P22	Wisc Gen Pri Cp2m 26KV	33,932	34,384	30,069	39,129	40,399	38,857	36,399	37,205	42,291	44,012	30,115	36,497	36,941
W04P20	Wisc Gen Pri Cp2m 26KV Charter	56,999	48,812	40,151	52,295	52,996	41,785	60,337	56,610	43,711	56,961	60,745	50,313	51,810
W04P29	Wisc Gen Pri Cp3 13KV	2,198	2,072	2,185	2,604	1,857	2,991	2,370	2,610	2,864	2,900	2,222	2,326	2,433
W04P30	Wisc Gen Pri Cp3 26KV	23,170	22,111	20,228	36,821	30,462	35,418	31,902	30,426	37,911	39,026	26,219	28,369	30,172
W04P40	Wisc Gen Pri Cp3 34KV	0	0	5,005	15,487	16,365	6,791	5,974	5,188	6,333	4,874	5,526	5,803	6,445
W04P82	Wisc Gen Pri Cp3a 13KV	561	520	566	563	553	567	510	631	519	600	597	651	570
W04P83	Wisc Gen Pri Cp3a 26KV	12,493	12,393	13,102	15,108	15,310	16,181	13,621	14,473	13,678	13,104	10,146	10,694	13,359
W04P84	Wisc Gen Pri Cp3a 34KV	29,943	30,334	23,729	24,618	28,765	28,581	29,845	26,450	29,524	25,702	24,591	25,832	27,326
W04P54	Wisc Gen Pri CpFN 34KV	0	0	0	0	0	11,730	11,859	11,153	11,499	11,263	7,386	7,890	6,065
	Total Wisconsin GP Medium Voltage	1,006,148	992,313	971,261	1,157,904	1,227,904	1,271,770	1,262,399	1,249,596	1,301,084	1,200,005	1,014,303	984,170	1,136,571
W04P38	Wisc Gen Pri Cp1 138KV	9,405	4,920	6,551	7,761	8,500	8,383	7,490	5,011	11,775	7,327	9,452	9,189	7,980
W04P39	Wisc Gen Pri Cp2m 138KV	13,272	13,168	13,173	13,269	12,861	12,418	4,673	12,657	13,427	13,297	4,434	13,475	11,677
W04P32	Wisc Gen Pri Cp3 138KV Stora Enso Niagra	27,925	28,306	27,343	25,016	24,937	24,786	27,685	24,206	28,619	28,439	26,896	26,282	26,703
	Total Wisconsin GP High Voltage	50,602	46,394	47,066	46,046	46,298	45,586	39,848	41,875	53,822	49,063	40,782	48,947	46,361
	Total Wisconsin General Primary	1,100,502	1,080,653	1,059,900	1,252,462	1,326,693	1,373,606	1,354,263	1,343,872	1,412,111	1,300,324	1,097,406	1,076,192	1,231,499

Wisconsin Electric Power Company
2004 Class Load Analysis
Native System Peak
Generation Level

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Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average
W04S44	Wisc Gen Sec Cg1 Flat	291,586	275,540	282,303	320,816	433,452	471,035	475,224	488,212	471,944	372,685	314,366	313,559	375,893
W04S42	Wisc Gen Sec Cg6 Small Tou	16,399	14,143	14,231	5,243	6,200	11,392	13,391	12,599	10,559	7,335	14,397	16,763	11,887
W04S34	Wisc Gen Sec Cg2 Flat Demand	163,023	156,408	161,769	186,471	195,206	234,959	214,820	231,984	236,388	196,107	152,397	149,424	189,913
W04S70	Wisc Gen Sec Cg3 Tou Demand	757,976	725,071	735,623	919,904	1,024,692	1,148,510	1,102,009	1,071,519	1,145,607	995,530	736,006	771,549	927,833
W04S71	Wisc Gen Sec Cg3c Curt	2,241	2,069	2,414	3,039	5,115	4,978	4,791	4,834	6,135	5,804	2,790	2,813	3,919
W04S80	Wisc Gen Sec Cg3a Coop	2,713	2,601	2,604	3,529	3,487	4,303	4,203	4,026	4,443	3,111	3,038	2,950	3,417
	Total Cg3, Cg3A and Cg3C	762,930	729,741	740,640	926,472	1,033,295	1,157,791	1,111,004	1,080,379	1,156,186	1,004,445	741,834	777,313	935,169
	Total Wisconsin General Secondary	1,233,939	1,175,832	1,198,944	1,439,002	1,668,154	1,875,177	1,814,438	1,813,174	1,875,077	1,580,572	1,222,994	1,257,058	1,512,863
W04R11	Wisc Res Flat Rg1 & Fg1	1,514,852	1,394,310	1,279,364	731,916	870,039	1,509,989	1,709,982	1,588,244	1,368,310	690,336	1,387,621	1,686,297	1,310,938
W04R17	Wisc Res Tou Rg2	105,607	83,625	80,992	28,456	35,237	60,579	67,649	60,197	52,212	30,615	73,183	93,443	64,316
	Total Wisconsin Residential	1,620,460	1,477,934	1,360,356	760,372	905,276	1,570,568	1,777,631	1,648,441	1,420,522	720,951	1,460,804	1,779,739	1,375,255
	Total Wisconsin Retail	3,998,801	3,777,891	3,666,226	3,454,517	3,902,471	4,822,372	4,948,360	4,808,809	4,710,472	3,605,379	3,822,517	4,155,076	4,139,408
	Total Wisconsin	4,321,089	4,077,231	3,905,313	3,730,536	4,201,380	5,092,840	5,302,658	5,124,810	5,064,003	3,896,338	4,129,699	4,458,865	4,442,063
	Total Native System from This Report	4,423,297	4,183,877	4,059,369	3,864,707	4,309,256	5,185,407	5,415,667	5,266,572	5,173,513	4,036,605	4,269,118	4,615,774	4,566,930
	Native System Peak	4,387,000	4,167,000	4,083,000	3,806,000	4,306,000	5,188,000	5,373,000	5,222,000	5,086,000	4,009,000	4,219,000	4,624,000	4,539,167
	Date of Native System Peak	01/29/04	02/09/04	03/11/04	04/19/04	05/20/04	06/08/04	07/20/04	08/03/04	09/15/04	10/08/04	11/30/04	12/22/04	
	Hour of Native System Peak	19:00	19:00	19:00	11:00	16:00	14:00	16:00	15:00	14:00	11:00	18:00	18:00	
	Variation from Native System Peak	-0.83%	-0.41%	0.58%	-1.54%	-0.08%	0.05%	-0.79%	-0.85%	-1.72%	-0.69%	-1.19%	0.18%	-0.61%

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Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
M04C00	Mich Company Use	175	145	136	129	113	115	117	111	118	121	129	160	1,568
	Total Michigan Company Use	175	145	136	129	113	115	117	111	118	121	129	160	1,568
M04F60	Mich Wholesale Rate 60 <69KV	5,124	4,399	3,887	2,910	2,793	3,044	4,172	4,474	4,624	4,463	4,365	5,340	49,597
	Total Michigan Wholesale	5,124	4,399	3,887	2,910	2,793	3,044	4,172	4,474	4,624	4,463	4,365	5,340	49,597
M04L88	Mich Lighting Rate 88	168	177	162	171	183	166	180	172	167	177	180	173	2,076
M04L89	Mich Lighting Rate 89	1	1	1	1	1	1	1	1	0	1	1	1	
M04U89	Mich Pumping Rate 89	1	1	1	1	1	1	1	1	0	1	1	1	9
M04LRS	Mich Residential Area Lighting	33	30	32	34	32	35	32	31	32	32	32	35	390
M04LSC	Mich Secondary Area Lighting	49	44	54	50	53	54	52	49	53	50	56	53	618
	Total Michigan Lighting & Other	252	253	251	257	270	256	265	254	253	260	269	263	3,104
M04P22	Mich Gen Pri CP1 Rate <69KV	1,975	1,702	1,938	1,876	1,954	2,056	2,205	2,185	2,096	1,907	1,729	1,838	23,460
M04P26	Mich Gen Pri Rate 26 Champion Firm	21,212	19,334	20,895	20,345	22,122	14,597	24,162	24,037	22,904	22,116	20,944	21,303	253,971
M04P46	Mich Gen Pri Rate 26 Champion Curt	1,021	920	925	1,006	626	695	949	1,015	608	890	863	998	10,516
M04P42	Mich Gen Pri Curt Rate <26KV	6,985	6,552	7,311	7,028	7,243	5,097	6,568	6,854	6,680	6,944	6,413	6,226	79,901
M04P27	Mich White Pine Mine 69 KV	3,421	3,060	3,360	3,134	2,610	45	0	2,144	2,379	2,991	2,856	2,993	28,992
M04P25	Mich Gen Pri Rate 25 Mines	189,012	181,590	187,585	203,094	209,157	194,506	192,768	194,341	181,691	197,930	202,290	201,548	2,335,513
	Total Michigan General Primary	223,626	213,157	222,013	236,484	243,713	216,996	226,652	230,575	216,358	232,778	235,096	234,905	2,732,354
M04S72	Mich Gen Sec Cg1	6,508	5,305	6,390	5,271	5,966	6,004	5,887	5,371	5,813	5,624	6,712	6,753	71,604
M04S40	Mich Gen Sec Cg5 Tou	1,088	815	1,024	742	848	932	707	775	960	860	1,250	1,187	11,189
M04S76	Mich Gen Sec Cg2 Tou	216	175	210	197	193	186	191	183	188	176	202	202	2,320
M04S74	Mich Gen Sec Cg3 Tou Demand	5,103	4,709	5,032	5,113	5,473	5,421	5,560	5,766	5,724	5,241	5,041	5,350	63,532
	Total Michigan General Secondary	12,915	11,004	12,657	11,323	12,479	12,543	12,345	12,095	12,684	11,901	13,205	13,492	148,644
M04R62	Mich Res Flat Rg1	17,104	13,309	13,073	11,800	11,198	12,524	12,120	11,590	11,838	11,783	13,806	17,487	157,632
M04R27	Mich Res TOU Rg2	1,104	847	766	681	563	589	543	533	541	594	746	1,015	8,524
	Total Michigan Residential	18,209	14,156	13,839	12,481	11,761	13,113	12,662	12,124	12,379	12,377	14,553	18,502	166,155
	Total Michigan Retail	255,002	238,570	248,761	260,545	268,223	242,909	251,924	255,048	241,674	257,317	263,123	267,162	3,050,257
	Total Michigan	260,301	243,115	252,784	263,584	271,129	246,068	256,213	259,633	246,417	261,900	267,617	272,662	3,101,423

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Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
W04C00	Wisc Company Use	7,050	6,728	5,646	6,221	6,371	5,789	6,001	5,987	5,683	5,535	6,039	6,763	73,814
	Total Wisconsin Company Use	7,050	6,728	5,646	6,221	6,371	5,789	6,001	5,987	5,683	5,535	6,039	6,763	73,814
W04F60	Wisc Wholesale 345KV	24,675	9,966	8,556	9,094	13,690	28,849	30,126	26,729	28,889	23,317	25,743	27,190	256,824
W04F63	Wisc Wholesale 34KV													0
	Total Wisc Wholesale (Excluding WPPI)	24,675	9,966	8,556	9,094	13,690	28,849	30,126	26,729	28,889	23,317	25,743	27,190	256,824
W04W01	Wisc WPPI Transmission	145,305	147,408	161,219	139,872	147,493	131,268	130,392	127,917	131,218	138,238	128,892	141,583	1,670,805
	Total WPPI Transmission	145,305	147,408	161,219	139,872	147,493	131,268	130,392	127,917	131,218	138,238	128,892	141,583	1,670,805
	Total Wisc Wholesale (Including WPPI)	169,980	157,374	169,775	148,966	161,183	160,117	160,518	154,646	160,107	161,555	154,635	168,773	1,927,629
W04L01	Wisc Lighting Rate 01	5,629	5,162	5,672	5,339	4,960	6,334	5,142	5,619	5,415	5,671	5,489	5,652	66,085
W04L05	Wisc Lighting Rate 05	597	507	590	496	427	601	610	682	657	558	485	567	6,776
W04U05	Wisc Pumping Rate 05	1,538	1,456	1,657	1,434	1,274	1,635	1,366	1,678	1,570	1,500	1,273	1,520	17,901
W04L36	Wisc Lighting Rate 36 (Tou)	7,541	6,029	5,799	5,161	4,084	4,623	4,202	5,019	5,060	5,932	6,487	7,583	67,521
W04L46	Wisc Lighting Rate 46	1,053	813	793	737	592	691	591	694	713	770	886	1,097	9,430
W04LRS	Wisc Res Area Lighting	331	300	322	319	317	326	324	315	346	299	309	325	3,833
W04LSC	Wisc Gen Sec & Gen Pri Area Lighting	1,821	1,780	1,981	1,877	1,803	1,860	1,941	1,877	1,908	1,940	1,778	1,798	22,363
	Total Wisconsin Lighting & Other	18,509	16,047	16,814	15,364	13,458	16,070	14,176	15,885	15,669	16,670	16,706	18,542	193,909
W04P28	Wisc Gen Pri Cp1 8KV Customers	25,120	23,412	24,695	23,660	24,759	25,517	26,772	26,946	27,162	25,410	23,839	25,576	302,869
W04P81	Wisc Gen Pri Cp3a <13KV	1,044	982	1,064	994	1,026	1,056	1,085	1,083	1,088	1,079	1,013	1,000	12,514
	Total Wisconsin GP Low Voltage	26,164	24,394	25,759	24,654	25,785	26,573	27,856	28,030	28,250	26,489	24,852	26,577	315,383
W04P27	Wisc Gen Pri Cp1 13KV Customers	111,607	104,740	116,802	108,275	114,178	119,424	128,176	128,031	124,714	114,827	106,942	109,506	1,387,221
W04P26	Wisc Gen Pri Cp1 26KV Customers	332,885	321,016	348,685	331,614	345,374	360,612	371,296	379,266	368,818	352,090	320,812	321,903	4,154,370
W04P25	Wisc Gen Pri Cp1 34KV Customers	69,713	67,124	72,596	61,427	63,021	65,317	65,735	67,227	65,356	63,298	59,628	59,800	780,242
W04P34	Wisc Gen Pri Cp1 26KV Charter	3,848	3,504	3,764	3,594	3,522	3,783	3,874	4,087	3,811	4,000	3,642	3,794	45,223
W04P33	Wisc Gen Pri Cp1 34KV-Stora Enso Kimberly	20,168	19,745	21,416	21,707	20,757	19,404	24,654	25,036	24,714	23,468	22,040	22,806	265,916
W04P21	Wisc Gen Pri Cp2m 13KV	3,310	2,511	2,564	2,484	2,684	2,860	3,261	3,671	3,525	3,498	3,304	2,674	36,347
W04P22	Wisc Gen Pri Cp2m 26KV	21,284	21,372	23,206	22,085	23,613	23,380	24,535	23,878	23,240	23,395	23,139	23,527	276,655
W04P20	Wisc Gen Pri Cp2m 26KV Charter	29,073	28,042	33,101	30,963	27,724	33,488	28,691	33,913	28,883	32,249	27,745	28,916	362,789
W04P29	Wisc Gen Pri Cp3 13KV	1,909	1,958	2,102	1,816	1,816	1,627	1,931	2,090	1,982	1,919	1,727	2,068	22,944
W04P30	Wisc Gen Pri Cp3 26KV	15,443	14,561	17,986	16,468	16,983	18,564	16,717	20,352	20,236	19,810	17,692	17,849	212,661
W04P40	Wisc Gen Pri Cp3 34KV			3,544	10,254	10,739	3,179	2,614	3,169	2,976	3,077	3,011	3,166	
W04P82	Wisc Gen Pri Cp3a 13KV	292	281	304	276	263	281	275	291	269	267	277	296	3,373
W04P83	Wisc Gen Pri Cp3a 26KV	7,514	6,905	7,559	7,932	7,986	8,512	7,490	7,505	7,276	6,976	6,690	6,404	88,748
W04P84	Wisc Gen Pri Cp3a 34KV	19,893	18,558	17,372	16,471	18,661	17,459	18,569	18,980	18,698	18,199	16,664	16,448	215,972
W04P54	Wisc Gen Pri CpFN 34KV						7,737	8,026	7,878	7,529	7,811	7,576	6,810	
	Total Wisconsin GP Medium Voltage	636,939	610,318	671,001	635,368	657,321	685,630	705,845	725,373	702,027	674,883	620,888	625,966	7,951,558
W04P38	Wisc Gen Pri Cp1 138KV	6,461	5,103	5,281	6,807	7,330	7,227	6,947	6,530	7,394	6,588	6,717	7,885	80,269
W04P39	Wisc Gen Pri Cp2m 138KV	9,440	8,939	9,497	9,266	9,552	9,192	9,360	9,416	9,418	9,607	9,123	8,367	111,180
W04P32	Wisc Gen Pri Cp3 138KV Stora Enso Niagra	22,761	20,627	19,291	19,308	19,767	18,111	22,021	20,803	23,159	22,443	20,013	20,078	248,380
	Total Wisconsin GP High Voltage	38,662	34,669	34,069	35,380	36,650	34,530	38,328	36,749	39,971	38,638	35,853	36,331	439,830
	Total Wisconsin General Primary	701,765	669,380	730,829	695,402	719,756	746,734	772,030	790,151	770,248	740,010	681,593	688,873	8,706,771

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Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
W04S44	Wisc Gen Sec Cg1 Flat	175,013	158,808	167,952	144,469	152,298	161,072	177,250	167,704	165,775	153,186	150,382	170,883	1,944,792
W04S42	Wisc Gen Sec Cg6 Small Tou	7,933	6,832	6,658	5,531	5,174	5,773	6,507	6,445	6,541	6,527	6,809	8,365	79,095
W04S34	Wisc Gen Sec Cg2 Flat Demand	88,783	81,886	91,028	78,013	81,788	82,853	91,867	89,212	88,091	83,805	81,818	86,716	1,025,861
W04S70	Wisc Gen Sec Cg3 Tou Demand	438,941	414,351	454,820	394,016	433,182	454,133	499,840	474,345	470,047	442,399	416,562	438,593	5,331,229
W04S71	Wisc Gen Sec Cg3c Curt	1,570	1,566	1,796	1,864	2,097	2,269	2,274	2,237	2,431	2,451	2,173	1,992	24,720
W04S80	Wisc Gen Sec Cg3a Coop	1,505	1,477	1,736	1,684	1,707	1,905	1,909	1,974	1,938	1,737	1,477	1,537	20,587
	Total Cg3, Cg3A and Cg3C	442,016	417,393	458,353	397,563	436,987	458,308	504,023	478,556	474,416	446,587	420,212	442,122	5,376,535
	Total Wisconsin General Secondary	713,744	664,918	723,991	625,576	676,247	708,006	779,648	741,917	734,824	690,104	659,221	708,086	8,426,282
W04R11	Wisc Res Flat Rg1 & Fg1	733,200	581,138	585,370	503,445	536,585	597,048	669,581	632,373	643,493	504,526	580,363	726,819	7,293,941
W04R17	Wisc Res Tou Rg2	50,530	39,977	37,523	29,750	29,158	30,428	32,536	30,440	32,059	27,000	34,277	46,121	419,799
	Total Wisconsin Residential	783,730	621,115	622,893	533,195	565,743	627,477	702,118	662,813	675,552	531,526	614,640	772,940	7,713,740
	Total Wisconsin Retail	2,217,748	1,971,461	2,094,527	1,869,537	1,975,203	2,098,287	2,267,971	2,210,766	2,196,292	1,978,310	1,972,160	2,188,441	25,040,703
	Total Wisconsin	2,394,778	2,135,563	2,269,948	2,024,725	2,142,757	2,264,192	2,434,490	2,371,399	2,362,083	2,145,400	2,132,835	2,363,977	27,042,146
	Total System	2,655,079	2,378,678	2,522,732	2,288,309	2,413,886	2,510,260	2,690,703	2,631,032	2,608,500	2,407,300	2,400,451	2,636,639	30,143,569

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Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
M04C00	Mich Company Use	190	157	147	139	122	124	127	120	128	130	139	173	1,695
	Total Michigan Company Use	190	157	147	139	122	124	127	120	128	130	139	173	1,695
M04F60	Mich Wholesale Rate 60 <69KV	5,351	4,590	4,053	3,031	2,907	3,169	4,350	4,674	4,812	4,649	4,552	5,574	51,713
	Total Michigan Wholesale	5,351	4,590	4,053	3,031	2,907	3,169	4,350	4,674	4,812	4,649	4,552	5,574	51,713
M04L88	Mich Lighting Rate 88	182	192	176	185	198	180	195	187	181	192	195	188	2,252
M04L89	Mich Lighting Rate 89	1	1	1	1	1	1	1	1	1	1	1	1	12
M04U89	Mich Pumping Rate 89	1	1	1	1	1	1	1	1	0	1	1	1	10
M04LRS	Mich Residential Area Lighting	36	33	35	37	34	38	35	34	35	34	34	38	423
M04LSC	Mich Secondary Area Lighting	53	48	59	54	58	58	56	53	58	55	61	58	670
	Total Michigan Lighting & Other	274	275	272	278	292	277	287	276	274	282	293	286	3,367
M04P22	Mich Gen Pri CP1 Rate <69KV	2,063	1,775	2,020	1,954	2,034	2,140	2,299	2,282	2,181	1,986	1,803	1,918	24,457
M04P26	Mich Gen Pri Rate 26 Champion Firm	21,645	19,728	21,325	20,765	22,583	14,898	24,654	24,528	23,373	22,571	21,375	21,739	259,185
M04P46	Mich Gen Pri Rate 26 Champion Curt	1,042	939	944	1,027	639	709	968	1,035	621	909	881	1,018	10,732
M04P42	Mich Gen Pri Curt Rate <26KV	7,293	6,837	7,623	7,319	7,539	5,307	6,848	7,159	6,951	7,234	6,687	6,499	83,297
M04P27	Mich White Pine Mine 69 KV	3,491	3,123	3,429	3,199	2,664	46	0	2,188	2,428	3,052	2,914	3,054	29,587
M04P25	Mich Gen Pri Rate 25 Mines	192,872	185,296	191,438	207,282	213,508	198,525	196,695	198,311	185,415	202,006	206,453	205,680	2,383,481
	Total Michigan General Primary	228,405	217,698	226,778	241,546	248,966	221,625	231,464	235,504	220,970	237,758	240,115	239,909	2,790,738
M04S72	Mich Gen Sec Cg1	7,043	5,740	6,903	5,686	6,433	6,481	6,367	5,818	6,274	6,069	7,254	7,308	77,376
M04S40	Mich Gen Sec Cg5 Tou	1,178	882	1,107	801	914	1,006	765	839	1,036	929	1,351	1,284	12,091
M04S76	Mich Gen Sec Cg2 Tou	234	189	227	213	208	201	207	198	203	190	218	219	2,507
M04S74	Mich Gen Sec Cg3 Tou Demand	5,490	5,064	5,407	5,489	5,874	5,823	5,984	6,212	6,149	5,628	5,415	5,755	68,289
	Total Michigan General Secondary	13,944	11,875	13,644	12,188	13,430	13,511	13,323	13,067	13,663	12,816	14,238	14,566	160,264
M04R62	Mich Res Flat Rg1	18,672	14,527	14,235	12,824	12,165	13,624	13,223	12,662	12,876	12,814	15,049	19,097	171,768
M04R27	Mich Res TOU Rg2	1,211	929	838	742	614	643	595	585	591	649	817	1,113	9,325
	Total Michigan Residential	19,882	15,456	15,073	13,566	12,779	14,267	13,818	13,247	13,467	13,462	15,866	20,210	181,093
	Total Michigan Retail	262,505	245,303	255,767	267,578	275,467	249,681	258,892	262,094	248,374	264,318	270,512	274,972	3,135,462
	Total Michigan	268,046	250,050	259,967	270,748	278,495	252,974	263,369	266,888	253,314	269,098	275,203	280,719	3,188,870

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Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
W04C00	Wisc Company Use	7,663	7,309	6,129	6,745	6,908	6,285	6,532	6,530	6,172	6,003	6,552	7,348	80,176
	Total Wisconsin Company Use	7,663	7,309	6,129	6,745	6,908	6,285	6,532	6,530	6,172	6,003	6,552	7,348	80,176
W04F60	Wisc Wholesale 345KV	25,178	10,170	8,732	9,282	13,974	29,444	30,740	27,275	29,481	23,797	26,273	27,747	262,092
W04F63	Wisc Wholesale 34KV	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Wisc Wholesale (Excluding WPPI)	25,178	10,170	8,732	9,282	13,974	29,444	30,740	27,275	29,481	23,797	26,273	27,747	262,092
W04W01	Wisc WPPI Transmission	148,599	150,751	164,882	143,064	150,890	134,281	133,377	130,865	134,226	141,402	131,838	144,801	1,708,976
	Total WPPI Transmission	148,599	150,751	164,882	143,064	150,890	134,281	133,377	130,865	134,226	141,402	131,838	144,801	1,708,976
	Total Wisc Wholesale (Including WPPI)	173,777	160,921	173,613	152,346	164,864	163,725	164,116	158,141	163,707	165,199	158,111	172,548	1,971,068
W04L01	Wisc Lighting Rate 01	6,115	5,603	6,150	5,782	5,372	6,864	5,585	6,113	5,870	6,145	5,953	6,138	71,690
W04L05	Wisc Lighting Rate 05	648	551	640	538	462	651	662	742	712	604	526	616	7,352
W03U05	Mich Pumping Rate 89	1,670	1,581	1,797	1,554	1,380	1,772	1,484	1,826	1,702	1,625	1,380	1,651	19,420
W04L36	Wisc Lighting Rate 36 (Tou)	8,191	6,544	6,288	5,590	4,423	5,010	4,563	5,460	5,485	6,429	7,035	8,235	73,254
W04L46	Wisc Lighting Rate 46	1,144	882	860	799	642	749	641	755	773	835	961	1,191	10,231
W04LRS	Wisc Res Area Lighting	359	326	349	345	343	354	352	343	375	324	336	353	4,158
W04LSC	Wisc Gen Sec & Gen Pri Area Lighting	1,978	1,932	2,148	2,033	1,953	2,016	2,108	2,042	2,068	2,102	1,928	1,953	24,260
	Total Wisconsin Lighting & Other	20,105	17,418	18,231	16,640	14,575	17,416	15,394	17,282	16,984	18,064	18,118	20,138	210,366
W04P28	Wisc Gen Pri Cp1 8KV Customers	26,108	24,330	25,654	24,580	25,729	26,526	27,856	28,056	28,244	26,409	24,775	26,581	314,848
W04P81	Wisc Gen Pri Cp3a <13KV	1,085	1,020	1,106	1,032	1,066	1,098	1,129	1,128	1,131	1,121	1,053	1,040	13,009
	Total Wisconsin GP Low Voltage	27,193	25,350	26,760	25,613	26,795	27,624	28,985	29,184	29,375	27,530	25,828	27,621	327,857
W04P27	Wisc Gen Pri Cp1 13KV Customers	115,732	108,595	121,059	112,226	118,371	123,857	133,062	133,000	129,385	119,063	110,884	113,546	1,438,780
W04P26	Wisc Gen Pri Cp1 26KV Customers	345,188	332,833	361,394	343,715	358,059	373,998	385,450	393,985	382,630	365,078	332,637	333,778	4,308,746
W04P25	Wisc Gen Pri Cp1 34KV Customers	72,289	69,594	75,242	63,669	65,336	67,742	68,241	69,836	67,803	65,633	61,826	62,006	809,218
W04P34	Wisc Gen Pri Cp1 26KV Charter	3,990	3,632	3,901	3,725	3,652	3,924	4,021	4,246	3,954	4,148	3,776	3,933	46,903
W04P33	Wisc Gen Pri Cp1 34KV-Stora Enso Kimberly	20,913	20,472	22,196	22,499	21,519	20,124	25,594	26,007	25,640	24,334	22,852	23,648	275,800
W04P21	Wisc Gen Pri Cp2m 13KV	3,433	2,604	2,657	2,575	2,783	2,967	3,385	3,813	3,657	3,627	3,426	2,772	37,699
W04P22	Wisc Gen Pri Cp2m 26KV	22,071	22,159	24,052	22,891	24,480	24,248	25,470	24,804	24,111	24,258	23,992	24,395	286,931
W04P20	Wisc Gen Pri Cp2m 26KV Charter	30,147	29,074	34,308	32,093	28,742	34,731	29,785	35,229	29,964	33,439	28,767	29,983	376,264
W04P29	Wisc Gen Pri Cp3 13KV	1,979	2,030	2,179	1,882	1,882	1,688	2,004	2,171	2,056	1,990	1,790	2,144	23,796
W04P30	Wisc Gen Pri Cp3 26KV	16,014	15,097	18,642	17,069	17,607	19,253	17,355	21,142	20,994	20,540	18,344	18,507	220,563
W04P40	Wisc Gen Pri Cp3 34KV	0	0	3,673	10,629	11,134	3,298	2,713	3,292	3,088	3,191	3,122	3,282	47,421
W04P82	Wisc Gen Pri Cp3a 13KV	303	291	315	286	273	291	285	303	279	277	288	307	3,498
W04P83	Wisc Gen Pri Cp3a 26KV	7,791	7,159	7,834	8,221	8,279	8,828	7,775	7,796	7,548	7,233	6,936	6,640	92,043
W04P84	Wisc Gen Pri Cp3a 34KV	20,629	19,242	18,005	17,072	19,346	18,107	19,277	19,717	19,398	18,870	17,278	17,055	223,995
W04P54	Wisc Gen Pri CpFN 34KV	0	0	0	0	0	8,025	8,332	8,184	7,811	8,099	7,855	7,061	55,367
	Total Wisconsin GP Medium Voltage	660,480	632,784	695,459	658,553	681,464	711,081	732,752	753,524	728,318	699,779	643,774	649,058	8,247,026
W04P38	Wisc Gen Pri Cp1 138KV	6,593	5,207	5,389	6,947	7,483	7,376	7,088	6,663	7,546	6,723	6,856	8,047	81,917
W04P39	Wisc Gen Pri Cp2m 138KV	9,633	9,122	9,692	9,457	9,751	9,382	9,551	9,608	9,611	9,805	9,311	8,539	113,462
W04P32	Wisc Gen Pri Cp3 138KV Stora Enso Niagra	23,225	21,047	19,687	19,705	20,177	18,485	22,470	21,228	23,633	22,905	20,425	20,490	253,477
	Total Wisconsin GP High Voltage	39,451	35,376	34,768	36,109	37,411	35,243	39,109	37,500	40,790	39,433	36,591	37,075	448,856
	Total Wisconsin General Primary	727,124	693,510	756,987	720,275	745,670	773,948	800,846	820,208	798,483	766,742	706,193	713,754	9,023,738

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Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
W04S44	Wisc Gen Sec Cg1 Flat	190,223	172,533	182,295	156,649	165,146	174,879	192,919	182,916	180,037	166,127	163,155	185,663	2,112,543
W04S42	Wisc Gen Sec Cg6 Small Tou	8,622	7,422	7,227	5,997	5,611	6,268	7,083	7,029	7,104	7,078	7,388	9,088	85,917
W04S34	Wisc Gen Sec Cg2 Flat Demand	96,526	88,998	98,858	84,656	88,764	90,015	100,024	97,324	95,757	90,962	88,814	94,266	1,114,965
W04S70	Wisc Gen Sec Cg3 Tou Demand	474,196	447,524	491,019	425,111	467,443	490,487	540,812	514,105	508,008	477,464	449,545	473,821	5,759,534
W04S71	Wisc Gen Sec Cg3c Curt	1,696	1,691	1,939	2,011	2,263	2,451	2,461	2,424	2,628	2,645	2,345	2,152	26,706
W04S80	Wisc Gen Sec Cg3a Coop	1,626	1,595	1,874	1,817	1,842	2,058	2,065	2,139	2,095	1,874	1,594	1,661	22,241
	Total Cg3, Cg3A and Cg3C	477,518	450,810	494,833	428,939	471,548	494,995	545,338	518,669	512,730	481,983	453,485	477,634	5,808,481
	Total Wisconsin General Secondary	772,889	719,763	783,212	676,240	731,069	766,158	845,364	805,938	795,628	746,150	712,842	766,651	9,121,905
W04R11	Wisc Res Flat Rg1 & Fg1	798,221	632,220	636,174	546,424	582,243	648,884	729,998	691,298	699,284	547,582	630,494	791,084	7,933,906
W04R17	Wisc Res Tou Rg2	55,525	43,887	41,130	32,549	31,886	33,334	35,781	33,585	35,128	29,545	37,554	50,663	460,566
	Total Wisconsin Residential	853,745	676,106	677,304	578,973	614,130	682,218	765,779	724,882	734,411	577,127	668,049	841,747	8,394,472
	Total Wisconsin Retail	2,373,864	2,106,796	2,235,734	1,992,129	2,105,444	2,239,740	2,427,383	2,368,311	2,345,507	2,108,082	2,105,201	2,342,289	26,750,481
	Total Wisconsin	2,555,304	2,275,026	2,415,476	2,151,220	2,277,216	2,409,749	2,598,032	2,532,982	2,515,386	2,279,284	2,269,864	2,522,185	28,801,726
	Total System Demand Obligation	2,823,350	2,525,076	2,675,443	2,421,968	2,555,712	2,662,724	2,861,400	2,799,870	2,768,700	2,548,382	2,545,067	2,802,904	31,990,596
	Total Native System from This Report	2,674,751	2,374,325	2,510,561	2,278,905	2,404,822	2,528,443	2,728,024	2,669,005	2,634,475	2,406,980	2,413,228	2,658,103	30,281,620
	Native System	2,617,410	2,383,454	2,468,490	2,293,255	2,375,730	2,492,576	2,719,321	2,662,434	2,593,958	2,429,115	2,377,611	2,628,968	30,042,322
	Variation form Native System	-2.19%	0.38%	-1.70%	0.63%	-1.22%	-1.44%	-0.32%	-0.25%	-1.56%	0.91%	-1.50%	-1.11%	-0.80%

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Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Maximum
M05C00	Mich Company Use	366	395	325	304	268	255	234	224	247	264	302	348	395
	Total Michigan Company Use	366	395	325	304	268	255	234	224	247	264	302	348	395
M05F60	Mich Wholesale Rate 60 <69KV	11,533	9,145	9,058	5,643	7,849	10,691	12,748	13,245	11,627	10,113	11,624	10,381	13,245
	Total Michigan Wholesale	11,533	9,145	9,058	5,643	7,849	10,691	12,748	13,245	11,627	10,113	11,624	10,381	13,245
M05L88	Mich Lighting Rate 88	396	504	524	595	715	756	716	617	529	437	443	395	756
M05L89	Mich Lighting Rate 89	2	3	3	3	4	4	4	2	2	3	1	1	4
M05U89	Mich Pumping Rate 89	2	2	4	2	2	3	10	1	3	10	2	4	3
M05LRS	Mich Residential Area Lighting	74	83	100	120	121	170	119	116	95	91	79	77	170
M05LSC	Mich Secondary Area Lighting	122	130	156	180	190	302	176	168	172	164	138	124	302
	Total Michigan Lighting & Other	596	722	787	900	1,032	1,235	1,025	904	801	705	663	600	1,235
M05P22	Mich Gen Pri CP1 Rate <69KV	2,708	2,383	2,366	2,215	1,679	3,265	2,166	3,086	2,421	2,770	1,720	2,396	1,679
M05P26	Mich Gen Pri Rate 26 Champion Firm	37,307	29,993	29,957	36,159	36,723	49,941	37,533	39,533	37,346	36,680	31,747	30,320	36,723
M05P46	Mich Gen Pri Rate 26 Champion Curt	1,430	1,536	1,507	0	1,735	1,114	0	1,793	0	1,529	825	1,506	1,735
M05P42	Mich Gen Pri Curt Rate <26KV	10,231	10,248	10,625	10,299	10,250	10,238	7,256	10,494	8,356	10,264	7,855	10,685	10,250
M05P27	Mich White Pine Mine 69 KV	4,202	3,449	3,536	4,544	4,508	4,323	4,264	4,014	5,346	4,657	5,078	4,901	4,508
M05P25	Mich Gen Pri Rate 25 Mines	294,839	280,191	282,165	309,982	313,287	296,445	313,405	303,689	303,368	306,240	302,797	284,523	313,287
	Total Michigan General Primary	350,718	327,799	330,156	363,199	368,181	365,326	364,624	362,610	356,837	362,141	350,020	334,331	368,181
M05S72	Mich Gen Sec Cg1	17,164	16,868	17,843	17,013	14,581	23,224	17,019	17,319	17,851	18,242	20,412	19,051	23,224
M05S40	Mich Gen Sec Cg5 Tou	1,245	1,233	1,422	829	725	1,862	1,118	1,758	1,409	1,314	1,497	1,459	1,862
M05S76	Mich Gen Sec Cg2 Tou	437	387	397	397	303	497	379	378	350	361	249	323	497
M05S74	Mich Gen Sec Cg3 Tou Demand	10,438	10,290	10,139	11,038	10,355	12,840	12,354	11,426	11,318	11,322	10,029	10,372	12,840
	Total Michigan General Secondary	29,284	28,778	29,801	29,277	25,963	38,423	30,870	30,881	30,928	31,238	32,187	31,205	38,423
M05R62	Mich Res Flat Rg1	34,459	30,686	30,751	25,643	21,617	39,052	33,261	36,272	30,575	28,562	35,602	35,564	39,052
M05R27	Mich Res TOU Rg2	1,884	1,753	1,496	1,377	1,134	1,453	1,302	1,250	1,489	1,405	1,876	1,876	1,453
	Total Michigan Residential	36,343	32,439	32,247	27,020	22,751	40,504	34,563	37,522	32,064	29,967	37,478	37,440	40,504
	Total Michigan Retail	416,940	389,738	392,992	420,396	417,927	445,488	431,082	431,917	420,629	424,051	420,348	403,576	448,344
	Total Michigan	428,839	399,278	402,374	426,344	426,044	456,435	444,064	445,386	432,504	434,429	432,275	414,306	461,983

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Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Maximum
W05C00	Wisc Company Use	14,940	15,713	13,715	14,003	13,297	14,411	13,674	13,265	13,920	13,534	14,332	15,932	15,932
	Total Wisconsin Company Use	14,940	15,713	13,715	14,003	13,297	14,411	13,674	13,265	13,920	13,534	14,332	15,932	15,932
W05F60	Wisc Wholesale 345KV	50,144	45,119	47,652	50,895	53,153	76,952	74,898	72,078	70,687	63,211	46,608	53,678	72,078
W05F63	Wisc Wholesale 34KV	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Wisc Wholesale (Excluding WPPI)	50,144	45,119	47,652	50,895	53,153	76,952	74,898	72,078	70,687	63,211	46,608	53,678	72,078
W05W01	Wisc WPPI Transmission	263,849	331,348	383,520	488,908	508,446	650,596	624,986	674,190	607,614	607,597	527,796	576,820	674,190
	Total WPPI Transmission	263,849	331,348	383,520	488,908	508,446	650,596	624,986	674,190	607,614	607,597	527,796	576,820	674,190
	Total Wisc Wholesale (Including WPPI)	313,993	376,467	431,172	539,803	561,599	727,548	699,883	746,268	678,301	670,808	574,404	630,497	746,268
W05L01	Wisc Lighting Rate 01	12,492	16,510	16,348	20,155	20,560	24,680	20,214	20,133	17,130	15,390	14,059	12,921	20,133
W05L05	Wisc Lighting Rate 05	1,219	1,383	1,528	1,729	1,956	2,662	2,767	2,659	1,849	1,326	1,254	1,251	2,659
W03U05	Mich Pumping Rate 89	1,266	1,274	1,279	1,267	1,116	1,988	1,876	1,913	1,834	1,614	1,300	1,486	1,913
W05L36	Wisc Lighting Rate 36 (Tou)	16,039	18,322	16,876	18,375	17,556	19,552	15,255	17,135	16,230	16,194	17,024	17,063	17,135
W05L46	Wisc Lighting Rate 46	2,218	2,474	2,308	2,558	2,379	2,880	2,469	2,517	2,263	2,267	2,314	2,282	2,517
W05LRS	Wisc Res Area Lighting	765	862	976	1,131	1,179	1,674	1,215	1,165	981	875	766	761	1,165
W05LSC	Wisc Gen Sec & Gen Pri Area Lighting	4,638	5,084	5,818	6,290	7,297	8,602	7,703	7,119	5,931	5,158	4,490	4,441	7,119
	Total Wisconsin Lighting & Other	38,637	45,910	45,133	51,504	52,045	62,038	51,498	52,642	46,218	42,823	41,207	40,204	62,038
W05P28	Wisc Gen Pri Cp1 8KV Customers	48,522	46,400	47,149	48,768	48,085	52,772	50,610	54,571	56,023	54,677	46,092	46,848	54,571
W05P81	Wisc Gen Pri Cp3a <13KV	2,091	1,971	2,320	1,798	1,718	1,976	2,062	2,038	2,045	1,916	1,752	1,869	2,038
	Total Wisconsin GP Low Voltage	50,613	48,371	49,469	50,566	49,803	54,748	52,672	56,610	58,068	56,594	47,845	48,717	56,610
W05P27	Wisc Gen Pri Cp1 13KV Customers	197,323	197,967	200,011	222,066	222,576	251,102	265,191	264,987	253,479	254,672	204,679	197,163	264,987
W05P26	Wisc Gen Pri Cp1 26KV Customers	579,934	595,776	589,082	630,211	640,204	697,747	688,334	698,430	689,877	683,543	590,290	568,482	698,430
W05P25	Wisc Gen Pri Cp1 34KV Customers	104,424	101,521	100,988	108,456	107,307	112,749	108,398	102,983	105,501	103,081	94,160	95,824	102,983
W05P34	Wisc Gen Pri Cp1 26KV Charter	5,790	5,633	5,599	5,606	5,768	5,813	2,410	2,409	2,431	2,433	2,442	2,363	2,409
W05P33	Wisc Gen Pri Cp1 34KV-Stora Enso Kimberly	32,572	32,399	28,836	32,395	29,311	33,229	32,808	37,053	37,130	35,407	33,771	27,640	37,053
W05P21	Wisc Gen Pri Cp2m 13KV	3,350	3,562	5,626	5,643	6,010	5,587	6,525	6,663	4,339	6,535	6,001	6,160	6,663
W05P22	Wisc Gen Pri Cp2m 26KV	41,953	41,817	42,172	40,596	39,885	41,748	41,329	41,226	31,680	42,750	39,215	44,777	41,226
W05P20	Wisc Gen Pri Cp2m 26KV Charter	56,582	49,132	52,213	54,351	53,455	52,329	58,596	61,714	61,215	59,536	58,588	59,852	61,714
W05P29	Wisc Gen Pri Cp3 13KV	2,820	3,345	3,634	3,248	3,675	2,842	3,736	2,533	3,737	3,691	3,974	3,616	2,533
W05P30	Wisc Gen Pri Cp3 26KV	36,612	42,271	40,451	38,103	32,481	34,167	39,095	35,874	40,756	37,974	32,542	40,289	35,874
W05P40	Wisc Gen Pri Cp3 34KV	8,085	8,124	7,432	6,801	7,509	7,424	5,027	6,365	6,977	6,792	7,448	6,940	6,365
W05P82	Wisc Gen Pri Cp3a 13KV	698	632	646	586	613	587	608	592	602	620	627	709	592
W05P83	Wisc Gen Pri Cp3a 26KV	12,031	12,252	12,681	11,008	11,997	14,580	16,130	13,121	14,966	15,001	12,423	12,055	13,121
W05P84	Wisc Gen Pri Cp3a 34KV	25,704	28,282	28,182	27,636	26,420	30,208	25,841	26,488	31,165	29,506	25,691	25,320	26,488
W05P54	Wisc Gen Pri CpFN 34KV	11,302	12,094	12,519	13,142	12,900	13,331	13,397	11,576	13,765	13,114	8,476	11,850	11,576
	Total Wisconsin GP Medium Voltage	1,119,180	1,134,808	1,130,073	1,199,848	1,200,113	1,303,442	1,307,425	1,312,013	1,297,621	1,294,653	1,120,328	1,103,042	1,312,013
W05P38	Wisc Gen Pri Cp1 138KV	13,080	7,203	8,227	7,075	9,348	6,696	6,827	6,881	9,017	8,618	5,907	8,272	6,881
W05P39	Wisc Gen Pri CpFN 138KV	13,460	13,213	13,377	13,350	13,309	13,045	13,121	12,936	12,999	12,854	13,040	13,210	12,936
W05P32	Wisc Gen Pri Cp3 138KV Stora Enso Niagra	25,491	23,063	23,937	32,286	25,906	26,869	2,277	27,575	24,919	27,473	21,286	25,939	27,575
	Total Wisconsin GP High Voltage	52,032	43,479	45,541	52,711	48,563	46,610	22,224	47,392	46,935	48,945	40,233	47,422	47,392
	Total Wisconsin General Primary	1,221,825	1,226,658	1,225,083	1,303,125	1,298,479	1,404,801	1,382,321	1,416,015	1,402,623	1,400,192	1,208,406	1,199,181	1,416,015

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Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Maximum
W05S44	Wisc Gen Sec Cg1 Flat	368,537	357,383	366,886	335,869	335,073	475,724	525,773	537,336	538,186	479,506	355,488	382,004	538,186
W05S42	Wisc Gen Sec Cg6 Small Tou	12,063	9,677	10,736	5,777	6,991	11,306	13,740	17,150	14,038	11,240	10,359	12,296	14,038
W05S34	Wisc Gen Sec Cg2 Flat Demand	198,789	201,163	206,996	194,073	205,542	223,895	248,411	250,385	262,479	252,144	212,962	214,336	262,479
W05S70	Wisc Gen Sec Cg3 Tou Demand	966,596	973,876	1,011,429	999,403	989,223	1,146,557	1,208,010	1,170,048	1,197,272	1,166,381	973,250	989,653	1,197,272
W05S71	Wisc Gen Sec Cg3c Curt	4,106	4,146	4,064	5,083	5,362	4,712	6,278	6,480	5,272	5,684	4,885	4,514	5,272
W05S80	Wisc Gen Sec Cg3a Coop	3,653	3,318	3,424	3,561	3,419	4,295	3,742	4,285	3,707	3,873	2,296	3,376	3,707
	Total Cg3, Cg3A and Cg3C	974,355	981,339	1,018,918	1,008,047	998,005	1,155,563	1,218,030	1,180,813	1,206,251	1,175,937	980,430	997,544	1,206,251
	Total Wisconsin General Secondary	1,553,745	1,549,563	1,603,535	1,543,766	1,545,611	1,866,488	2,005,954	1,985,684	2,020,954	1,918,827	1,559,239	1,606,180	2,020,954
W05R11	Wisc Res Flat Rg1 & Fg1	1,581,586	1,451,082	1,390,220	1,192,297	1,128,507	2,503,624	2,525,834	2,395,620	2,242,716	1,727,315	1,491,314	1,661,744	2,525,834
W05R17	Wisc Res Tou Rg2	109,773	85,658	71,144	68,609	49,125	97,906	110,093	87,301	101,726	85,005	87,586	95,530	110,093
	Total Wisconsin Residential	1,691,359	1,536,740	1,461,364	1,260,906	1,177,633	2,601,529	2,635,928	2,482,921	2,344,442	1,812,320	1,578,901	1,757,274	2,635,928
	Dates and Times of Non Coin Peaks													
	Mich Wholesale	01/18/02	02/11/02	03/04/02	04/18/02	05/02/02	06/30/02	07/17/02	08/29/02	09/09/02	10/22/02	11/18/02	12/03/02	
		8:00	8:00	8:00	20:00	9:00	22:00	14:00	21:00	17:00	10:00	18:00	18:00	
	Mich Lighting	01/10/02	02/27/02	03/09/02	04/18/02	05/09/02	06/26/02	07/18/02	08/06/02	09/23/02	10/01/02	11/11/02	12/17/02	
		18:00	6:00	6:00	23:00	2:00	1:00	22:00	22:00	20:00	2:00	19:00	19:00	
	Mich General Primary	01/13/02	02/24/02	03/28/02	04/30/02	05/19/02	06/27/02	07/26/02	08/19/02	09/28/02	10/32/2002	11/30/02	12/06/02	
		12:00	5:00	21:00	22:00	15:00	5:00	16:00	21:00	0:00	0:00	20:00	18:00	
	Mich General Secondary	01/03/02	02/11/02	03/05/02	04/24/02	05/30/02	06/25/02	07/17/02	08/12/02	09/09/02	10/14/02	11/06/02	12/09/02	
		9:00	11:00	11:00	11:00	14:00	14:00	14:00	14:00	14:00	9:00	11:00	11:00	
	Mich Residential	01/01/02	02/03/02	03/03/02	04/03/02	05/09/02	06/30/02	07/01/02	08/11/02	09/09/02	10/20/02	11/30/02	12/22/02	
		19:00	18:00	20:00	20:00	21:00	18:00	18:00	19:00	21:00	19:00	18:00	18:00	
	Wisc Wholesale	01/03/02	02/13/02	03/19/02	04/18/02	05/31/02	06/24/02	07/30/02	08/01/02	09/09/02	10/01/02	11/06/02	12/02/02	
		18:00	21:00	12:00	14:00	13:00	17:00	17:00	17:00	15:00	15:00	11:00	18:00	
	Wisc WPPI	01/28/02	02/19/02	03/01/02	04/03/02	05/14/02	06/25/02	07/17/02	08/08/02	09/06/02	10/01/02	11/21/02	12/26/02	
		16:00	12:00	8:00	22:00	11:00	19:00	14:00	12:00	14:00	9:00	18:00	19:00	
	Wisc Lighting	01/12/02	02/27/02	03/14/02	04/21/02	05/30/02	06/30/02	07/17/02	08/01/02	09/29/02	10/01/02	11/29/02	12/07/02	
		18:00	21:00	20:00	21:00	22:00	22:00	22:00	22:00	21:00	21:00	18:00	18:00	
	Wisc General Primary	01/08/02	02/21/02	03/05/02	04/17/02	05/30/02	06/25/02	07/16/02	08/01/02	09/09/02	10/01/02	11/12/02	12/05/02	
		11:00	12:00	9:00	13:00	14:00	11:00	12:00	12:00	14:00	12:00	11:00	12:00	
	Wisc General Secondary	01/07/02	02/28/02	03/05/02	04/16/02	05/30/02	06/25/02	07/17/02	08/01/02	09/09/02	10/01/02	11/05/02	12/05/02	
		11:00	11:00	12:00	14:00	14:00	14:00	14:00	14:00	14:00	14:00	11:00	11:00	
	Wisc Residential	01/01/02	02/25/02	03/04/02	04/16/02	05/30/02	06/30/02	07/21/02	08/01/02	09/09/02	10/01/02	11/30/02	12/08/02	
		18:00	19:00	19:00	21:00	22:00	18:00	18:00	19:00	20:00	19:00	18:00	19:00	

Wisconsin Electric Power Company
2005 Class Load Analysis
Native System Peak
Generation Level

8/21/07 11:28

Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average
M05C00	Mich Company Use	295	295	243	304	262	212	231	200	212	239	226	272	249
	Total Michigan Company Use	295	295	243	304	262	212	231	200	212	239	226	272	249
M05F60	Mich Wholesale Rate 60 <69KV	11,533	8,816	9,058	4,591	6,249	9,778	9,850	11,021	11,054	8,958	6,529	10,381	8,985
	Total Michigan Wholesale	11,533	8,816	9,058	4,591	6,249	9,778	9,850	11,021	11,054	8,958	6,529	10,381	8,985
M05L88	Mich Lighting Rate 88	396	504	524	0	0	0	0	0	0	0	443	395	188
M05L89	Mich Lighting Rate 89	2	3	3	0	0	0	0	0	0	0	1	1	1
M05U89	Mich Pumping Rate 89	1	1	1	2	1	2	1	1	1	2	2	1	1
M05LRS	Mich Residential Area Lighting	74	83	100	0	0	0	0	0	0	0	79	77	34
M05LSC	Mich Secondary Area Lighting	122	130	156	0	0	0	0	0	0	0	138	124	56
	Total Michigan Lighting & Other	595	722	784	2	1	2	1	1	1	2	663	598	281
M05P22	Mich Gen Pri CP1 Rate <69KV	2,399	2,730	2,758	3,733	3,772	3,678	4,176	3,314	3,495	3,723	2,681	2,724	3,265
M05P26	Mich Gen Pri Rate 26 Champion Firm	30,416	28,082	29,868	33,110	25,178	36,948	39,285	37,935	30,050	35,655	29,101	28,117	31,979
M05P46	Mich Gen Pri Rate 26 Champion Curt	1,648	1,550	1,379	1,703	0	1,739	1,687	1,508	1,722	1,760	1,247	1,808	1,479
M05P42	Mich Gen Pri Curt Rate <26KV	9,504	10,217	10,024	9,772	10,082	10,167	9,831	9,913	10,418	10,332	10,382	10,659	10,108
M05P27	Mich White Pine Mine 69 KV	3,932	3,840	3,511	3,924	4,016	4,054	4,163	3,801	4,056	4,873	4,366	4,710	4,104
M05P25	Mich Gen Pri Rate 25 Mines	274,737	252,694	269,980	258,807	285,330	278,038	279,731	253,161	272,029	196,379	275,122	249,944	262,163
	Total Michigan General Primary	322,635	299,112	317,520	311,048	328,378	334,623	338,873	309,633	321,770	252,723	322,900	297,962	313,098
M05S72	Mich Gen Sec Cg1	10,866	9,412	9,998	15,714	12,958	16,882	14,151	12,478	13,661	16,148	12,931	11,897	13,091
M05S40	Mich Gen Sec Cg5 Tou	1,692	2,080	2,177	770	671	2,231	1,505	2,286	2,211	1,601	2,308	2,409	1,828
M05S76	Mich Gen Sec Cg2 Tou	371	340	340	390	302	436	371	326	342	344	220	288	339
M05S74	Mich Gen Sec Cg3 Tou Demand	8,874	9,047	8,673	10,857	10,611	11,263	12,102	9,863	11,048	10,807	8,848	9,506	10,125
	Total Michigan General Secondary	21,803	20,880	21,188	27,732	24,542	30,812	28,130	24,953	27,262	28,900	24,307	24,100	25,384
M05R62	Mich Res Flat Rg1	33,242	30,686	28,163	15,175	15,502	30,284	25,975	25,321	27,259	19,622	30,834	33,490	26,296
M05R27	Mich Res TOU Rg2	1,715	1,753	1,573	543	483	1,501	875	1,169	1,055	972	1,464	1,640	1,228
	Total Michigan Residential	34,957	32,439	29,735	15,718	15,985	31,785	26,850	26,490	28,314	20,594	32,298	35,129	27,524
	Total Michigan Retail	379,990	353,152	369,227	354,499	368,906	397,222	393,854	361,077	377,346	302,219	380,168	357,789	366,287
	Total Michigan	391,818	362,263	378,528	359,395	375,418	407,212	403,936	372,297	388,612	311,416	386,922	368,443	375,522

Wisconsin Electric Power Company
2005 Class Load Analysis
Native System Peak
Generation Level

8/21/07 11:28

Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average
W05C00	Wisc Company Use	12,060	11,749	10,269	14,003	13,035	11,977	13,520	11,826	11,940	12,250	10,698	12,428	12,146
	Total Wisconsin Company Use	12,060	11,749	10,269	14,003	13,035	11,977	13,520	11,826	11,940	12,250	10,698	12,428	12,146
W05F60	Wisc Wholesale 345KV	46,744	42,855	44,154	50,697	46,925	69,830	59,844	62,375	63,736	59,802	45,858	51,266	53,674
W05F63	Wisc Wholesale 34KV	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Wisc Wholesale (Excluding WPPI)	46,744	42,855	44,154	50,697	46,925	69,830	59,844	62,375	63,736	59,802	45,858	51,266	53,674
W05W01	Wisc WPPI Transmission	230,101	242,375	233,180	478,680	507,423	648,550	609,642	652,706	596,362	601,459	527,796	576,820	492,091
	Total WPPI Transmission	230,101	242,375	233,180	478,680	507,423	648,550	609,642	652,706	596,362	601,459	527,796	576,820	492,091
	Total Wisc Wholesale (Including WPPI)	276,844	285,230	277,335	529,376	554,348	718,381	669,487	715,081	660,099	661,262	573,653	628,086	545,765
W05L01	Wisc Lighting Rate 01	12,492	16,510	16,348	0	0	0	0	0	0	0	14,059	12,921	6,027
W05L05	Wisc Lighting Rate 05	1,219	1,383	1,528	0	0	0	0	0	0	0	1,254	1,251	553
W03U05	Mich Pumping Rate 89	1,004	1,217	814	1,183	1,347	1,241	1,227	1,969	974	813	547	819	1,096
W05L36	Wisc Lighting Rate 36 (Tou)	16,039	18,322	16,876	0	0	0	0	0	0	0	17,024	17,063	7,110
W05L46	Wisc Lighting Rate 46	2,218	2,474	2,308	0	0	0	0	0	0	0	2,314	2,282	966
W05LRS	Wisc Res Area Lighting	765	862	976	0	0	0	0	0	0	0	766	761	344
W05LSC	Wisc Gen Sec & Gen Pri Area Lighting	4,638	5,084	5,818	0	0	0	0	0	0	0	4,490	4,441	2,039
	Total Wisconsin Lighting & Other	38,375	45,852	44,668	1,183	1,347	1,241	1,227	1,969	974	813	40,453	39,537	18,137
W05P28	Wisc Gen Pri Cp1 8KV Customers	42,791	41,679	41,698	48,943	48,601	52,625	53,138	51,195	52,938	53,712	40,699	42,663	47,557
W05P81	Wisc Gen Pri Cp3a <13KV	1,470	1,365	1,148	1,833	1,879	1,478	1,864	1,642	1,684	1,720	1,383	1,394	1,572
	Total Wisconsin GP Low Voltage	44,261	43,044	42,846	50,776	50,479	54,104	55,002	52,837	54,622	55,432	42,082	44,057	49,129
W05P27	Wisc Gen Pri Cp1 13KV Customers	170,350	169,228	169,350	220,256	217,523	240,230	247,081	241,871	244,531	243,406	170,327	171,899	208,838
W05P26	Wisc Gen Pri Cp1 26KV Customers	516,656	540,103	535,362	634,095	608,334	656,645	675,775	651,399	660,571	652,485	516,926	511,012	596,614
W05P25	Wisc Gen Pri Cp1 34KV Customers	101,858	98,769	101,261	108,100	112,801	104,371	105,472	106,650	103,886	104,671	95,700	95,451	103,249
W05P34	Wisc Gen Pri Cp1 26KV Charter	5,668	5,716	5,869	5,530	5,768	5,996	2,344	2,321	2,317	2,458	2,418	2,467	4,073
W05P33	Wisc Gen Pri Cp1 34KV-Stora Enso Kimberly	31,955	31,262	29,652	32,958	30,849	34,947	35,983	37,258	36,289	36,032	33,308	29,613	33,342
W05P21	Wisc Gen Pri Cp2m 13KV	2,908	5,537	5,419	5,740	5,744	5,720	6,219	6,477	4,193	6,545	5,446	3,818	5,314
W05P22	Wisc Gen Pri Cp2m 26KV	35,924	33,146	32,791	40,456	37,442	39,398	38,238	41,826	40,674	40,748	38,567	37,522	38,061
W05P20	Wisc Gen Pri Cp2m 26KV Charter	52,221	29,416	56,586	49,215	49,608	48,318	56,351	51,534	61,402	63,197	35,428	54,479	50,646
W05P29	Wisc Gen Pri Cp3 13KV	2,550	2,455	2,378	3,413	3,677	2,547	3,723	1,939	2,499	3,167	2,103	2,315	2,731
W05P30	Wisc Gen Pri Cp3 26KV	28,851	31,347	20,790	36,451	38,202	29,157	34,924	34,643	30,252	30,461	23,030	28,445	30,546
W05P40	Wisc Gen Pri Cp3 34KV	6,039	4,888	5,202	5,908	7,665	5,459	5,358	5,282	5,848	5,449	5,178	5,370	5,637
W05P82	Wisc Gen Pri Cp3a 13KV	606	610	516	577	592	532	548	512	533	572	567	588	563
W05P83	Wisc Gen Pri Cp3a 26KV	10,873	9,925	10,311	11,156	12,278	12,593	14,473	12,789	13,915	12,847	9,616	10,882	11,805
W05P84	Wisc Gen Pri Cp3a 34KV	26,699	25,294	24,245	27,214	26,292	27,338	28,157	27,700	29,043	28,114	24,073	22,946	26,426
W05P54	Wisc Gen Pri CpFN 34KV	12,312	13,260	12,377	12,706	12,595	11,855	13,362	12,517	13,319	13,236	12,269	12,480	12,691
	Total Wisconsin GP Medium Voltage	1,005,468	1,000,956	1,012,111	1,193,774	1,169,371	1,225,106	1,268,010	1,234,718	1,249,274	1,243,389	974,955	989,286	1,130,535
W05P38	Wisc Gen Pri Cp1 138KV	10,138	9,827	10,207	7,078	9,288	5,743	8,169	6,232	7,537	8,569	6,054	10,116	8,246
W05P39	Wisc Gen Pri CpFN 138KV	13,422	13,394	13,400	13,157	13,326	13,030	13,016	12,917	12,882	12,902	13,100	13,223	13,147
W05P32	Wisc Gen Pri Cp3 138KV Stora Enso Niagra	26,594	24,100	24,800	26,639	26,084	26,860	27,916	25,098	25,948	23,004	24,321	28,463	25,819
	Total Wisconsin GP High Voltage	50,153	47,321	48,407	46,875	48,697	45,634	49,101	44,247	46,367	44,475	43,476	51,801	47,213
	Total Wisconsin General Primary	1,099,882	1,091,321	1,103,364	1,291,425	1,268,548	1,324,843	1,372,113	1,331,801	1,350,263	1,343,296	1,060,512	1,085,145	1,226,876

Wisconsin Electric Power Company
2005 Class Load Analysis
Native System Peak
Generation Level

8/21/07 11:28

Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average
W05S44	Wisc Gen Sec Cg1 Flat	320,630	289,779	267,696	335,869	347,074	500,487	508,989	500,606	474,089	475,787	316,281	312,305	387,466
W05S42	Wisc Gen Sec Cg6 Small Tou	16,086	16,697	16,436	5,777	6,445	18,436	14,942	20,224	16,973	12,225	16,796	18,490	14,960
W05S34	Wisc Gen Sec Cg2 Flat Demand	165,224	167,158	163,083	194,073	201,384	203,340	249,511	226,864	220,155	230,174	177,549	172,505	197,585
W05S70	Wisc Gen Sec Cg3 Tou Demand	780,280	728,802	757,293	999,403	969,703	955,790	1,210,953	1,049,877	1,035,498	1,055,725	732,152	788,706	922,015
W05S71	Wisc Gen Sec Cg3c Curt	2,528	2,777	2,798	5,083	5,354	5,303	5,062	5,497	4,715	4,963	3,268	3,443	4,233
W05S80	Wisc Gen Sec Cg3a Coop	3,154	2,927	2,881	3,561	3,468	3,851	4,250	4,078	3,693	3,762	2,534	2,722	3,407
	Total Cg3, Cg3A and Cg3C	785,962	734,507	762,973	1,008,047	978,524	964,944	1,220,265	1,059,452	1,043,906	1,064,451	737,954	794,872	929,655
	Total Wisconsin General Secondary	1,287,902	1,208,141	1,210,186	1,543,766	1,533,428	1,687,206	1,993,707	1,807,146	1,755,123	1,782,637	1,248,580	1,298,171	1,529,666
W05R11	Wisc Res Flat Rg1 & Fg1	1,557,418	1,324,999	1,291,668	652,704	682,454	2,334,868	1,760,882	2,253,393	1,880,176	1,358,026	1,438,810	1,662,402	1,516,483
W05R17	Wisc Res Tou Rg2	84,782	84,714	74,779	26,574	24,615	89,692	63,754	81,097	72,077	50,220	75,826	82,252	67,532
	Total Wisconsin Residential	1,642,200	1,409,713	1,366,447	679,277	707,068	2,424,560	1,824,637	2,334,491	1,952,253	1,408,246	1,514,637	1,744,654	1,584,015
	Total Wisconsin Retail	4,068,359	3,755,027	3,724,666	3,515,651	3,510,391	5,437,849	5,191,683	5,475,407	5,058,613	4,534,993	3,864,182	4,167,506	4,358,694
	Total Wisconsin	4,357,263	4,052,007	4,012,270	4,059,031	4,077,773	6,168,208	5,874,690	6,202,314	5,730,652	5,208,504	4,448,534	4,808,020	4,916,605
	Total Native System from This Report	4,518,981	4,171,894	4,157,618	3,939,746	3,945,768	5,926,870	5,668,983	5,921,905	5,522,902	4,918,461	4,307,661	4,599,642	4,800,036
	Native System Peak	4,481,000	4,193,000	4,170,000	3,923,000	3,927,000	5,885,000	5,601,000	5,934,000	5,523,000	4,914,000	4,275,000	4,583,000	4,784,083
	Date of Native System Peak	1/17/2005	2/17/2005	3/1/2005	4/19/2005	5/9/2005	6/24/2005	7/25/2005	8/9/2005	9/13/2005	10/4/2005	11/30/2005	12/19/2005	
	Hour of Native System Peak	18:00	19:00	19:00	14:00	12:00	16:00	14:00	17:00	17:00	16:00	18:00	18:00	
	Variation from Native System Peak	0.85%	-0.50%	-0.30%	0.43%	0.48%	0.71%	1.21%	-0.20%	0.00%	0.09%	0.76%	0.36%	0.33%

Wisconsin Electric Power Company
2005 Class Load Analysis
Energy Report (MWH)
Customer Level

9/11/09 14:34

Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
M05C00	Mich Company Use	168	164	150	124	114	107	103	102	101	105	131	149	1,519
	Total Michigan Company Use	168	164	150	124	114	107	103	102	101	105	131	149	1,519
M05F60	Mich Wholesale Rate 60 <69KV	5,305	4,019	4,304	2,713	3,275	3,981	5,373	5,541	5,008	3,629	4,258	4,604	52,012
	Total Michigan Wholesale	5,305	4,019	4,304	2,713	3,275	3,981	5,373	5,541	5,008	3,629	4,258	4,604	52,012
M05L88	Mich Lighting Rate 88	163	173	177	168	181	170	173	170	164	160	173	167	2,042
M05L89	Mich Lighting Rate 89	1	1	1	1	1	1	1	0	1	1	1	0	
M05U89	Mich Pumping Rate 89	1	1	1	1	1	1	1	0	0	1	1	1	9
M05LRS	Mich Residential Area Lighting	31	28	34	34	31	38	29	32	30	33	31	33	383
M05LSC	Mich Secondary Area Lighting	50	45	53	51	48	68	43	46	53	60	54	52	624
	Total Michigan Lighting & Other	246	248	265	254	262	278	247	250	248	255	259	254	3,067
M05P22	Mich Gen Pri CP1 Rate <69KV	1,728	1,602	1,799	1,765	1,847	2,110	2,143	2,190	1,956	1,832	1,625	1,760	22,356
M05P26	Mich Gen Pri Rate 26 Champion Firm	21,523	19,156	21,713	22,877	23,941	24,852	25,530	26,750	24,613	24,590	21,715	21,128	278,386
M05P46	Mich Gen Pri Rate 26 Champion Curt	1,033	902	969	679	673	919	828	922	600	1,038	945	978	10,486
M05P42	Mich Gen Pri Curt Rate <26KV	7,039	6,284	6,999	6,492	6,752	6,475	6,584	6,603	6,318	6,643	6,132	6,410	78,732
M05P27	Mich White Pine Mine 69 KV	2,899	2,484	2,858	2,924	3,096	2,979	3,152	2,990	3,258	3,501	3,471	3,525	37,138
M05P25	Mich Gen Pri Rate 25 Mines	187,152	161,391	181,794	194,536	208,358	201,789	210,473	203,468	194,845	197,470	177,581	171,300	2,290,157
	Total Michigan General Primary	221,374	191,819	216,132	229,272	244,667	239,124	248,710	242,923	231,590	235,074	211,467	205,102	2,717,255
M05S72	Mich Gen Sec Cg1	6,114	5,361	6,483	5,702	4,940	7,852	5,749	5,577	5,874	6,260	6,782	6,607	73,300
M05S40	Mich Gen Sec Cg5 Tou	902	925	1,100	876	711	972	862	1,000	926	936	1,097	1,261	11,566
M05S76	Mich Gen Sec Cg2 Tou	225	188	210	191	158	234	185	191	175	172	126	166	2,221
M05S74	Mich Gen Sec Cg3 Tou Demand	5,375	4,989	5,394	5,340	5,544	6,034	6,071	5,765	5,685	5,405	5,085	5,460	66,147
	Total Michigan General Secondary	12,616	11,462	13,187	12,109	11,352	15,092	12,866	12,534	12,660	12,772	13,090	13,494	153,234
M05R62	Mich Res Flat Rg1	14,949	12,807	13,918	11,824	10,038	14,849	13,078	12,862	11,088	12,421	14,095	15,416	157,346
M05R27	Mich Res TOU Rg2	903	769	785	611	506	647	495	505	437	562	687	847	7,753
	Total Michigan Residential	15,852	13,576	14,703	12,435	10,544	15,496	13,573	13,367	11,525	12,983	14,781	16,264	165,099
	Total Michigan Retail	250,088	217,105	244,288	254,071	266,825	269,990	275,397	269,073	256,023	261,084	239,598	235,113	3,038,655
	Total Michigan	255,561	221,288	248,742	256,908	270,215	274,078	280,873	274,717	261,133	264,818	243,986	239,865	3,092,185

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Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
W05C00	Wisc Company Use	6,831	6,508	6,286	5,675	5,635	6,036	6,003	6,033	5,671	5,346	6,176	6,770	72,969
	Total Wisconsin Company Use	6,831	6,508	6,286	5,675	5,635	6,036	6,003	6,033	5,671	5,346	6,176	6,770	72,969
W05F60	Wisc Wholesale 345KV	25,539	22,150	24,543	24,082	23,660	33,479	34,946	35,167	30,613	27,075	23,581	27,886	332,722
W05F63	Wisc Wholesale 34KV													0
	Total Wisc Wholesale (Excluding WPPI)	25,539	22,150	24,543	24,082	23,660	33,479	34,946	35,167	30,613	27,075	23,581	27,886	332,722
W05W01	Wisc WPPI Transmission	151,990	148,032	164,639	274,853	288,621	335,461	344,212	345,365	317,507	309,785	296,798	319,430	3,296,693
	Total WPPI Transmission	151,990	148,032	164,639	274,853	288,621	335,461	344,212	345,365	317,507	309,785	296,798	319,430	3,296,693
	Total Wisc Wholesale (Including WPPI)	177,529	170,182	189,182	298,935	312,281	368,940	379,158	380,532	348,120	336,860	320,379	347,316	3,629,415
W05L01	Wisc Lighting Rate 01	5,168	5,674	5,524	5,688	5,210	5,555	4,892	5,551	5,315	5,633	5,507	5,486	65,203
W05L05	Wisc Lighting Rate 05	504	475	516	488	496	599	669	733	574	485	491	531	6,563
W05U05	Wisc Pumping Rate 05	505	475	516	488	496	600	669	733	574	485	491	531	6,564
W05L36	Wisc Lighting Rate 36 (Tou)	6,636	6,297	5,703	5,185	4,449	4,400	3,692	4,724	5,035	5,927	6,669	7,245	65,962
W05L46	Wisc Lighting Rate 46	917	850	780	722	603	648	598	694	702	830	906	969	9,219
W05LRS	Wisc Res Area Lighting	317	296	330	319	299	377	294	321	304	320	300	323	3,801
W05LSC	Wisc Gen Sec & Gen Pri Area Lighting	1,919	1,747	1,966	1,775	1,849	1,936	1,864	1,963	1,840	1,888	1,759	1,886	22,392
	Total Wisconsin Lighting & Other	15,966	15,816	15,335	14,665	13,402	14,115	12,678	14,720	14,343	15,568	16,124	16,971	179,703
W05P28	Wisc Gen Pri Cp1 8KV Customers	26,019	23,344	25,367	24,478	24,664	27,160	27,799	28,589	27,055	25,184	24,010	24,957	308,628
W05P81	Wisc Gen Pri Cp3a <13KV	1,052	958	1,048	1,026	1,070	1,119	1,095	1,130	1,059	1,059	988	1,008	12,612
	Total Wisconsin GP Low Voltage	27,071	24,302	26,416	25,504	25,734	28,279	28,893	29,719	28,114	26,243	24,998	25,965	321,240
W05P27	Wisc Gen Pri Cp1 13KV Customers	112,658	102,249	112,917	109,413	115,049	131,880	136,002	141,058	129,908	118,172	106,641	109,481	1,425,427
W05P26	Wisc Gen Pri Cp1 26KV Customers	335,064	312,677	342,351	330,146	337,001	374,101	370,464	391,569	364,476	345,975	309,462	305,403	4,118,688
W05P25	Wisc Gen Pri Cp1 34KV Customers	63,879	57,954	63,102	63,028	64,941	67,796	65,275	66,687	60,977	59,292	55,668	57,307	745,908
W05P34	Wisc Gen Pri Cp1 26KV Charter	3,958	3,342	3,789	3,638	3,650	3,869	1,622	1,682	1,664	1,702	1,609	1,647	32,170
W05P33	Wisc Gen Pri Cp1 34KV-Stora Enso Kimberly	23,017	21,158	22,433	23,177	18,372	24,116	25,598	26,247	25,120	24,932	22,591	20,604	277,365
W05P21	Wisc Gen Pri Cp2m 13KV	2,289	2,707	2,378	3,489	3,428	3,824	3,745	4,008	3,713	3,301	3,004	2,531	38,417
W05P22	Wisc Gen Pri Cp2m 26KV	24,663	22,744	24,767	24,349	25,187	25,110	26,213	27,208	25,155	26,613	23,714	25,114	300,836
W05P20	Wisc Gen Pri Cp2m 26KV Charter	33,184	22,419	25,466	27,065	27,701	29,978	23,236	34,849	31,471	35,740	30,227	30,455	351,791
W05P29	Wisc Gen Pri Cp3 13KV	2,107	2,033	2,433	2,191	2,351	2,274	2,058	2,451	2,307	2,514	2,386	2,386	27,490
W05P30	Wisc Gen Pri Cp3 26KV	18,663	18,746	18,978	18,731	19,475	21,774	16,976	22,002	20,854	21,033	17,939	17,700	232,870
W05P40	Wisc Gen Pri Cp3 34KV	3,016	2,895	3,259	3,159	3,068	3,141	2,523	2,969	2,738	2,744	2,470	2,737	
W05P82	Wisc Gen Pri Cp3a 13KV	294	269	281	257	259	244	256	283	273	293	302	296	3,308
W05P83	Wisc Gen Pri Cp3a 26KV	6,402	6,107	6,607	5,845	6,227	7,262	7,535	7,723	7,256	7,494	6,675	7,034	82,167
W05P84	Wisc Gen Pri Cp3a 34KV	17,562	16,143	17,731	17,329	17,906	18,459	16,359	17,940	18,531	17,748	15,693	14,844	206,245
W05P54	Wisc Gen Pri CpFN 34KV	8,053	7,460	8,222	7,886	8,302	8,265	8,613	8,292	8,283	8,521	8,071	7,306	
	Total Wisconsin GP Medium Voltage	654,812	598,902	654,714	639,703	652,915	722,093	706,475	754,968	702,724	676,074	606,452	604,845	7,974,676
W05P38	Wisc Gen Pri Cp1 138KV	6,785	5,339	6,461	6,339	6,308	5,328	5,855	5,196	6,329	5,664	6,468	6,971	73,045
W05P39	Wisc Gen Pri CpFN 138KV	9,664	8,725	7,980	9,359	9,631	9,284	9,572	9,577	9,074	9,525	9,235	9,608	111,234
W05P32	Wisc Gen Pri Cp3 138KV Stora Enso Niagra	19,984	17,431	20,352	21,584	20,723	20,964	19,825	23,624	22,458	22,079	19,209	21,199	249,431
	Total Wisconsin GP High Voltage	36,432	31,495	34,793	37,282	36,661	35,575	35,252	38,398	37,861	37,268	34,913	37,778	433,710
	Total Wisconsin General Primary	718,315	654,700	715,923	702,489	715,311	785,947	770,620	823,084	768,700	739,586	666,363	668,588	8,729,626

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Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
W05S44	Wisc Gen Sec Cg1 Flat	176,158	154,967	166,369	137,463	144,369	182,728	205,890	197,276	174,535	158,777	155,170	170,329	2,024,032
W05S42	Wisc Gen Sec Cg6 Small Tou	8,543	7,391	8,261	6,538	6,790	7,986	8,503	8,785	7,062	7,109	7,949	9,642	94,559
W05S34	Wisc Gen Sec Cg2 Flat Demand	89,498	81,838	89,901	78,844	84,128	90,197	99,887	101,171	95,679	88,882	86,812	89,268	1,076,107
W05S70	Wisc Gen Sec Cg3 Tou Demand	444,120	405,850	466,034	406,660	421,762	484,448	540,456	538,983	493,459	463,115	424,881	432,066	5,521,833
W05S71	Wisc Gen Sec Cg3c Curt	2,101	1,924	2,095	2,097	2,388	2,660	2,530	2,825	2,515	2,644	2,448	2,175	28,402
W05S80	Wisc Gen Sec Cg3a Coop	1,573	1,431	1,595	1,591	1,670	2,044	1,843	1,939	1,733	1,660	1,025	1,448	19,552
	Total Cg3, Cg3A and Cg3C	447,794	409,205	469,724	410,347	425,820	489,151	544,829	543,746	497,707	467,419	428,354	435,690	5,569,787
	Total Wisconsin General Secondary	721,993	653,402	734,256	633,193	661,108	770,063	859,110	850,978	774,983	722,187	678,286	704,929	8,764,485
W05R11	Wisc Res Flat Rg1 & Fg1	683,467	571,187	588,601	510,733	495,969	812,304	807,144	793,515	649,201	574,751	613,629	698,316	7,798,818
W05R17	Wisc Res Tou Rg2	44,537	37,111	37,218	29,806	25,715	38,508	35,905	34,825	29,726	28,942	35,537	42,425	420,256
	Total Wisconsin Residential	728,004	608,299	625,819	540,540	521,685	850,812	843,048	828,340	678,928	603,693	649,167	740,741	8,219,074
	Total Wisconsin Retail	2,184,278	1,932,216	2,091,333	1,890,886	1,911,505	2,420,937	2,485,456	2,517,122	2,236,954	2,081,034	2,009,939	2,131,228	25,892,887
	Total Wisconsin	2,368,638	2,108,906	2,286,801	2,195,496	2,229,422	2,795,914	2,870,617	2,903,687	2,590,744	2,423,240	2,336,494	2,485,314	29,595,272
	Total Dem Obl from This Report	2,624,199	2,330,194	2,535,543	2,452,404	2,499,636	3,069,992	3,151,490	3,178,404	2,851,877	2,688,059	2,580,480	2,725,180	32,687,458
	Total DO less CU from This Report	2,617,200	2,323,522	2,529,107	2,446,605	2,493,887	3,063,848	3,145,384	3,172,269	2,846,105	2,682,607	2,574,173	2,718,261	32,612,969
	Booked Sales (less Resale)from Finance	2,622,666	2,331,972	2,548,689	2,330,224	2,429,207	2,893,101	2,892,586	3,027,081	2,657,057	2,549,288	2,382,148	2,626,457	31,290,476
	Variation from Finance Booked Sales	-0.21%	-0.36%	-0.77%	4.99%	2.66%	5.90%	8.74%	4.80%	7.11%	5.23%	8.06%	3.50%	4.23%
	Total Retail from This Report	2,434,366	2,149,321	2,335,621	2,144,957	2,178,331	2,690,927	2,760,853	2,786,195	2,492,977	2,342,118	2,249,537	2,366,341	28,931,543
	Booked Retail Sales from Finance	2,424,031	2,146,479	2,340,662	2,142,711	2,252,169	2,707,499	2,681,951	2,822,996	2,474,331	2,356,263	2,206,358	2,434,428	28,989,878
	Variation from Retail Booked Sales	0.43%	0.13%	-0.22%	0.10%	-3.28%	-0.61%	2.94%	-1.30%	0.75%	-0.60%	1.96%	-2.80%	-0.20%

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Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
M05C00	Mich Company Use	182	178	162	134	123	116	112	111	109	113	141	161	1,641
	Total Michigan Company Use	182	178	162	134	123	116	112	111	109	113	141	161	1,641
M05F60	Mich Wholesale Rate 60 <69KV	5,539	4,194	4,488	2,826	3,409	4,145	5,603	5,789	5,212	3,781	4,440	4,806	54,229
	Total Michigan Wholesale	5,539	4,194	4,488	2,826	3,409	4,145	5,603	5,789	5,212	3,781	4,440	4,806	54,229
M05L88	Mich Lighting Rate 88	178	188	192	182	196	184	188	185	178	174	188	182	2,215
M05L89	Mich Lighting Rate 89	1	1	1	1	1	1	1	1	1	1	1	1	11
M05U89	Mich Pumping Rate 89	1	1	1	1	1	1	1	0	0	1	1	1	9
M05LRS	Mich Residential Area Lighting	33	31	37	37	33	41	31	35	32	36	34	36	415
M05LSC	Mich Secondary Area Lighting	55	49	57	55	52	74	46	50	58	65	59	57	677
	Total Michigan Lighting & Other	268	270	288	275	284	301	268	271	269	276	282	276	3,327
M05P22	Mich Gen Pri CP1 Rate <69KV	1,804	1,671	1,876	1,838	1,922	2,197	2,234	2,288	2,035	1,908	1,694	1,838	23,305
M05P26	Mich Gen Pri Rate 26 Champion Firm	21,962	19,546	22,159	23,349	24,439	25,365	26,050	27,297	25,117	25,096	22,162	21,562	284,103
M05P46	Mich Gen Pri Rate 26 Champion Curt	1,054	920	989	693	687	938	845	941	612	1,060	964	998	10,701
M05P42	Mich Gen Pri Curt Rate <26KV	7,350	6,557	7,298	6,762	7,027	6,741	6,865	6,898	6,575	6,920	6,394	6,691	82,077
M05P27	Mich White Pine Mine 69 KV	2,958	2,535	2,917	2,984	3,161	3,041	3,216	3,051	3,324	3,574	3,542	3,598	37,900
M05P25	Mich Gen Pri Rate 25 Mines	190,974	164,685	185,528	198,547	212,692	205,958	214,761	207,624	198,840	201,536	181,235	174,812	2,337,192
	Total Michigan General Primary	226,102	195,915	220,766	234,172	249,929	244,239	253,971	248,099	236,504	240,093	215,991	209,498	2,775,280
M05S72	Mich Gen Sec Cg1	6,617	5,800	7,003	6,151	5,327	8,475	6,218	6,041	6,341	6,755	7,330	7,150	79,207
M05S40	Mich Gen Sec Cg5 Tou	977	1,000	1,188	945	766	1,049	932	1,083	999	1,010	1,185	1,365	12,500
M05S76	Mich Gen Sec Cg2 Tou	244	203	227	206	170	252	200	207	189	186	136	180	2,400
M05S74	Mich Gen Sec Cg3 Tou Demand	5,782	5,365	5,796	5,733	5,950	6,482	6,533	6,211	6,108	5,805	5,463	5,873	71,100
	Total Michigan General Secondary	13,619	12,368	14,214	13,035	12,213	16,259	13,884	13,542	13,637	13,755	14,113	14,567	165,207
M05R62	Mich Res Flat Rg1	16,319	13,979	15,156	12,850	10,905	16,153	14,269	14,051	12,061	13,508	15,364	16,836	171,450
M05R27	Mich Res TOU Rg2	990	843	858	666	552	706	542	554	477	613	752	929	8,481
	Total Michigan Residential	17,308	14,822	16,014	13,516	11,457	16,859	14,811	14,605	12,538	14,121	16,115	17,765	179,931
	Total Michigan Retail	257,298	223,375	251,282	260,998	273,882	277,659	282,934	276,517	262,948	268,246	246,501	242,105	3,123,745
	Total Michigan	263,019	227,746	255,931	263,958	277,414	281,919	288,648	282,416	268,269	272,140	251,083	247,072	3,179,615

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Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
W05C00	Wisc Company Use	7,425	7,070	6,823	6,154	6,110	6,554	6,534	6,580	6,158	5,798	6,700	7,356	79,261
	Total Wisconsin Company Use	7,425	7,070	6,823	6,154	6,110	6,554	6,534	6,580	6,158	5,798	6,700	7,356	79,261
W05F60	Wisc Wholesale 345KV	26,060	22,602	25,047	24,578	24,152	34,170	35,658	35,886	31,240	27,632	24,066	28,458	339,549
W05F63	Wisc Wholesale 34KV	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Wisc Wholesale (Excluding WPPI)	26,060	22,602	25,047	24,578	24,152	34,170	35,658	35,886	31,240	27,632	24,066	28,458	339,549
W05W01	Wisc WPPI Transmission	155,436	151,389	168,380	281,125	295,268	343,160	352,091	353,326	324,784	316,876	303,583	326,691	3,372,108
	Total WPPI Transmission	155,436	151,389	168,380	281,125	295,268	343,160	352,091	353,326	324,784	316,876	303,583	326,691	3,372,108
	Total Wisc Wholesale (Including WPPI)	181,496	173,991	193,427	305,703	319,420	377,330	387,749	389,212	356,024	344,508	327,649	355,149	3,711,657
W05L01	Wisc Lighting Rate 01	5,614	6,159	5,990	6,160	5,643	6,020	5,312	6,039	5,761	6,104	5,973	5,958	70,733
W05L05	Wisc Lighting Rate 05	548	516	560	528	537	649	727	798	622	526	533	577	7,120
W03U05	Mich Pumping Rate 89	548	516	560	528	537	650	727	798	622	526	533	577	7,122
W05L36	Wisc Lighting Rate 36 (Tou)	7,208	6,835	6,183	5,616	4,819	4,769	4,009	5,140	5,458	6,423	7,232	7,868	71,560
W05L46	Wisc Lighting Rate 46	997	923	846	782	653	702	649	755	761	899	983	1,052	10,002
W05LRS	Wisc Res Area Lighting	344	322	358	346	324	408	319	349	330	347	325	351	4,123
W05LSC	Wisc Gen Sec & Gen Pri Area Lighting	2,084	1,897	2,132	1,922	2,003	2,098	2,024	2,135	1,994	2,046	1,907	2,048	24,291
	Total Wisconsin Lighting & Other	17,343	17,167	16,628	15,883	14,515	15,297	13,768	16,015	15,548	16,870	17,486	18,431	194,950
W05P28	Wisc Gen Pri Cp1 8KV Customers	27,043	24,259	26,353	25,430	25,630	28,234	28,925	29,767	28,133	26,174	24,953	25,937	320,837
W05P81	Wisc Gen Pri Cp3a <13KV	1,093	996	1,089	1,066	1,112	1,163	1,139	1,176	1,101	1,101	1,027	1,048	13,110
	Total Wisconsin GP Low Voltage	28,136	25,255	27,442	26,496	26,742	29,397	30,063	30,943	29,235	27,275	25,979	26,985	333,948
W05P27	Wisc Gen Pri Cp1 13KV Customers	116,822	106,013	117,032	113,406	119,274	136,775	141,186	146,533	134,773	122,531	110,572	113,520	1,478,437
W05P26	Wisc Gen Pri Cp1 26KV Customers	347,448	324,187	354,830	342,193	349,379	387,988	384,587	406,765	378,125	358,738	320,869	316,669	4,271,777
W05P25	Wisc Gen Pri Cp1 34KV Customers	66,240	60,087	65,402	65,328	67,326	70,312	67,764	69,276	63,261	61,480	57,720	59,421	773,617
W05P34	Wisc Gen Pri Cp1 26KV Charter	4,104	3,465	3,927	3,771	3,784	4,012	1,684	1,747	1,726	1,765	1,668	1,708	33,360
W05P33	Wisc Gen Pri Cp1 34KV-Stora Enso Kimberly	23,867	21,937	23,251	24,023	19,047	25,012	26,573	27,265	26,061	25,852	23,423	21,364	287,676
W05P21	Wisc Gen Pri Cp2m 13KV	2,374	2,807	2,464	3,616	3,553	3,966	3,888	4,164	3,852	3,422	3,115	2,624	39,846
W05P22	Wisc Gen Pri Cp2m 26KV	25,575	23,581	25,669	25,237	26,112	26,042	27,212	28,264	26,097	27,594	24,588	26,040	312,012
W05P20	Wisc Gen Pri Cp2m 26KV Charter	34,411	23,244	26,394	28,053	28,718	31,091	24,122	36,201	32,649	37,058	31,341	31,579	364,862
W05P29	Wisc Gen Pri Cp3 13KV	2,185	2,108	2,521	2,271	2,438	2,358	2,136	2,546	2,393	2,606	2,474	2,474	28,510
W05P30	Wisc Gen Pri Cp3 26KV	19,353	19,436	19,669	19,414	20,190	22,582	17,623	22,856	21,635	21,809	18,601	18,353	241,521
W05P40	Wisc Gen Pri Cp3 34KV	3,128	3,002	3,377	3,274	3,180	3,258	2,619	3,084	2,840	2,846	2,561	2,838	36,008
W05P82	Wisc Gen Pri Cp3a 13KV	305	279	291	266	269	253	266	294	283	304	313	307	3,431
W05P83	Wisc Gen Pri Cp3a 26KV	6,639	6,331	6,848	6,058	6,456	7,531	7,822	8,023	7,528	7,770	6,922	7,294	85,221
W05P84	Wisc Gen Pri Cp3a 34KV	18,211	16,737	18,378	17,962	18,564	19,144	16,983	18,636	19,225	18,403	16,271	15,391	213,905
W05P54	Wisc Gen Pri CpFN 34KV	8,351	7,734	8,522	8,174	8,607	8,572	8,941	8,614	8,593	8,836	8,369	7,576	100,888
	Total Wisconsin GP Medium Voltage	679,014	620,948	678,578	663,046	676,897	748,897	733,405	784,268	729,041	701,014	628,806	627,157	8,271,071
W05P38	Wisc Gen Pri Cp1 138KV	6,923	5,448	6,594	6,470	6,439	5,438	5,975	5,302	6,459	5,781	6,602	7,114	74,544
W05P39	Wisc Gen Pri CpFN 138KV	9,861	8,903	8,144	9,552	9,831	9,475	9,767	9,773	9,260	9,721	9,425	9,805	113,517
W05P32	Wisc Gen Pri Cp3 138KV Stora Enso Niagra	20,391	17,787	20,769	22,028	21,153	21,396	20,229	24,107	22,918	22,533	19,604	21,634	254,551
	Total Wisconsin GP High Voltage	37,175	32,138	35,507	38,050	37,423	36,310	35,970	39,182	38,637	38,035	35,631	38,552	442,612
	Total Wisconsin General Primary	744,325	678,341	741,527	727,592	741,062	814,603	799,439	854,393	796,913	766,324	690,417	692,695	9,047,631

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Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
W05S44	Wisc Gen Sec Cg1 Flat	191,467	168,361	180,577	149,053	156,549	198,391	224,091	215,171	189,550	172,190	168,350	185,061	2,198,812
W05S42	Wisc Gen Sec Cg6 Small Tou	9,285	8,030	8,966	7,089	7,363	8,671	9,255	9,582	7,670	7,709	8,624	10,476	102,721
W05S34	Wisc Gen Sec Cg2 Flat Demand	97,303	88,946	97,634	85,558	91,305	97,995	108,756	110,370	104,005	96,472	94,236	97,041	1,169,620
W05S70	Wisc Gen Sec Cg3 Tou Demand	479,792	438,343	503,126	438,753	455,119	523,228	584,757	584,160	533,311	499,822	458,523	466,770	5,965,702
W05S71	Wisc Gen Sec Cg3c Curt	2,270	2,078	2,262	2,262	2,577	2,873	2,738	3,061	2,718	2,854	2,642	2,349	30,684
W05S80	Wisc Gen Sec Cg3a Coop	1,699	1,545	1,722	1,716	1,803	2,207	1,994	2,102	1,872	1,791	1,107	1,565	21,124
	Total Cg3, Cg3A and Cg3C	483,761	441,966	507,110	442,732	459,498	528,308	589,489	589,323	537,901	504,467	462,271	470,684	6,017,510
	Total Wisconsin General Secondary	781,817	707,303	794,287	684,431	714,714	833,365	931,591	924,446	839,127	780,839	733,482	763,262	9,488,662
W05R11	Wisc Res Flat Rg1 & Fg1	744,076	621,394	639,686	554,335	538,172	882,828	879,972	867,455	705,487	623,800	666,635	760,061	8,483,901
W05R17	Wisc Res Tou Rg2	48,940	40,741	40,796	32,610	28,121	42,185	39,486	38,423	32,572	31,669	38,935	46,602	461,081
	Total Wisconsin Residential	793,016	662,135	680,482	586,945	566,293	925,013	919,458	905,877	738,059	655,470	705,570	806,663	8,944,982
	Total Wisconsin Retail	2,336,501	2,064,945	2,232,924	2,014,851	2,036,584	2,588,279	2,664,256	2,700,732	2,389,646	2,219,503	2,146,954	2,281,050	27,676,225
	Total Wisconsin	2,525,421	2,246,007	2,433,173	2,326,708	2,362,114	2,972,163	3,058,539	3,096,523	2,751,829	2,569,809	2,481,303	2,643,555	31,467,143
	Total System Demand Obligation	2,788,440	2,473,753	2,689,104	2,590,666	2,639,528	3,254,082	3,347,187	3,378,939	3,020,098	2,841,948	2,732,386	2,890,627	34,646,758
	Total Native System from This Report	2,633,004	2,322,364	2,520,724	2,309,541	2,344,260	2,910,922	2,995,096	3,025,614	2,695,314	2,525,072	2,428,803	2,563,936	31,274,651
	Native System	2,637,594	2,290,517	2,487,235	2,300,572	2,361,259	2,845,436	2,940,983	3,019,946	2,672,181	2,486,116	2,372,987	2,596,378	31,011,204
	Variation from Native System	-4,590	31,847	33,489	8,969	-16,999	65,486	54,113	5,668	23,133	38,956	55,816	-32,442	263,447
	Variation from Native System	-0.17%	1.39%	1.35%	0.39%	-0.72%	2.30%	1.84%	0.19%	0.87%	1.57%	2.35%	-1.25%	0.85%

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Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Maximum
M06C00	Mich Company Use	333	348	304	300	280	269	253	233	263	258	333	377	377
	Total Michigan Company Use	333	348	304	300	280	269	253	233	263	258	333	377	377
M06F60	Mich Wholesale Rate 60 <69KV	9,279	9,377	8,655	6,599	8,442	9,733	12,639	9,956	9,372	9,346	10,112	11,754	12,639
	Total Michigan Wholesale	9,279	9,377	8,655	6,599	8,442	9,733	12,639	9,956	9,372	9,346	10,112	11,754	12,639
M06L88	Mich Lighting Rate 88	407	466	527	587	739	694	717	585	530	510	400	429	717
M06L89	Mich Lighting Rate 89	2	3	3	3	4	4	4	2	2	3	2	3	4
M06U89	Mich Pumping Rate 89	5	2	3	3	10	3	3	10	4	7	3	5	3
M06LRS	Mich Residential Area Lighting	73	100	92	110	121	149	152	87	98	92	78	69	152
M06LSC	Mich Secondary Area Lighting	113	173	142	180	219	216	275	121	185	152	165	133	275
	Total Michigan Lighting & Other	600	743	766	882	1,094	1,066	1,151	805	818	764	648	638	1,151
M06P22	Mich Gen Pri CP1 Rate <69KV	3,109	1,847	2,812	1,758	3,627	2,081	1,778	3,606	2,525	2,586	1,782	3,011	2,812
M06P26	Mich Gen Pri Rate 26 Champion Firm	30,725	32,060	29,174	31,706	39,143	39,256	38,402	36,417	36,619	31,217	29,091	32,971	29,174
M06P46	Mich Gen Pri Rate 26 Champion Curt	1,290	1,637	1,530	1,298	1,664	1,819	1,634	1,844	793	1,181	1,900	1,915	1,530
M06P42	Mich Gen Pri Curt Rate <26KV	9,874	8,549	9,698	8,333	10,385	7,842	7,795	10,254	6,635	9,156	7,239	10,980	9,698
M06P27	Mich White Pine Mine 69 KV	4,516	5,159	5,087	5,336	4,748	5,802	5,961	5,910	4,757	5,075	4,988	5,623	5,087
M06P25	Mich Gen Pri Rate 25 Mines	276,763	286,448	292,987	292,464	270,000	264,207	241,420	274,975	244,655	270,653	263,200	276,099	292,987
	Total Michigan General Primary	326,277	335,702	341,289	340,895	329,568	321,009	296,990	333,006	295,984	319,867	308,199	330,599	341,289
M06S72	Mich Gen Sec Cg1	8,977	9,986	7,245	17,091	21,229	10,163	21,065	8,256	19,318	8,259	11,390	11,772	21,229
M06S40	Mich Gen Sec Cg5 Tou	1,898	3,016	1,657	1,116	1,541	3,215	2,742	1,632	1,374	2,739	3,173	2,390	1,541
M06S76	Mich Gen Sec Cg2 Tou	296	297	338	371	323	422	376	349	355	258	210	288	323
M06S74	Mich Gen Sec Cg3 Tou Demand	10,171	7,326	8,501	6,964	10,134	7,824	7,154	10,201	8,606	8,339	7,591	10,063	10,134
	Total Michigan General Secondary	21,342	20,625	17,742	25,542	33,227	21,624	31,336	20,439	29,653	19,595	22,364	24,511	33,227
M06R62	Mich Res Flat Rg1	32,940	36,864	28,628	19,266	22,910	38,423	36,559	25,019	19,193	29,238	32,689	34,106	38,423
M06R27	Mich Res TOU Rg2	1,546	2,171	1,272	698	680	1,505	1,218	1,070	650	1,722	2,130	1,379	1,505
	Total Michigan Residential	34,486	39,035	29,900	19,964	23,589	39,927	37,777	26,089	19,843	30,959	34,818	35,485	39,927
	Total Michigan Retail	382,705	396,105	389,697	387,284	387,477	383,626	367,253	380,340	346,298	371,185	366,030	391,233	415,594
	Total Michigan	392,317	405,830	398,656	394,183	396,199	393,628	380,146	390,529	355,933	380,789	376,475	403,364	428,610

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Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Maximum
W06C00	Wisc Company Use	14,713	15,448	13,504	14,260	16,205	14,468	13,406	13,412	14,053	13,041	14,820	14,804	16,205
	Total Wisconsin Company Use	14,713	15,448	13,504	14,260	16,205	14,468	13,406	13,412	14,053	13,041	14,820	14,804	16,205
W06F60	Wisc Wholesale 345KV (Geneva)	0	0	0	0	0	0	0	0	0	0	0	0	0
W06F63	Wisc Wholesale 34KV	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Wisc Wholesale (Excluding WPPI)	0	0	0	0	0	0	0	0	0	0	0	0	0
W06W01	Wisc WPPI Transmission	532,811	523,612	516,474	500,159	573,920	583,082	669,993	640,429	550,331	523,720	524,727	544,092	669,993
	Total WPPI Transmission	532,811	523,612	516,474	500,159	573,920	583,082	669,993	640,429	550,331	523,720	524,727	544,092	669,993
	Total Wisc Wholesale (Including WPPI)	532,811	523,612	516,474	500,159	573,920	583,082	669,993	640,429	550,331	523,720	524,727	544,092	669,993
W06L01	Wisc Lighting Rate 01	13,161	14,805	17,612	18,432	22,691	23,092	23,156	18,774	16,827	16,175	13,961	12,887	23,156
W06L05	Wisc Lighting Rate 05	1,360	1,227	1,295	1,312	1,898	2,111	2,798	2,137	1,570	1,450	1,182	1,089	2,798
W06U05	Wisc Pumping Rate 05	1,629	1,248	1,108	1,127	1,158	1,081	1,596	1,697	1,147	1,350	1,102	1,100	1,596
W06L36	Wisc Lighting Rate 36 (Tou)	17,066	16,882	17,557	16,797	18,978	17,398	17,562	15,954	16,197	16,826	16,223	16,157	17,562
W06L46	Wisc Lighting Rate 46	2,318	2,163	2,226	2,233	2,639	2,637	2,745	2,299	2,198	2,218	2,147	2,159	2,745
W06LRS	Wisc Res Area Lighting	792	889	961	1,082	1,207	1,304	1,458	1,095	890	861	784	713	1,458
W06LSC	Wisc Gen Sec & Gen Pri Area Lighting	4,496	5,319	5,847	6,259	7,418	8,307	7,993	6,952	6,085	5,446	4,785	4,365	7,993
	Total Wisconsin Lighting & Other	40,822	42,534	46,605	47,243	55,989	55,929	57,310	48,908	44,914	44,325	40,183	38,469	57,310
W06P28	Wisc Gen Pri Cp1 8KV Customers	44,908	45,591	45,059	45,495	52,441	49,518	52,568	54,214	52,265	49,834	44,636	46,437	52,568
W06P81	Wisc Gen Pri Cp3a <13KV	2,395	1,845	2,154	1,925	1,696	1,865	2,090	1,854	1,849	1,768	1,953	1,703	2,090
	Total Wisconsin GP Low Voltage	47,303	47,436	47,213	47,421	54,137	51,382	54,657	56,068	54,113	51,602	46,590	48,140	54,657
W06P27	Wisc Gen Pri Cp1 13KV Customers	193,934	196,271	191,294	206,638	236,365	233,851	263,782	260,037	249,675	226,717	194,602	197,738	263,782
W06P26	Wisc Gen Pri Cp1 26KV Customers	558,498	568,959	566,281	592,315	630,146	638,957	654,796	676,841	634,178	598,815	528,587	559,956	654,796
W06P25	Wisc Gen Pri Cp1 34KV Customers	93,140	96,683	100,157	97,562	95,712	95,812	105,692	99,471	99,153	93,478	97,568	99,284	105,692
W06P34	Wisc Gen Pri Cp1 26KV Charter	2,455	2,482	2,327	2,415	2,280	2,394	2,550	2,360	2,293	2,302	2,172	2,359	2,550
W06P33	Wisc Gen Pri Cp1 34KV-Stora Enso Kimberly	32,223	30,473	31,238	32,073	31,123	29,441	37,992	38,428	35,492	28,614	33,012	32,878	37,992
W06P21	Wisc Gen Pri Cp2m 13KV	6,252	3,765	4,149	3,928	3,658	3,662	3,806	4,934	5,888	3,746	3,312	2,271	3,806
W06P22	Wisc Gen Pri Cp2m 26KV	43,059	43,604	40,510	43,778	43,105	42,307	42,202	39,087	43,002	41,768	40,270	34,627	42,202
W06P20	Wisc Gen Pri Cp2m 26KV Charter	56,018	40,152	58,957	54,006	4,974	61,279	57,968	32,858	59,922	61,867	55,403	43,510	57,968
W06P29	Wisc Gen Pri Cp3 13KV	3,617	3,711	3,696	3,180	3,676	3,172	2,900	2,818	4,092	3,723	3,629	4,013	2,900
W06P30	Wisc Gen Pri Cp3 26KV	32,889	37,517	40,812	42,162	46,192	44,801	42,075	35,087	38,790	41,272	38,699	43,418	42,075
W06P40	Wisc Gen Pri Cp3 34KV	8,860	10,468	9,119	8,314	11,457	14,077	12,577	13,806	14,170	13,195	14,091	11,946	12,577
W06P82	Wisc Gen Pri Cp3a 13KV	651	695	620	569	552	535	570	463	487	517	547	627	570
W06P83	Wisc Gen Pri Cp3a 26KV	13,581	11,635	11,225	13,868	10,429	14,704	13,211	13,874	13,843	14,568	12,460	12,322	13,211
W06P84	Wisc Gen Pri Cp3a 34KV	23,456	24,755	24,007	23,699	22,456	23,887	26,782	25,785	22,385	22,548	12,310	13,450	26,782
W06P54	Wisc Gen Pri CpFN 34KV	11,775	13,796	14,393	15,481	14,954	15,449	6,880	7,392	5,952	5,187	4,010	4,824	6,880
	Total Wisconsin GP Medium Voltage	1,080,408	1,084,966	1,098,784	1,139,990	1,157,079	1,224,328	1,273,784	1,253,241	1,229,322	1,158,318	1,040,674	1,063,222	1,273,784
W06P38	Wisc Gen Pri Cp1 138KV	12,190	12,173	11,633	12,132	13,730	13,226	12,909	13,866	5,666	11,082	12,172	15,103	12,909
W06P39	Wisc Gen Pri CpFN 138KV	13,111	13,194	13,037	0	11,917	13,171	12,049	12,565	13,385	13,098	13,349	13,541	12,049
W06P32	Wisc Gen Pri Cp3 138KV Stora Enso Niagra	22,323	19,946	16,713	26,451	9,835	21,319	26,176	23,463	23,590	19,523	22,481	24,059	26,176
	Total Wisconsin GP High Voltage	47,624	45,313	41,383	38,583	35,482	47,716	51,134	49,895	42,641	43,704	48,002	52,703	51,134
	Total Wisconsin General Primary	1,175,335	1,177,715	1,187,380	1,225,993	1,246,698	1,323,427	1,379,576	1,359,204	1,326,076	1,253,624	1,135,266	1,164,065	1,379,576

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Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Maximum
W06S44	Wisc Gen Sec Cg1 Flat	247,798	304,433	242,657	205,594	249,759	313,037	502,521	431,718	260,920	238,539	291,035	326,051	502,521
W06S42	Wisc Gen Sec Cg6 Small Tou	16,744	19,842	19,637	17,633	17,594	24,354	20,175	25,415	20,444	19,229	19,761	20,740	20,175
W06S34	Wisc Gen Sec Cg2 Flat Demand	221,388	224,955	222,518	203,494	247,155	242,897	251,683	265,041	246,302	242,277	229,991	240,984	251,683
W06S70	Wisc Gen Sec Cg3 Tou Demand	992,132	994,871	995,607	957,785	1,177,571	1,171,828	1,199,774	1,189,448	1,108,926	1,017,429	969,845	1,053,592	1,199,774
W06S71	Wisc Gen Sec Cg3c Curt	4,417	4,512	4,356	5,681	7,642	7,167	7,037	6,885	8,614	7,603	6,946	5,575	7,037
W06S80	Wisc Gen Sec Cg3a Coop	3,467	3,632	3,491	3,617	5,029	4,850	4,628	4,740	5,059	4,908	3,098	3,614	4,628
	Total Cg3, Cg3A and Cg3C	1,000,015	1,003,014	1,003,454	967,082	1,190,243	1,183,844	1,211,438	1,201,073	1,122,599	1,029,940	979,889	1,062,781	1,211,438
	Total Wisconsin General Secondary	1,485,945	1,552,244	1,488,267	1,393,803	1,704,751	1,764,132	1,985,817	1,923,246	1,650,265	1,529,986	1,520,676	1,650,556	1,985,817
W06R11	Wisc Res Flat Rg1 & Fg1	1,606,069	1,466,111	1,393,805	1,146,411	1,800,528	2,161,754	2,612,384	2,629,077	1,431,662	1,358,537	1,555,323	1,628,197	2,629,077
W06R17	Wisc Res Tou Rg2	81,878	97,204	84,954	73,906	71,855	90,666	92,322	95,391	71,955	82,284	87,390	86,808	95,391
	Total Wisconsin Residential	1,687,947	1,563,315	1,478,759	1,220,317	1,872,384	2,252,420	2,704,706	2,724,468	1,503,617	1,440,822	1,642,713	1,715,004	2,724,468
	Dates and Times of Non Coin Peaks													
	Mich Wholesale	01/13/06	02/09/06	03/03/06	04/28/06	05/30/06	06/17/06	07/28/06	08/01/06	09/05/06	10/12/06	11/14/06	12/06/06	
		18:00	19:00	8:00	8:00	15:00	11:00	18:00	17:00	17:00	20:00	18:00	18:00	
	Mich Lighting	01/19/06	02/22/06	03/30/06	04/12/06	05/28/06	06/06/06	07/01/06	08/25/06	09/23/06	10/26/06	11/27/06	12/04/06	
		7:00	19:00	20:00	21:00	5:00	23:00	22:00	5:00	23:00	7:00	6:00	7:00	
	Mich Large Sized Customers	01/25/06	02/05/06	03/17/06	04/02/06	05/26/06	06/25/06	07/29/06	08/11/06	09/29/06	10/20/06	11/24/06	12/18/06	
		15:00	20:00	16:00	20:00	11:00	15:00	5:00	13:00	7:00	17:00	20:00	8:00	
	Mich Medium Sized Customers	01/17/05	02/08/05	03/02/05	04/19/05	05/31/05	06/27/05	07/13/05	08/01/05	09/06/05	10/05/05	11/30/05	12/05/05	
		11:00	11:00	11:00	11:00	14:00	14:00	14:00	14:00	14:00	11:00	11:00	11:00	
	Mich Small Sized Customers	01/02/06	02/18/06	03/13/06	04/04/06	05/30/06	06/17/06	07/31/06	08/01/06	09/07/06	10/23/06	11/30/06	12/05/06	
		18:00	19:00	19:00	11:00	15:00	13:00	15:00	17:00	15:00	20:00	20:00	18:00	
	Wisc Wholesale													
	Wisc WPPI	01/04/06	02/20/06	03/02/06	04/03/06	05/30/06	06/08/06	07/17/06	08/01/06	09/06/06	10/02/06	11/27/06	12/12/06	
		18:00	19:00	11:00	11:00	11:00	14:00	14:00	12:00	14:00	19:00	18:00	18:00	
	Wisc Lighting	01/02/06	02/08/06	03/09/06	04/16/06	05/25/06	06/15/06	07/28/06	08/22/06	09/05/06	10/12/06	11/01/06	12/08/06	
		20:00	20:00	20:00	21:00	22:00	22:00	22:00	21:00	21:00	20:00	19:00	18:00	
	Wisc Large Sized Customers	01/05/06	02/08/06	03/15/06	04/13/06	05/30/06	06/07/06	07/17/06	08/02/06	09/06/06	10/03/06	11/02/06	12/07/06	
		11:00	11:00	11:00	11:00	11:00	12:00	12:00	14:00	14:00	13:00	13:00	11:00	
	Wisc Medium Sized Customers	01/18/06	02/15/06	03/01/06	04/12/06	05/30/06	06/07/06	07/31/06	08/01/06	09/07/06	10/03/06	11/29/06	12/07/06	
		12:00	12:00	12:00	14:00	12:00	12:00	12:00	12:00	12:00	14:00	12:00	12:00	
	Wisc Small Sized Customers	01/02/06	02/18/06	03/05/06	04/02/06	05/29/06	06/17/06	07/31/06	08/01/06	09/17/06	10/22/06	11/30/06	12/07/06	
		18:00	19:00	19:00	20:00	15:00	17:00	17:00	18:00	20:00	20:00	19:00	19:00	

Wisconsin Electric Power Company
2006 Class Load Analysis
Native System Peak
Generation Level

8/21/07 11:30

Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average
M06C00	Mich Company Use	252	264	220	289	276	237	218	232	261	197	232	300	248
	Total Michigan Company Use	252	264	220	289	276	237	218	232	261	197	232	300	248
M06F60	Mich Wholesale Rate 60 <69KV	8,978	8,261	7,794	6,092	8,100	8,772	11,748	9,428	8,670	7,775	9,159	11,694	8,873
	Total Michigan Wholesale	8,978	8,261	7,794	6,092	8,100	8,772	11,748	9,428	8,670	7,775	9,159	11,694	8,873
M06L88	Mich Lighting Rate 88	407	466	492	0	0	0	0	0	0	170	400	429	197
M06L89	Mich Lighting Rate 89	2	3	3	0	0	0	0	0	0	1	2	3	1
M06U89	Mich Pumping Rate 89	2	1	2	3	2	1	1	1	1	2	2	2	2
M06LRS	Mich Residential Area Lighting	73	100	86	0	0	0	0	0	0	31	78	69	36
M06LSC	Mich Secondary Area Lighting	113	173	132	0	0	0	0	0	0	51	165	133	64
	Total Michigan Lighting & Other	597	742	714	3	2	1	1	1	1	254	647	635	300
M06P22	Mich Gen Pri CP1 Rate <69KV	2,710	2,701	2,677	3,202	3,640	3,555	3,634	3,922	3,477	3,023	2,633	2,754	3,161
M06P26	Mich Gen Pri Rate 26 Champion Firm	29,463	30,176	32,898	31,118	37,409	38,481	37,002	38,802	16,047	35,256	31,759	30,475	32,407
M06P46	Mich Gen Pri Rate 26 Champion Curt	1,503	1,521	764	1,461	1,740	1,077	1,882	1,570	0	739	1,709	1,522	1,291
M06P42	Mich Gen Pri Curt Rate <26KV	10,570	9,384	9,270	10,108	9,891	9,214	8,875	9,908	5,634	6,194	9,340	9,515	8,992
M06P27	Mich White Pine Mine 69 KV	5,099	4,611	5,461	5,277	4,603	5,706	5,678	5,834	4,978	4,534	5,393	5,629	5,234
M06P25	Mich Gen Pri Rate 25 Mines	248,549	257,935	285,738	250,001	210,672	198,074	163,987	139,424	200,443	231,020	223,279	260,540	222,472
	Total Michigan General Primary	297,894	306,328	336,809	301,166	267,955	256,107	221,059	199,461	230,580	280,765	274,114	310,435	273,556
M06S72	Mich Gen Sec Cg1	10,705	11,742	7,245	16,994	19,039	12,602	16,879	11,069	20,054	8,334	12,234	12,171	13,256
M06S40	Mich Gen Sec Cg5 Tou	1,619	2,070	1,657	1,340	1,702	2,274	3,119	1,361	1,312	1,671	2,261	2,431	1,901
M06S76	Mich Gen Sec Cg2 Tou	374	351	338	365	315	449	349	385	370	300	219	291	342
M06S74	Mich Gen Sec Cg3 Tou Demand	9,218	9,578	8,886	9,988	10,833	10,728	11,576	12,970	12,329	10,078	9,086	9,617	10,407
	Total Michigan General Secondary	21,915	23,741	18,127	28,688	31,888	26,053	31,923	25,784	34,065	20,383	23,800	24,510	25,906
M06R62	Mich Res Flat Rg1	29,423	32,361	28,628	18,804	22,536	32,195	38,236	21,438	18,011	22,868	33,258	32,749	27,542
M06R27	Mich Res TOU Rg2	1,319	1,490	1,272	838	750	1,064	1,385	892	621	1,050	1,517	1,402	1,134
	Total Michigan Residential	30,741	33,851	29,900	19,642	23,286	33,259	39,621	22,330	18,632	23,918	34,775	34,152	28,676
	Total Michigan Retail	351,147	364,662	385,550	349,499	323,131	315,420	292,604	247,577	283,278	325,320	333,336	369,731	328,438
	Total Michigan	360,377	373,186	393,563	355,880	331,508	324,430	304,570	257,236	292,209	333,292	342,727	381,724	337,559

Wisconsin Electric Power Company
2006 Class Load Analysis
Native System Peak
Generation Level

8/21/07 11:30

Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average
W06C00	Wisc Company Use	11,137	11,728	9,759	13,762	16,009	12,768	11,549	13,323	13,933	9,980	10,341	11,760	12,171
	Total Wisconsin Company Use	11,137	11,728	9,759	13,762	16,009	12,768	11,549	13,323	13,933	9,980	10,341	11,760	12,171
W06F60	Wisc Wholesale 345KV (Geneva)	0	0	0	0	0	0	0	0	0	0	0	0	0
W06F63	Wisc Wholesale 34KV	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Wisc Wholesale (Excluding WPPI)	0	0	0	0	0	0	0	0	0	0	0	0	0
W06W01	Wisc WPPI Transmission	532,811	520,544	511,360	500,159	549,367	555,462	666,924	616,899	544,193	523,720	489,950	516,479	543,989
	Total WPPI Transmission	532,811	520,544	511,360	500,159	549,367	555,462	666,924	616,899	544,193	523,720	489,950	516,479	543,989
	Total Wisc Wholesale (Including WPPI)	532,811	520,544	511,360	500,159	549,367	555,462	666,924	616,899	544,193	523,720	489,950	516,479	543,989
W06L01	Wisc Lighting Rate 01	13,161	14,805	16,438	0	0	0	0	0	0	5,392	13,961	12,887	6,387
W06L05	Wisc Lighting Rate 05	1,360	1,227	1,208	0	0	0	0	0	0	483	1,182	1,089	546
W06U05	Wisc Pumping Rate 05	900	917	759	1,186	1,567	993	2,017	1,604	1,320	871	959	783	1,156
W06L36	Wisc Lighting Rate 36 (Tou)	17,066	16,882	16,386	0	0	0	0	0	0	5,609	16,223	16,157	7,360
W06L46	Wisc Lighting Rate 46	2,318	2,163	2,077	0	0	0	0	0	0	739	2,147	2,159	967
W06LRS	Wisc Res Area Lighting	792	889	896	0	0	0	0	0	0	287	784	713	364
W06LSC	Wisc Gen Sec & Gen Pri Area Lighting	4,496	5,319	5,457	0	0	0	0	0	0	1,815	4,785	4,365	2,186
	Total Wisconsin Lighting & Other	40,093	42,202	43,222	1,186	1,567	993	2,017	1,604	1,320	15,196	40,040	38,153	18,966
W06P28	Wisc Gen Pri Cp1 8KV Customers	41,225	39,832	40,331	44,155	52,116	48,975	52,341	55,444	52,795	44,052	41,765	42,876	46,325
W06P81	Wisc Gen Pri Cp3a <13KV	1,437	1,388	1,411	2,032	1,834	1,550	1,676	1,959	1,889	1,407	1,332	1,489	1,617
	Total Wisconsin GP Low Voltage	42,662	41,220	41,742	46,188	53,950	50,524	54,017	57,403	54,684	45,459	43,097	44,365	47,942
W06P27	Wisc Gen Pri Cp1 13KV Customers	169,634	166,228	159,714	198,743	238,228	230,320	247,331	259,340	246,253	195,924	173,494	177,783	205,249
W06P26	Wisc Gen Pri Cp1 26KV Customers	510,870	512,280	496,535	561,416	623,925	616,550	639,022	679,308	633,950	529,247	503,793	512,416	568,276
W06P25	Wisc Gen Pri Cp1 34KV Customers	88,968	91,201	95,236	97,665	98,367	99,868	94,852	102,342	97,093	91,675	92,933	95,372	95,464
W06P34	Wisc Gen Pri Cp1 26KV Charter	2,525	2,492	2,381	2,326	2,321	2,466	2,134	2,315	2,403	2,466	2,431	2,487	2,396
W06P33	Wisc Gen Pri Cp1 34KV-Stora Enso Kimberly	31,250	32,760	32,193	36,203	32,592	38,008	37,646	30,390	28,749	37,874	32,092	32,058	33,485
W06P21	Wisc Gen Pri Cp2m 13KV	6,094	2,932	2,983	3,754	3,939	2,822	4,974	5,594	5,689	2,349	2,277	2,085	3,791
W06P22	Wisc Gen Pri Cp2m 26KV	40,082	33,928	35,679	39,834	40,907	40,606	43,015	39,593	42,449	31,855	35,511	30,037	37,791
W06P20	Wisc Gen Pri Cp2m 26KV Charter	56,165	56,477	62,921	57,326	4,921	44,280	16,025	8,168	58,679	53,697	52,021	55,857	43,878
W06P29	Wisc Gen Pri Cp3 13KV	2,569	2,343	1,944	3,659	3,805	3,011	2,660	2,655	3,987	2,755	2,817	3,015	2,935
W06P30	Wisc Gen Pri Cp3 26KV	27,829	30,956	30,196	47,164	40,729	33,702	30,325	32,018	40,277	34,366	33,669	34,331	34,630
W06P40	Wisc Gen Pri Cp3 34KV	8,288	8,010	7,223	8,418	12,394	11,089	11,995	13,223	13,909	12,515	12,178	11,579	10,902
W06P82	Wisc Gen Pri Cp3a 13KV	576	601	573	698	570	449	486	542	475	451	515	493	536
W06P83	Wisc Gen Pri Cp3a 26KV	11,122	10,253	9,786	10,924	11,585	13,153	13,949	15,457	15,061	12,453	10,818	11,153	12,143
W06P84	Wisc Gen Pri Cp3a 34KV	22,250	23,225	22,804	25,199	22,980	22,190	25,934	24,527	22,710	21,716	12,064	12,849	21,537
W06P54	Wisc Gen Pri CpFN 34KV	11,859	13,884	14,416	14,658	14,896	15,427	6,679	6,608	6,406	5,597	3,602	4,292	9,860
	Total Wisconsin GP Medium Voltage	990,081	987,569	974,584	1,107,986	1,152,159	1,173,942	1,177,028	1,222,078	1,218,090	1,034,938	970,216	985,808	1,082,873
W06P38	Wisc Gen Pri Cp1 138KV	11,943	13,769	8,448	12,467	13,655	9,048	9,958	11,485	10,631	11,561	9,387	16,977	11,611
W06P39	Wisc Gen Pri CpFN 138KV	13,124	13,219	13,137	13,108	11,943	12,745	12,342	12,524	13,408	12,924	13,443	13,533	12,954
W06P32	Wisc Gen Pri Cp3 138KV Stora Enso Niagra	21,120	21,391	21,022	29,248	8,220	21,288	26,473	19,520	26,225	19,849	24,633	22,228	21,768
	Total Wisconsin GP High Voltage	46,188	48,380	42,607	54,823	33,818	43,081	48,774	43,529	50,264	44,334	47,463	52,737	46,333
	Total Wisconsin General Primary	1,078,931	1,077,169	1,058,934	1,208,997	1,239,927	1,267,547	1,279,818	1,323,010	1,323,038	1,124,731	1,060,776	1,082,910	1,177,149

Wisconsin Electric Power Company
2006 Class Load Analysis
Native System Peak
Generation Level

8/21/07 11:30

Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average
W06S44	Wisc Gen Sec Cg1 Flat	300,954	289,926	261,616	319,536	450,536	492,360	502,521	571,325	475,140	291,351	331,191	369,929	388,032
W06S42	Wisc Gen Sec Cg6 Small Tou	14,280	13,619	15,511	9,829	10,551	16,256	20,175	21,208	9,346	12,292	17,656	18,360	14,924
W06S34	Wisc Gen Sec Cg2 Flat Demand	159,229	161,117	149,950	187,905	247,155	214,757	212,339	262,099	237,048	167,206	164,283	182,024	195,426
W06S70	Wisc Gen Sec Cg3 Tou Demand	750,914	763,359	719,566	928,507	1,161,150	1,037,470	1,034,971	1,189,353	1,107,169	778,933	677,559	839,803	915,730
W06S71	Wisc Gen Sec Cg3c Curt	3,278	3,549	3,235	5,604	6,455	6,870	5,755	5,971	9,165	5,180	4,531	4,525	5,343
W06S80	Wisc Gen Sec Cg3a Coop	3,159	3,339	3,075	3,391	4,357	3,165	3,052	4,592	4,940	3,540	3,437	3,482	3,628
	Total Cg3, Cg3A and Cg3C	757,351	770,248	725,876	937,502	1,171,963	1,047,506	1,043,779	1,199,916	1,121,274	787,653	685,527	847,811	924,700
	Total Wisconsin General Secondary	1,231,815	1,234,910	1,152,953	1,454,772	1,880,204	1,770,880	1,778,814	2,054,548	1,842,807	1,258,501	1,198,657	1,418,124	1,523,082
W06R11	Wisc Res Flat Rg1 & Fg1	1,444,492	1,346,153	1,376,119	807,834	1,079,943	1,679,550	2,612,384	2,342,495	857,385	1,222,592	1,524,672	1,520,202	1,484,485
W06R17	Wisc Res Tou Rg2	69,828	66,720	67,104	41,196	43,090	60,520	92,322	79,600	32,893	52,598	78,081	76,848	63,400
	Total Wisconsin Residential	1,514,320	1,412,874	1,443,223	849,030	1,123,033	1,740,070	2,704,706	2,422,095	890,279	1,275,190	1,602,753	1,597,050	1,547,885
	Total Wisconsin Retail	3,865,158	3,767,155	3,698,332	3,513,986	4,244,731	4,779,490	5,765,356	5,801,257	4,057,444	3,673,619	3,902,226	4,136,236	4,267,082
	Total Wisconsin	4,409,105	4,299,427	4,219,451	4,027,906	4,810,107	5,347,720	6,443,829	6,431,479	4,615,571	4,207,318	4,402,517	4,664,475	4,823,242
	Total Native System from This Report	4,236,672	4,152,069	4,101,655	3,883,627	4,592,248	5,116,688	6,081,475	6,071,816	4,363,586	4,016,891	4,255,294	4,529,720	4,616,812
	Native System Peak	4,155,000	4,102,000	4,029,000	3,798,000	4,487,000	5,035,000	6,086,000	6,015,000	4,319,000	3,958,000	4,240,000	4,493,000	4,559,750
	Date of Native System Peak	01/05/06	02/08/06	03/13/06	04/03/06	05/30/06	06/16/06	07/31/06	08/01/06	09/07/06	10/02/06	11/30/06	12/07/06	
	Hour of Native System Peak	18:00	19:00	19:00	11:00	12:00	16:00	17:00	14:00	14:00	19:00	18:00	18:00	
	Variation from Native System Peak	1.97%	1.22%	1.80%	2.25%	2.35%	1.62%	-0.07%	0.94%	1.03%	1.49%	0.36%	0.82%	1.25%

Wisconsin Electric Power Company
2006 Class Load Analysis
Energy Report (MWH)
Customer Level

9/11/09 14:34

Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
M06C00	Mich Company Use	146	147	139	122	110	112	109	103	106	114	130	160	1,498
	Total Michigan Company Use	146	147	139	122	110	112	109	103	106	114	130	160	1,498
M06F60	Mich Wholesale Rate 60 <69KV	4,425	4,044	3,918	2,892	3,339	3,752	5,769	4,541	4,498	4,587	4,754	5,097	51,617
	Total Michigan Wholesale	4,425	4,044	3,918	2,892	3,339	3,752	5,769	4,541	4,498	4,587	4,754	5,097	51,617
M06L88	Mich Lighting Rate 88	168	160	178	166	187	156	174	162	164	187	156	182	2,040
M06L89	Mich Lighting Rate 89	1	1	1	1	1	1	1	0	0	1	1	1	
M06U89	Mich Pumping Rate 89	1	1	1	1	1	1	1	1	1	1	1	1	11
M06LRS	Mich Residential Area Lighting	30	34	31	31	31	34	37	24	31	34	31	29	376
M06LSC	Mich Secondary Area Lighting	47	59	48	51	56	49	67	33	57	56	65	56	643
	Total Michigan Lighting & Other	247	255	259	249	276	240	279	220	254	278	254	269	3,080
M06P22	Mich Gen Pri CP1 Rate <69KV	1,758	1,627	1,749	1,665	1,859	1,914	2,018	2,056	1,748	1,685	1,569	1,657	21,305
M06P26	Mich Gen Pri Rate 26 Champion Firm	21,683	19,849	21,998	23,492	24,654	25,423	26,152	26,848	25,086	24,304	21,383	21,279	282,151
M06P46	Mich Gen Pri Rate 26 Champion Curt	990	900	921	521	1,028	1,013	700	1,033	669	908	934	962	10,580
M06P42	Mich Gen Pri Curt Rate <26KV	6,686	6,048	6,710	6,298	6,707	6,442	6,405	6,631	3,735	5,907	6,228	6,114	73,912
M06P27	Mich White Pine Mine 69 KV	3,653	3,426	3,842	3,765	3,669	3,830	4,120	4,062	3,427	3,566	3,655	3,937	44,954
M06P25	Mich Gen Pri Rate 25 Mines	183,984	161,686	184,537	169,669	176,556	154,073	127,005	169,255	148,856	171,751	148,419	184,802	1,980,592
	Total Michigan General Primary	218,755	193,536	219,756	205,411	214,473	192,696	166,401	209,883	183,522	208,122	182,188	218,752	2,413,494
M06S72	Mich Gen Sec Cg1	5,879	6,918	5,380	5,387	6,056	5,841	7,717	3,763	6,003	5,870	7,082	7,000	72,897
M06S40	Mich Gen Sec Cg5 Tou	972	1,128	887	896	1,101	1,124	1,323	568	998	971	1,022	1,282	12,271
M06S76	Mich Gen Sec Cg2 Tou	225	188	210	191	158	234	185	191	175	172	126	166	2,221
M06S74	Mich Gen Sec Cg3 Tou Demand	5,577	5,119	5,542	5,211	5,374	5,597	6,147	6,457	5,845	5,763	5,228	5,504	67,364
	Total Michigan General Secondary	12,653	13,353	12,020	11,685	12,689	12,795	15,372	10,979	13,021	12,776	13,458	13,952	154,753
M06R62	Mich Res Flat Rg1	14,634	14,992	12,739	10,984	11,106	13,800	14,903	9,771	11,430	13,172	13,817	14,604	155,953
M06R27	Mich Res TOU Rg2	782	801	673	554	480	520	580	368	467	603	677	730	7,236
	Total Michigan Residential	15,416	15,794	13,412	11,538	11,586	14,320	15,484	10,138	11,897	13,776	14,495	15,334	163,189
	Total Michigan Retail	247,071	222,938	245,447	228,883	239,024	220,051	197,535	231,221	208,694	234,951	210,395	248,307	2,734,516
	Total Michigan	251,643	227,129	249,504	231,898	242,473	223,915	203,414	235,864	213,298	239,652	215,278	253,564	2,787,631

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Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
W06C00	Wisc Company Use	6,432	6,512	6,132	5,773	6,319	5,978	5,754	5,854	5,660	5,726	5,760	6,254	72,154
	Total Wisconsin Company Use	6,432	6,512	6,132	5,773	6,319	5,978	5,754	5,854	5,660	5,726	5,760	6,254	72,154
W06F60	Wisc Wholesale 345KV (Geneva)													0
W06F63	Wisc Wholesale 34KV													0
	Total Wisc Wholesale (Excluding WPPI)	0	0	0	0	0	0	0	0	0	0	0	0	0
W06W01	Wisc WPPI Transmission	310,845	286,288	309,497	274,999	296,359	313,131	355,660	345,115	300,933	303,663	292,328	309,258	3,698,076
	Total WPPI Transmission	310,845	286,288	309,497	274,999	296,359	313,131	355,660	345,115	300,933	303,663	292,328	309,258	3,698,076
	Total Wisc Wholesale (Including WPPI)	310,845	286,288	309,497	274,999	296,359	313,131	355,660	345,115	300,933	303,663	292,328	309,258	3,698,076
W06L01	Wisc Lighting Rate 01	5,445	5,088	5,951	5,202	5,750	5,197	5,604	5,176	5,221	5,920	5,469	5,472	65,495
W06L05	Wisc Lighting Rate 05	562	422	437	370	481	475	677	589	487	531	463	463	5,957
W06U05	Wisc Pumping Rate 05	563	422	437	371	481	475	678	589	487	531	463	463	5,960
W06L36	Wisc Lighting Rate 36 (Tou)	7,061	5,802	5,933	4,740	4,809	3,916	4,250	4,399	5,025	6,158	6,355	6,860	65,308
W06L46	Wisc Lighting Rate 46	959	743	752	630	669	594	664	634	682	812	841	917	8,897
W06LRS	Wisc Res Area Lighting	328	306	325	305	306	293	353	302	276	315	307	303	3,719
W06LSC	Wisc Gen Sec & Gen Pri Area Lighting	1,860	1,828	1,976	1,766	1,880	1,870	1,934	1,917	1,888	1,993	1,874	1,853	22,640
	Total Wisconsin Lighting & Other	16,778	14,611	15,812	13,385	14,376	12,820	14,160	13,607	14,066	16,260	15,773	16,330	177,976
W06P28	Wisc Gen Pri Cp1 8KV Customers	25,031	23,189	25,167	23,606	25,916	26,231	28,162	28,830	25,488	25,130	24,025	24,811	305,584
W06P81	Wisc Gen Pri Cp3a <13KV	1,069	995	1,131	1,072	1,141	1,135	1,134	1,149	1,116	1,117	1,008	1,027	13,093
	Total Wisconsin GP Low Voltage	26,100	24,184	26,298	24,677	27,056	27,366	29,296	29,978	26,604	26,247	25,033	25,839	318,677
W06P27	Wisc Gen Pri Cp1 13KV Customers	111,859	103,468	112,638	109,087	120,081	124,865	138,762	141,005	126,811	117,190	109,097	107,776	1,422,639
W06P26	Wisc Gen Pri Cp1 26KV Customers	321,255	301,265	333,868	310,397	338,585	349,025	358,317	377,771	330,848	325,166	300,997	296,515	3,944,008
W06P25	Wisc Gen Pri Cp1 34KV Customers	59,572	56,113	62,584	59,735	60,856	61,019	60,103	64,690	57,368	55,824	58,697	57,848	714,410
W06P34	Wisc Gen Pri Cp1 26KV Charter	1,723	1,574	1,682	1,588	1,647	1,636	1,655	1,693	1,625	1,608	1,488	1,547	19,468
W06P33	Wisc Gen Pri Cp1 34KV-Stora Enso Kimberly	22,625	20,316	22,968	23,099	24,260	25,420	26,993	27,359	25,696	24,538	23,688	21,931	288,893
W06P21	Wisc Gen Pri Cp2m 13KV	2,490	1,890	2,141	1,947	2,488	2,056	2,523	2,227	2,053	1,869	1,943	1,716	25,343
W06P22	Wisc Gen Pri Cp2m 26KV	25,633	23,685	26,335	24,677	25,878	25,618	26,073	26,359	25,467	25,629	24,224	23,083	302,661
W06P20	Wisc Gen Pri Cp2m 26KV Charter	35,412	29,904	35,861	32,707	33,900	34,627	28,290	33,083	28,467	30,710	24,096	30,680	377,738
W06P29	Wisc Gen Pri Cp3 13KV	2,445	2,310	2,613	2,372	2,466	2,484	2,186	2,670	2,660	2,785	2,698	2,239	29,928
W06P30	Wisc Gen Pri Cp3 26KV	19,540	18,488	21,965	20,213	22,704	23,609	18,728	23,280	23,206	24,037	22,060	20,721	258,551
W06P40	Wisc Gen Pri Cp3 34KV	4,356	3,835	4,455	4,192	7,085	6,872	6,106	7,253	6,560	7,077	6,294	5,703	
W06P82	Wisc Gen Pri Cp3a 13KV	320	286	327	254	255	251	225	246	229	239	233	233	3,096
W06P83	Wisc Gen Pri Cp3a 26KV	7,302	6,637	7,206	6,737	7,248	7,390	7,918	8,587	7,530	7,097	6,735	7,018	87,405
W06P84	Wisc Gen Pri Cp3a 34KV	16,514	14,935	15,800	15,426	15,947	16,100	16,674	16,378	14,736	14,848	7,980	7,888	173,228
W06P54	Wisc Gen Pri CpFN 34KV	8,011	8,525	9,654	9,255	9,781	9,315	3,638	3,593	3,272	3,112	2,411	2,423	
	Total Wisconsin GP Medium Voltage	639,058	593,231	660,098	621,686	673,180	690,288	698,191	736,194	656,528	641,729	592,642	587,322	7,790,147
W06P38	Wisc Gen Pri Cp1 138KV	8,739	7,678	8,327	8,311	7,291	7,371	7,734	8,533	7,642	7,659	9,437	10,008	98,728
W06P39	Wisc Gen Pri CpFN 138KV	9,586	8,691	9,452	9,158	9,570	9,247	9,262	9,537	9,380	9,658	9,153	9,152	111,845
W06P32	Wisc Gen Pri Cp3 138KV Stora Enso Niagra	18,395	16,275	18,226	18,235	16,096	18,547	19,627	20,557	22,167	17,075	19,561	18,297	223,058
	Total Wisconsin GP High Voltage	36,720	32,644	36,005	35,704	32,956	35,164	36,623	38,627	39,189	34,392	38,151	37,457	433,631
	Total Wisconsin General Primary	701,877	650,058	722,401	682,067	733,193	752,817	764,110	804,800	722,321	702,367	655,826	650,617	8,542,455

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Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
W06S44	Wisc Gen Sec Cg1 Flat	166,206	161,977	169,459	139,078	159,170	177,567	197,413	199,714	166,255	171,959	162,372	181,984	2,053,155
W06S42	Wisc Gen Sec Cg6 Small Tou	8,543	7,391	8,261	6,538	6,790	7,986	8,503	8,785	7,062	7,109	7,949	9,642	94,559
W06S34	Wisc Gen Sec Cg2 Flat Demand	89,556	85,009	93,233	79,476	91,049	93,163	97,424	100,062	89,491	92,500	87,424	95,635	1,094,022
W06S70	Wisc Gen Sec Cg3 Tou Demand	436,007	425,439	452,063	391,428	460,562	488,485	518,769	524,692	450,177	449,135	379,448	449,360	5,425,563
W06S71	Wisc Gen Sec Cg3c Curt	2,414	2,235	2,499	3,004	3,404	3,495	3,438	3,880	3,441	3,412	3,131	2,844	37,198
W06S80	Wisc Gen Sec Cg3a Coop	1,796	1,613	1,804	1,620	2,201	2,253	2,016	2,333	1,954	1,951	1,644	1,580	22,764
	Total Cg3, Cg3A and Cg3C	440,217	429,287	456,366	396,051	466,168	494,233	524,223	530,904	455,572	454,498	384,223	453,784	5,485,525
	Total Wisconsin General Secondary	704,522	683,664	727,319	621,144	723,176	772,949	827,563	839,466	718,380	726,065	641,969	741,045	8,727,261
W06R11	Wisc Res Flat Rg1 & Fg1	673,087	580,008	595,733	497,560	549,259	638,056	890,746	749,434	518,323	572,121	621,692	700,154	7,586,171
W06R17	Wisc Res Tou Rg2	41,320	35,835	35,388	27,158	27,496	29,466	38,508	32,596	24,637	30,148	34,812	39,917	397,283
	Total Wisconsin Residential	714,407	615,842	631,121	524,718	576,755	667,522	929,254	782,030	542,960	602,269	656,504	740,071	7,983,455
	Total Wisconsin Retail	2,137,584	1,964,176	2,096,653	1,841,314	2,047,500	2,206,109	2,535,087	2,439,902	1,997,727	2,046,962	1,970,072	2,148,063	25,431,146
	Total Wisconsin	2,454,861	2,256,976	2,412,281	2,122,086	2,350,178	2,525,218	2,896,501	2,790,871	2,304,319	2,356,352	2,268,159	2,463,575	29,201,376
	Total Dem Obl from This Report	2,706,503	2,484,105	2,661,785	2,353,983	2,592,651	2,749,133	3,099,914	3,026,735	2,517,617	2,596,004	2,483,438	2,717,139	31,989,007
	Total DO less CU from This Report	2,699,925	2,477,446	2,655,514	2,348,088	2,586,222	2,743,043	3,094,051	3,020,779	2,511,851	2,590,163	2,477,548	2,710,725	31,915,356
	Booked Sales (less Resale)from Finance	2,524,956	2,334,144	2,518,308	2,253,016	2,439,251	2,538,563	2,918,054	2,813,078	2,387,086	2,433,294	2,328,795	2,519,366	30,007,911
	Variation from Finance Booked Sales	6.93%	6.14%	5.45%	4.22%	6.03%	8.05%	6.03%	7.38%	5.23%	6.45%	6.39%	7.60%	6.36%
	Total Retail from This Report	2,384,655	2,187,113	2,342,099	2,070,197	2,286,524	2,426,160	2,732,621	2,671,123	2,206,420	2,281,914	2,180,466	2,396,370	28,165,662
	Booked Retail Sales from Finance	2,367,596	2,179,955	2,357,040	2,104,059	2,284,625	2,391,884	2,759,012	2,654,654	2,246,759	2,282,531	2,173,812	2,386,975	28,188,902
	Variation from Retail Booked Sales	0.72%	0.33%	-0.63%	-1.61%	0.08%	1.43%	-0.96%	0.62%	-1.80%	-0.03%	0.31%	0.39%	-0.08%

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Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
M06C00	Mich Company Use	158	159	150	132	118	121	118	111	115	123	140	173	1,619
	Total Michigan Company Use	158	159	150	132	118	121	118	111	115	123	140	173	1,619
M06F60	Mich Wholesale Rate 60 <69KV	4,621	4,220	4,085	3,012	3,476	3,906	6,016	4,743	4,681	4,778	4,957	5,321	53,815
	Total Michigan Wholesale	4,621	4,220	4,085	3,012	3,476	3,906	6,016	4,743	4,681	4,778	4,957	5,321	53,815
M06L88	Mich Lighting Rate 88	183	174	193	179	203	169	188	176	178	202	170	198	2,213
M06L89	Mich Lighting Rate 89	1	1	1	1	1	1	1	1	1	1	1	1	12
M06U89	Mich Pumping Rate 89	1	1	1	1	1	1	1	1	1	1	1	1	12
M06LRS	Mich Residential Area Lighting	33	37	34	33	33	36	40	26	33	36	33	32	408
M06LSC	Mich Secondary Area Lighting	51	64	52	55	60	53	72	36	62	60	70	61	697
	Total Michigan Lighting & Other	269	277	281	270	298	260	303	239	275	301	275	293	3,341
M06P22	Mich Gen Pri CP1 Rate <69KV	1,835	1,697	1,823	1,734	1,935	1,993	2,104	2,148	1,819	1,756	1,637	1,730	22,210
M06P26	Mich Gen Pri Rate 26 Champion Firm	22,126	20,254	22,450	23,976	25,166	25,949	26,685	27,397	25,600	24,805	21,823	21,715	287,946
M06P46	Mich Gen Pri Rate 26 Champion Curt	1,011	918	940	532	1,050	1,034	715	1,054	683	926	953	982	10,797
M06P42	Mich Gen Pri Curt Rate <26KV	6,981	6,311	6,996	6,559	6,981	6,707	6,678	6,926	3,887	6,153	6,494	6,383	77,057
M06P27	Mich White Pine Mine 69 KV	3,728	3,496	3,921	3,843	3,745	3,909	4,204	4,145	3,498	3,639	3,730	4,018	45,877
M06P25	Mich Gen Pri Rate 25 Mines	187,741	164,986	188,327	173,168	180,228	157,256	129,592	172,712	151,907	175,287	151,473	188,591	2,021,269
	Total Michigan General Primary	223,422	197,662	224,457	209,812	219,106	196,848	169,978	214,381	187,394	212,567	186,111	223,418	2,465,156
M06S72	Mich Gen Sec Cg1	6,363	7,484	5,812	5,812	6,530	6,304	8,347	4,076	6,480	6,335	7,654	7,576	78,773
M06S40	Mich Gen Sec Cg5 Tou	1,052	1,221	958	967	1,187	1,213	1,431	615	1,077	1,048	1,104	1,387	13,260
M06S76	Mich Gen Sec Cg2 Tou	244	203	227	206	170	252	200	207	189	186	136	180	2,400
M06S74	Mich Gen Sec Cg3 Tou Demand	5,999	5,505	5,955	5,594	5,768	6,012	6,615	6,957	6,280	6,189	5,617	5,920	72,411
	Total Michigan General Secondary	13,657	14,413	12,952	12,578	13,656	13,782	16,594	11,854	14,026	13,758	14,511	15,062	166,843
M06R62	Mich Res Flat Rg1	15,975	16,364	13,872	11,936	12,065	15,012	16,260	10,674	12,433	14,325	15,061	15,949	169,927
M06R27	Mich Res TOU Rg2	858	879	735	604	524	568	635	403	510	659	741	800	7,915
	Total Michigan Residential	16,832	17,243	14,607	12,541	12,588	15,580	16,896	11,077	12,943	14,983	15,803	16,749	177,843
	Total Michigan Retail	254,181	229,596	252,297	235,201	245,648	226,469	203,770	237,552	214,638	241,609	216,699	255,522	2,813,183
	Total Michigan	258,960	233,975	256,532	238,345	249,242	230,496	209,904	242,406	219,433	246,510	221,797	261,016	2,868,617

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Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
W06C00	Wisc Company Use	6,991	7,075	6,655	6,260	6,852	6,490	6,263	6,385	6,146	6,210	6,249	6,795	78,372
	Total Wisconsin Company Use	6,991	7,075	6,655	6,260	6,852	6,490	6,263	6,385	6,146	6,210	6,249	6,795	78,372
W06F60	Wisc Wholesale 345KV (Geneva)	0	0	0	0	0	0	0	0	0	0	0	0	0
W06F63	Wisc Wholesale 34KV	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Wisc Wholesale (Excluding WPPI)	0	0	0	0	0	0	0	0	0	0	0	0	0
W06W01	Wisc WPPI Transmission	317,892	292,781	316,529	281,274	303,184	320,317	363,801	353,070	307,830	310,614	299,011	316,287	3,782,591
	Total WPPI Transmission	317,892	292,781	316,529	281,274	303,184	320,317	363,801	353,070	307,830	310,614	299,011	316,287	3,782,591
	Total Wisc Wholesale (Including WPPI)	317,892	292,781	316,529	281,274	303,184	320,317	363,801	353,070	307,830	310,614	299,011	316,287	3,782,591
W06L01	Wisc Lighting Rate 01	5,914	5,523	6,453	5,634	6,228	5,633	6,085	5,631	5,659	6,415	5,931	5,942	71,049
W06L05	Wisc Lighting Rate 05	611	458	474	401	521	515	735	641	528	575	502	502	6,464
W06U05	Wisc Pumping Rate 05	611	458	474	401	521	515	736	641	528	575	502	503	6,467
W06L36	Wisc Lighting Rate 36 (Tou)	7,670	6,298	6,433	5,134	5,209	4,244	4,615	4,786	5,447	6,673	6,892	7,450	70,851
W06L46	Wisc Lighting Rate 46	1,042	807	816	683	724	643	721	690	739	880	912	996	9,652
W06LRS	Wisc Res Area Lighting	356	332	352	331	331	318	383	329	299	342	333	329	4,034
W06LSC	Wisc Gen Sec & Gen Pri Area Lighting	2,020	1,984	2,142	1,913	2,036	2,026	2,101	2,086	2,047	2,160	2,033	2,013	24,560
	Total Wisconsin Lighting & Other	18,224	15,859	17,144	14,497	15,570	13,894	15,377	14,803	15,247	17,620	17,105	17,735	193,076
W06P28	Wisc Gen Pri Cp1 8KV Customers	26,015	24,097	26,145	24,524	26,931	27,268	29,302	30,018	26,503	26,117	24,968	25,786	317,674
W06P81	Wisc Gen Pri Cp3a <13KV	1,111	1,034	1,175	1,113	1,185	1,180	1,180	1,196	1,160	1,161	1,047	1,068	13,611
	Total Wisconsin GP Low Voltage	27,126	25,131	27,319	25,637	28,116	28,448	30,482	31,213	27,664	27,278	26,016	26,853	331,284
W06P27	Wisc Gen Pri Cp1 13KV Customers	115,994	107,276	116,744	113,067	124,491	129,500	144,051	146,478	131,560	121,513	113,119	111,752	1,475,545
W06P26	Wisc Gen Pri Cp1 26KV Customers	333,128	312,355	346,038	321,723	351,021	361,981	371,976	392,432	343,239	337,161	312,092	307,453	4,090,599
W06P25	Wisc Gen Pri Cp1 34KV Customers	61,774	58,178	64,865	61,915	63,091	63,284	62,395	67,201	59,517	57,883	60,861	59,982	740,946
W06P34	Wisc Gen Pri Cp1 26KV Charter	1,787	1,632	1,744	1,646	1,707	1,697	1,719	1,759	1,686	1,667	1,543	1,604	20,191
W06P33	Wisc Gen Pri Cp1 34KV-Stora Enso Kimberly	23,462	21,064	23,806	23,942	25,151	26,363	28,022	28,420	26,658	25,443	24,562	22,740	299,632
W06P21	Wisc Gen Pri Cp2m 13KV	2,582	1,960	2,219	2,018	2,579	2,132	2,619	2,314	2,130	1,938	2,015	1,780	26,285
W06P22	Wisc Gen Pri Cp2m 26KV	26,581	24,557	27,295	25,578	26,828	26,569	27,067	27,382	26,420	26,574	25,117	23,934	313,902
W06P20	Wisc Gen Pri Cp2m 26KV Charter	36,721	31,005	37,169	33,900	35,145	35,912	29,368	34,367	29,533	31,843	24,985	31,812	391,760
W06P29	Wisc Gen Pri Cp3 13KV	2,535	2,395	2,709	2,459	2,557	2,576	2,269	2,774	2,760	2,888	2,797	2,321	31,040
W06P30	Wisc Gen Pri Cp3 26KV	20,262	19,168	22,766	20,950	23,538	24,485	19,442	24,184	24,075	24,924	22,873	21,486	268,153
W06P40	Wisc Gen Pri Cp3 34KV	4,517	3,976	4,617	4,345	7,345	7,127	6,339	7,535	6,806	7,338	6,526	5,914	72,383
W06P82	Wisc Gen Pri Cp3a 13KV	331	296	339	264	265	260	233	255	237	247	241	242	3,211
W06P83	Wisc Gen Pri Cp3a 26KV	7,572	6,882	7,468	6,983	7,514	7,664	8,220	8,921	7,812	7,359	6,983	7,277	90,655
W06P84	Wisc Gen Pri Cp3a 34KV	17,124	15,485	16,376	15,989	16,533	16,698	17,310	17,013	15,288	15,396	8,275	8,179	179,666
W06P54	Wisc Gen Pri CpFN 34KV	8,307	8,839	10,006	9,593	10,140	9,661	3,776	3,733	3,395	3,227	2,500	2,512	75,690
	Total Wisconsin GP Medium Voltage	662,677	615,068	684,159	644,371	697,906	715,911	724,806	764,766	681,115	665,402	614,487	608,988	8,079,657
W06P38	Wisc Gen Pri Cp1 138KV	8,917	7,834	8,497	8,483	7,442	7,523	7,892	8,707	7,798	7,816	9,631	10,213	100,754
W06P39	Wisc Gen Pri CpFN 138KV	9,782	8,869	9,646	9,346	9,768	9,437	9,450	9,732	9,573	9,856	9,342	9,339	114,141
W06P32	Wisc Gen Pri Cp3 138KV Stora Enso Niagra	18,770	16,607	18,600	18,610	16,430	18,930	20,027	20,977	22,621	17,427	19,964	18,672	227,635
	Total Wisconsin GP High Voltage	37,469	33,310	36,743	36,439	33,641	35,890	37,369	39,416	39,992	35,099	38,936	38,224	442,530
	Total Wisconsin General Primary	727,273	673,509	748,222	706,448	759,663	780,249	792,657	835,396	748,771	727,780	679,439	674,066	8,853,471

Wisconsin Electric Power Company
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Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
W06S44	Wisc Gen Sec Cg1 Flat	180,651	175,977	183,931	150,804	172,597	192,788	214,864	217,830	180,557	186,486	176,164	197,724	2,230,375
W06S42	Wisc Gen Sec Cg6 Small Tou	9,285	8,030	8,966	7,089	7,363	8,671	9,255	9,582	7,670	7,709	8,624	10,476	102,721
W06S34	Wisc Gen Sec Cg2 Flat Demand	97,366	92,392	101,252	86,244	98,815	101,217	106,074	109,161	97,278	100,399	94,900	103,962	1,189,060
W06S70	Wisc Gen Sec Cg3 Tou Demand	471,027	459,499	488,043	422,319	496,987	527,588	561,292	568,672	486,533	484,734	409,493	485,453	5,861,639
W06S71	Wisc Gen Sec Cg3c Curt	2,608	2,414	2,698	3,241	3,674	3,775	3,720	4,205	3,719	3,682	3,379	3,072	40,187
W06S80	Wisc Gen Sec Cg3a Coop	1,940	1,742	1,947	1,748	2,376	2,434	2,182	2,528	2,111	2,105	1,774	1,707	24,593
	Total Cg3, Cg3A and Cg3C	475,575	463,656	492,688	427,308	503,037	533,796	567,194	575,405	492,364	490,521	414,646	490,232	5,926,420
	Total Wisconsin General Secondary	762,877	740,055	786,837	671,444	781,812	836,472	897,387	911,978	777,870	785,116	694,334	802,394	9,448,576
W06R11	Wisc Res Flat Rg1 & Fg1	732,776	630,990	647,437	540,036	595,996	693,452	971,117	819,266	563,262	620,946	675,394	762,062	8,252,733
W06R17	Wisc Res Tou Rg2	45,405	39,339	38,790	29,713	30,069	32,280	42,350	35,964	26,996	32,989	38,141	43,847	435,883
	Total Wisconsin Residential	778,181	670,329	686,227	569,749	626,065	725,732	1,013,467	855,230	590,257	653,935	713,535	805,909	8,688,616
	Total Wisconsin Retail	2,286,556	2,099,751	2,238,430	1,962,138	2,183,110	2,356,346	2,718,889	2,617,406	2,132,145	2,184,451	2,104,413	2,300,104	27,183,739
	Total Wisconsin	2,611,438	2,399,607	2,561,614	2,249,673	2,493,146	2,683,154	3,088,952	2,976,861	2,446,122	2,501,275	2,409,672	2,623,187	31,044,702
	Total System Demand Obligation	2,870,398	2,633,582	2,818,147	2,488,018	2,742,388	2,913,650	3,298,857	3,219,267	2,665,555	2,747,785	2,631,469	2,884,203	33,913,318
	Total Native System from This Report	2,552,506	2,340,801	2,501,618	2,206,744	2,439,204	2,593,333	2,935,055	2,866,198	2,357,725	2,437,171	2,332,458	2,567,915	30,130,727
	Native System	2,498,413	2,297,391	2,457,903	2,220,777	2,395,716	2,505,771	2,912,946	2,846,098	2,356,491	2,379,582	2,304,905	2,523,068	29,699,061
	Variation from Native System	54,093	43,410	43,715	-14,033	43,488	87,562	22,109	20,100	1,234	57,589	27,553	44,847	431,666
	Variation from Native System	2.17%	1.89%	1.78%	-0.63%	1.82%	3.49%	0.76%	0.71%	0.05%	2.42%	1.20%	1.78%	1.45%

Wisconsin Electric Power Company
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Generation Level

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Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Maximum
M07C00	Mich Company Use	359	363	324	304	278	274	259	235	265	261	314	448	448
	Total Michigan Company Use	359	363	324	304	278	274	259	235	265	261	314	448	448
M07F60	Mich Wholesale Rate 60 <69KV	10,220	10,704	9,690	6,816	10,768	11,834	13,899	14,192	11,732	8,876	10,426	10,913	14,192
	Total Michigan Wholesale	10,220	10,704	9,690	6,816	10,768	11,834	13,899	14,192	11,732	8,876	10,426	10,913	14,192
M07L88	Mich Lighting Rate 88	396	471	512	633	648	761	677	637	515	483	440	394	761
M07L89	Mich Lighting Rate 89	2	3	3	2	2	2	2	4	3	1	1	3	2
M07U89	Mich Pumping Rate 89	4	2	5	2	1	1	10	10	10	11	1	4	1
M07LRS	Mich Residential Area Lighting	72	98	91	115	122	146	125	119	94	79	80	72	146
M07LSC	Mich Secondary Area Lighting	107	157	147	203	203	268	218	182	180	136	136	144	268
	Total Michigan Lighting & Other	581	731	758	954	976	1,179	1,032	951	802	710	658	618	1,179
M07P22	Mich Gen Pri CP1 Rate <69KV	1,989	1,680	2,212	2,730	1,822	3,371	2,231	2,027	2,653	2,234	1,751	2,486	3,371
M07P26	Mich Gen Pri Rate 26 Champion Firm	30,536	33,841	31,430	35,570	31,696	58,394	38,456	36,531	35,732	57,464	33,270	29,627	58,394
M07P46	Mich Gen Pri Rate 26 Champion Curt	1,753	1,445	1,418	0	1,614	1,844	1,625	1,790	1,714	227	1,719	1,527	1,844
M07P42	Mich Gen Pri Curt Rate <26KV	7,376	10,996	9,089	9,663	7,155	9,964	10,596	9,765	7,369	7,735	7,407	8,270	9,964
M07P27	Mich White Pine Mine 69 KV	5,147	5,628	5,847	5,440	5,979	5,663	5,920	5,889	5,260	5,987	5,407	5,286	5,663
M07P25	Mich Gen Pri Rate 25 Mines	263,211	259,203	282,009	294,787	295,295	280,898	274,541	267,263	278,811	255,537	273,862	276,930	280,898
	Total Michigan General Primary	310,012	312,793	332,004	348,191	343,561	360,134	333,369	323,265	331,538	329,183	323,415	324,126	360,134
MZ7S72	Mich Gen Sec Cg1	8,885	9,323	8,563	0	9,997	15,595	13,109	17,399	21,998	15,430	11,584	14,356	21,998
M07S40	Mich Gen Sec Cg5 Tou	2,025	2,657	1,643	2,437	1,726	2,777	2,274	1,617	1,617	1,382	2,320	2,185	1,617
M07S76	Mich Gen Sec Cg2 Tou	319	329	319	305	305	382	335	344	419	342	289	388	419
M07S74	Mich Gen Sec Cg3 Tou Demand	6,185	7,108	8,221	8,945	6,144	10,773	8,934	7,574	8,656	7,725	7,411	8,555	8,656
	Total Michigan General Secondary	17,413	19,418	18,745	11,687	18,173	29,526	24,652	26,934	32,690	24,879	21,604	25,484	32,690
MZ7R62	Mich Res Flat Rg1	34,162	39,933	30,789	29,425	23,522	38,149	34,732	32,201	25,639	20,026	33,969	39,877	39,933
M07R27	Mich Res TOU Rg2	1,383	2,172	1,483	1,635	896	1,190	1,050	889	772	758	1,344	1,376	2,172
	Total Michigan Residential	35,545	42,105	32,272	31,059	24,418	39,339	35,782	33,090	26,411	20,783	35,312	41,253	42,105
	Total Michigan Retail	363,552	375,047	383,779	391,892	387,127	430,178	394,835	384,241	391,441	375,555	380,990	391,481	436,108
	Total Michigan	374,131	386,113	393,793	399,011	398,173	442,286	408,993	398,668	403,439	384,692	391,730	402,841	450,748

Wisconsin Electric Power Company
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Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Maximum
W07C00	Wisc Company Use	14,167	15,651	13,590	13,589	15,523	14,720	13,681	13,342	14,473	14,001	13,676	15,167	15,651
	Total Wisconsin Company Use	14,167	15,651	13,590	13,589	15,523	14,720	13,681	13,342	14,473	14,001	13,676	15,167	15,651
W07F60	Wisc Wholesale 345KV (Geneva)	0	0	0	0	0	0	0	0	0	0	0	0	0
W07F63	Wisc Wholesale 34KV	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Wisc Wholesale (Excluding WPPI)	0	0	0	0	0	0	0	0	0	0	0	0	0
W07W01	Wisc WPPI Transmission	530,766	555,315	520,564	494,022	570,851	733,455	787,625	769,334	724,227	641,352	628,036	653,524	787,625
	Total WPPI Transmission	530,766	555,315	520,564	494,022	570,851	733,455	787,625	769,334	724,227	641,352	628,036	653,524	787,625
	Total Wisc Wholesale (Including WPPI)	530,766	555,315	520,564	494,022	570,851	733,455	787,625	769,334	724,227	641,352	628,036	653,524	787,625
W07L01	Wisc Lighting Rate 01	13,383	15,471	16,918	18,880	22,940	25,097	23,329	19,056	16,658	15,528	14,173	12,732	23,329
W07L05	Wisc Lighting Rate 05	964	1,023	1,370	1,547	1,955	2,363	2,759	2,040	1,591	1,291	1,193	1,184	2,759
W07U05	Wisc Pumping Rate 05	885	877	886	753	1,087	1,137	1,562	1,512	1,621	1,426	1,425	1,354	1,562
W07L36	Wisc Lighting Rate 36 (Tou)	16,202	16,579	16,158	16,703	18,492	17,905	17,457	15,831	15,464	16,096	15,998	16,629	17,457
W07L46	Wisc Lighting Rate 46	2,150	2,194	2,085	2,137	2,457	2,631	2,642	2,263	2,090	2,127	2,125	2,219	2,642
W07LRS	Wisc Res Area Lighting	683	954	874	1,026	1,114	1,420	1,280	1,197	908	804	718	688	1,280
W07LSC	Wisc Gen Sec & Gen Pri Area Lighting	4,280	5,357	5,645	6,437	7,511	8,332	8,582	7,206	5,699	5,283	4,243	4,145	8,582
	Total Wisconsin Lighting & Other	38,546	42,454	43,937	47,484	55,557	58,885	57,611	49,105	44,031	42,554	39,874	38,951	58,885
W07P28	Wisc Gen Pri Cp1 8KV Customers	45,140	47,590	47,979	45,670	51,266	50,859	46,430	46,738	49,499	52,919	43,602	44,512	46,738
W07P81	Wisc Gen Pri Cp3a <13KV	2,136	2,096	2,041	1,600	1,748	2,287	1,777	1,778	1,847	1,684	1,888	2,040	1,778
	Total Wisconsin GP Low Voltage	47,277	49,687	50,020	47,270	53,014	53,146	48,208	48,516	51,346	54,603	45,490	46,552	48,516
W07P27	Wisc Gen Pri Cp1 13KV Customers	197,755	199,995	217,110	219,068	239,572	261,303	259,271	263,850	257,575	251,007	201,404	200,067	263,850
W07P26	Wisc Gen Pri Cp1 26KV Customers	547,631	553,993	588,924	581,045	637,625	666,353	647,579	671,727	661,637	647,343	547,028	544,917	671,727
W07P25	Wisc Gen Pri Cp1 34KV Customers	95,732	96,818	101,082	98,689	107,976	104,944	113,772	112,694	109,458	106,366	94,978	92,650	112,694
W07P34	Wisc Gen Pri Cp1 26KV Charter	2,264	2,341	2,299	2,229	1,989	2,391	2,268	2,391	2,456	2,348	2,089	2,369	2,391
W07P33	Wisc Gen Pri Cp1 34KV-Stora Enso Kimberly	33,399	32,667	37,803	32,255	33,936	36,379	36,125	33,741	36,041	34,849	32,357	31,265	33,741
W07P21	Wisc Gen Pri Cp2m 13KV	3,526	3,212	2,200	2,425	4,594	4,655	4,527	4,553	2,467	2,245	1,826	2,148	4,553
W07P22	Wisc Gen Pri Cp2m 26KV	44,557	37,064	42,320	41,974	43,696	39,201	38,032	39,831	38,636	38,748	38,411	31,378	39,831
W07P20	Wisc Gen Pri Cp2m 26KV Charter	61,445	58,321	55,503	56,597	59,901	62,341	57,266	63,571	59,978	58,463	59,337	59,454	63,571
W07P29	Wisc Gen Pri Cp3 13KV	3,861	3,243	3,556	3,294	3,916	3,289	3,590	3,836	4,142	3,594	4,232	3,866	3,836
W07P30	Wisc Gen Pri Cp3 26KV	48,028	43,997	41,706	30,462	32,441	46,314	33,427	32,011	41,079	38,125	48,662	48,922	32,011
W07P40	Wisc Gen Pri Cp3 34KV	12,160	12,320	12,719	10,478	11,807	9,069	12,908	13,284	11,309	11,485	13,326	9,948	13,284
W07P82	Wisc Gen Pri Cp3a 13KV	629	576	511	524	531	523	523	535	530	549	582	565	535
W07P83	Wisc Gen Pri Cp3a 26KV	12,782	13,505	12,351	13,169	14,970	17,968	15,483	14,907	15,858	13,641	12,858	15,191	14,907
W07P84	Wisc Gen Pri Cp3a 34KV	12,860	11,666	12,995	12,939	15,326	12,837	14,190	13,733	12,767	14,029	12,438	12,084	13,733
W07P54	Wisc Gen Pri CpFN 34KV	4,532	4,984	4,808	4,300	5,529	5,376	5,299	5,371	5,717	5,770	4,425	4,384	5,371
	Total Wisconsin GP Medium Voltage	1,081,161	1,074,700	1,135,888	1,109,447	1,213,808	1,272,943	1,244,259	1,276,035	1,259,650	1,228,563	1,073,954	1,059,208	1,276,035
W07P38	Wisc Gen Pri Cp1 138KV	17,711	12,365	17,459	13,799	11,496	4,116	14,333	9,322	5,690	14,241	7,164	16,763	9,322
W07P39	Wisc Gen Pri CpFN 138KV	12,436	12,333	12,314	12,894	4,240	12,529	12,699	12,448	12,998	12,864	12,299	13,318	12,448
W07P32	Wisc Gen Pri Cp3 138KV Stora Enso Niagra	21,654	5,406	22,560	25,393	27,970	22,225	28,767	28,832	27,114	21,872	20,192	28,334	28,832
	Total Wisconsin GP High Voltage	51,801	30,103	52,333	52,087	43,706	38,870	55,799	50,602	45,801	48,977	39,655	58,415	50,602
	Total Wisconsin General Primary	1,180,238	1,154,490	1,238,242	1,208,804	1,310,528	1,364,959	1,348,265	1,375,154	1,356,797	1,332,143	1,159,099	1,164,175	1,375,154

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Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Maximum
WZ7S44	Wisc Gen Sec Cg1 Flat	284,092	275,888	279,050	273,180	410,534	392,267	348,808	431,387	400,931	302,244	315,531	269,740	431,387
W07S42	Wisc Gen Sec Cg6 Small Tou	16,055	22,354	20,479	17,113	12,430	17,683	23,860	19,500	17,572	20,330	14,318	19,156	19,500
WZ7S34	Wisc Gen Sec Cg2 Flat Demand	261,132	282,563	250,100	237,861	256,698	295,570	309,695	304,724	282,585	281,637	242,547	251,959	304,724
WZ7S70	Wisc Gen Sec Cg3 Tou Demand	964,745	1,023,267	968,305	974,359	1,116,997	1,148,525	1,251,480	1,214,159	1,226,131	1,222,625	974,763	1,002,920	1,214,159
W07S71	Wisc Gen Sec Cg3c Curt	5,096	5,264	5,386	6,562	7,722	6,875	7,838	8,070	9,016	7,143	5,204	5,063	8,070
W07S80	Wisc Gen Sec Cg3a Coop	8,173	3,855	6,953	3,835	4,929	4,649	4,849	5,061	4,996	4,772	3,550	3,723	5,061
	Total Cg3, Cg3A and Cg3C	978,014	1,032,385	980,644	984,756	1,129,649	1,160,049	1,264,167	1,227,290	1,240,143	1,234,541	983,517	1,011,706	1,227,290
	Total Wisconsin General Secondary	1,539,293	1,613,191	1,530,273	1,512,910	1,809,311	1,865,569	1,946,530	1,982,901	1,941,231	1,838,752	1,555,913	1,552,561	1,982,901
WZ7R11	Wisc Res Flat Rg1 & Fg1	1,470,872	1,774,399	1,399,461	1,209,458	1,308,809	2,297,990	2,424,430	2,379,146	2,063,467	1,858,699	1,493,986	1,694,723	2,424,430
WZ7R17	Wisc Res Tou Rg2	76,614	118,928	88,145	77,043	46,264	77,633	99,517	81,430	68,168	78,307	68,785	99,146	99,517
	Total Wisconsin Residential	1,547,487	1,893,327	1,487,606	1,286,501	1,355,072	2,375,623	2,523,947	2,460,577	2,131,635	1,937,005	1,562,770	1,793,870	2,523,947
	Dates and Times of Non Coin Peaks													
	Mich Wholesale	01/15/07	02/06/07	03/05/07	04/06/07	05/30/07	06/26/07	07/31/07	08/02/07	09/06/07	10/08/07	11/29/07	12/16/07	
		18:00	12:00	19:00	10:00	17:00	16:00	17:00	16:00	16:00	11:00	18:00	18:00	
	Mich Lighting	01/24/07	02/21/07	03/26/07	04/01/07	05/19/07	06/04/07	07/21/07	08/04/07	09/21/07	10/06/07	11/05/07	12/23/07	
		7:00	20:00	1:00	2:00	5:00	3:00	5:00	0:00	6:00	5:00	18:00	7:00	
	Mich Large Sized Customers	01/02/07	02/21/07	03/30/07	04/27/07	05/27/07	06/07/07	07/31/07	08/25/07	09/01/07	10/13/07	11/18/07	12/28/07	
		3:00	4:00	21:00	17:00	2:00	16:00	4:00	2:00	22:00	12:00	17:00	21:00	
	Mich Medium Sized Customers	01/17/05	02/08/05	03/02/05	04/19/05	05/31/05	06/27/05	07/13/05	08/01/05	09/06/05	10/05/05	11/30/05	12/05/05	
		11:00	11:00	11:00	11:00	14:00	14:00	14:00	14:00	14:00	11:00	11:00	11:00	
	Mich Small Sized Customers	01/10/07	02/03/07	03/06/07	04/07/07	05/30/07	06/26/07	07/31/07	08/01/07	09/06/07	10/08/07	11/30/07	12/19/07	
		18:00	18:00	19:00	10:00	18:00	18:00	18:00	14:00	14:00	15:00	18:00	18:00	
	Wisc Wholesale													
	Wisc WPPI	01/15/07	02/05/07	03/01/07	04/03/07	05/29/07	06/26/07	07/30/07	08/01/07	09/06/07	10/08/07	11/29/07	12/17/07	
		18:00	19:00	19:00	11:00	14:00	15:00	17:00	13:00	17:00	14:00	19:00	19:00	
	Wisc Lighting	01/21/07	02/12/07	03/06/07	04/03/07	05/29/07	06/15/07	07/16/07	08/23/07	09/04/07	10/23/07	11/21/07	12/06/07	
		19:00	19:00	19:00	22:00	22:00	22:00	22:00	21:00	21:00	20:00	20:00	21:00	
	Wisc Large Sized Customers	01/30/07	02/07/07	03/26/07	04/23/07	05/30/07	06/27/07	07/31/07	08/07/07	09/06/07	10/08/07	11/27/07	12/10/07	
		11:00	11:00	13:00	13:00	14:00	11:00	14:00	14:00	12:00	12:00	10:00	10:00	
	Wisc Medium Sized Customers	01/25/07	02/08/07	03/12/07	04/26/07	05/30/07	06/27/07	07/31/07	08/28/07	09/05/07	10/08/07	11/28/07	12/07/07	
		12:00	12:00	11:00	12:00	12:00	11:00	14:00	12:00	14:00	14:00	11:00	12:00	
	Wisc Small Sized Customers	01/15/07	02/04/07	03/04/07	04/07/07	05/30/07	06/26/07	07/08/07	08/01/07	09/05/07	10/07/07	11/29/07	12/23/07	
		19:00	20:00	20:00	11:00	18:00	18:00	18:00	18:00	18:00	19:00	18:00	19:00	

Wisconsin Electric Power Company
2007 Class Load Analysis
Native System Peak
Generation Level

Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average
M07C00	Mich Company Use	285	275	245	215	278	244	233	200	229	259	243	345	254
	Total Michigan Company Use	285	275	245	215	278	244	233	200	229	259	243	345	254
M07F60	Mich Wholesale Rate 60 <69KV	9,373	10,603	9,387	6,587	10,522	11,834	13,899	13,594	11,255	8,449	10,426	10,675	10,550
	Total Michigan Wholesale	9,373	10,603	9,387	6,587	10,522	11,834	13,899	13,594	11,255	8,449	10,426	10,675	10,550
M07L88	Mich Lighting Rate 88	396	471	512	633	0	0	0	0	0	0	440	394	237
M07L89	Mich Lighting Rate 89	2	3	3	2	0	0	0	0	0	0	1	3	1
M07U89	Mich Pumping Rate 89	2	1	1	0	1	1	1	1	1	1	1	2	1
M07LRS	Mich Residential Area Lighting	72	98	91	115	0	0	0	0	0	0	80	72	44
M07LSC	Mich Secondary Area Lighting	107	157	147	203	0	0	0	0	0	0	136	144	74
	Total Michigan Lighting & Other	579	730	754	953	1	1	1	1	1	1	658	616	358
M07P22	Mich Gen Pri CP1 Rate <69KV	2,621	2,446	2,433	2,262	3,805	2,910	3,454	3,428	3,447	3,732	2,552	2,644	2,978
M07P26	Mich Gen Pri Rate 26 Champion Firm	29,857	30,287	29,686	29,556	39,632	36,213	37,103	36,404	28,871	29,608	30,777	30,894	32,407
M07P46	Mich Gen Pri Rate 26 Champion Curt	1,344	799	847	496	0	1,505	1,678	1,134	1,163	1,809	1,611	1,512	1,158
M07P42	Mich Gen Pri Curt Rate <26KV	9,527	10,056	9,706	11,235	10,137	9,733	8,593	9,717	9,343	9,917	9,268	9,475	9,726
M07P27	Mich White Pine Mine 69 KV	5,441	5,091	5,339	5,309	5,982	5,966	5,786	5,712	5,160	5,766	5,198	5,900	5,554
M07P25	Mich Gen Pri Rate 25 Mines	225,005	235,706	209,030	274,600	258,248	251,224	259,970	249,934	164,142	235,027	256,204	253,705	239,400
	Total Michigan General Primary	273,795	284,385	257,039	323,458	317,803	307,550	316,584	306,328	212,126	285,859	305,611	304,129	291,222
MZ7S72	Mich Gen Sec Cg1	8,479	10,513	8,563	0	14,862	18,770	14,851	13,921	16,563	16,588	11,147	14,784	12,420
M07S40	Mich Gen Sec Cg5 Tou	2,162	2,460	1,643	2,389	1,199	2,369	2,077	2,000	2,237	1,293	2,378	2,344	2,046
M07S76	Mich Gen Sec Cg2 Tou	310	359	319	345	344	404	338	324	408	344	292	393	348
M07S74	Mich Gen Sec Cg3 Tou Demand	9,022	9,165	9,218	8,917	11,935	12,903	11,990	12,052	12,176	12,298	9,440	9,350	10,706
	Total Michigan General Secondary	19,972	22,497	19,743	11,651	28,339	34,446	29,256	28,298	31,383	30,522	23,258	26,871	25,520
MZ7R62	Mich Res Flat Rg1	32,784	38,663	30,789	28,720	19,335	34,847	31,387	34,668	25,351	18,583	33,693	36,980	30,483
M07R27	Mich Res TOU Rg2	1,476	2,011	1,483	1,602	622	1,015	959	1,099	1,068	709	1,377	1,477	1,242
	Total Michigan Residential	34,260	40,674	32,272	30,322	19,957	35,862	32,346	35,767	26,420	19,291	35,070	38,456	31,725
	Total Michigan Retail	328,607	348,286	309,809	366,384	366,101	377,860	378,188	370,394	269,930	335,673	364,596	370,073	348,825
	Total Michigan	338,264	359,164	319,441	373,185	376,901	389,938	392,320	384,187	281,414	344,381	375,265	381,092	359,630

Wisconsin Electric Power Company
2007 Class Load Analysis
Native System Peak
Generation Level

Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average
W07C00	Wisc Company Use	11,236	11,881	10,304	9,603	15,523	13,136	12,315	11,317	12,485	13,904	10,592	11,684	11,999
	Total Wisconsin Company Use	11,236	11,881	10,304	9,603	15,523	13,136	12,315	11,317	12,485	13,904	10,592	11,684	11,999
W07F60	Wisc Wholesale 345KV (Geneva)	0	0	0	0	0	0	0	0	0	0	0	0	0
W07F63	Wisc Wholesale 34KV	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Wisc Wholesale (Excluding WPPI)	0	0	0	0	0	0	0	0	0	0	0	0	0
W07W01	Wisc WPPI Transmission	522,584	555,315	512,383	476,634	541,183	728,340	749,778	746,827	711,952	641,352	580,984	621,820	615,763
	Total WPPI Transmission	522,584	555,315	512,383	476,634	541,183	728,340	749,778	746,827	711,952	641,352	580,984	621,820	615,763
	Total Wisc Wholesale (Including WPPI)	522,584	555,315	512,383	476,634	541,183	728,340	749,778	746,827	711,952	641,352	580,984	621,820	615,763
W07L01	Wisc Lighting Rate 01	13,383	15,471	16,918	18,880	0	0	0	0	0	0	14,173	12,732	7,630
W07L05	Wisc Lighting Rate 05	964	1,023	1,370	1,547	0	0	0	0	0	0	1,193	1,184	607
W07U05	Wisc Pumping Rate 05	719	682	886	721	1,156	1,614	1,397	1,172	794	791	769	616	943
W07L36	Wisc Lighting Rate 36 (Tou)	16,202	16,579	16,158	16,703	0	0	0	0	0	0	15,998	16,629	8,189
W07L46	Wisc Lighting Rate 46	2,150	2,194	2,085	2,137	0	0	0	0	0	0	2,125	2,219	1,076
W07LRS	Wisc Res Area Lighting	683	954	874	1,026	0	0	0	0	0	0	718	688	412
W07LSC	Wisc Gen Sec & Gen Pri Area Lighting	4,280	5,357	5,645	6,437	0	0	0	0	0	0	4,243	4,145	2,509
	Total Wisconsin Lighting & Other	38,379	42,259	43,937	47,452	1,156	1,614	1,397	1,172	794	791	39,217	38,213	21,365
W07P28	Wisc Gen Pri Cp1 8KV Customers	41,676	41,631	40,465	38,772	51,266	51,380	44,200	44,486	46,252	53,274	40,011	39,960	44,448
W07P81	Wisc Gen Pri Cp3a <13KV	1,508	1,245	1,249	1,070	1,748	1,712	1,622	1,618	1,523	1,734	1,238	1,277	1,462
	Total Wisconsin GP Low Voltage	43,183	42,876	41,715	39,842	53,014	53,092	45,822	46,104	47,775	55,007	41,249	41,237	45,910
W07P27	Wisc Gen Pri Cp1 13KV Customers	178,723	174,380	168,187	159,909	239,572	244,531	243,874	245,913	249,316	253,562	177,460	175,793	209,268
W07P26	Wisc Gen Pri Cp1 26KV Customers	504,925	495,744	504,405	494,837	637,625	643,207	613,632	624,427	634,728	651,714	506,967	503,097	567,942
W07P25	Wisc Gen Pri Cp1 34KV Customers	95,588	93,561	92,536	92,313	107,976	108,570	113,179	110,236	107,644	106,428	88,818	88,554	100,450
W07P34	Wisc Gen Pri Cp1 26KV Charter	2,527	2,494	2,381	2,310	1,989	2,242	2,106	2,188	2,262	2,339	2,440	2,454	2,311
W07P33	Wisc Gen Pri Cp1 34KV-Stora Enso Kimberl	31,351	25,233	39,899	32,901	33,936	36,824	35,452	33,511	35,950	34,871	33,622	29,399	33,579
W07P21	Wisc Gen Pri Cp2m 13KV	2,236	2,075	2,306	3,904	4,594	4,258	4,542	4,589	4,255	2,248	3,740	2,159	3,409
W07P22	Wisc Gen Pri Cp2m 26KV	30,917	35,707	34,719	36,202	43,696	35,829	36,143	37,204	30,892	38,125	33,668	36,480	35,799
W07P20	Wisc Gen Pri Cp2m 26KV Charter	64,750	55,600	63,568	57,905	59,901	53,983	59,000	58,561	55,939	57,127	57,014	50,894	57,853
W07P29	Wisc Gen Pri Cp3 13KV	2,680	2,887	2,453	6,431	3,916	2,538	2,820	2,805	2,743	3,357	2,333	2,443	3,117
W07P30	Wisc Gen Pri Cp3 26KV	28,101	30,624	29,125	30,365	32,441	34,621	31,782	30,441	32,411	33,249	28,752	27,669	30,798
W07P40	Wisc Gen Pri Cp3 34KV	11,706	11,142	10,733	8,585	11,807	8,324	12,321	12,220	9,922	12,220	11,513	11,172	10,972
W07P82	Wisc Gen Pri Cp3a 13KV	508	508	480	397	531	485	418	539	490	542	445	471	485
W07P83	Wisc Gen Pri Cp3a 26KV	11,224	11,184	10,730	8,594	14,970	15,233	14,266	14,052	14,592	12,756	11,588	11,665	12,571
W07P84	Wisc Gen Pri Cp3a 34KV	12,498	10,460	11,754	8,239	15,326	13,960	13,972	14,222	12,747	13,795	11,038	12,326	12,528
W07P54	Wisc Gen Pri CpFN 34KV	4,067	4,192	4,308	4,163	5,529	5,413	5,127	5,436	5,309	5,519	3,872	4,547	4,790
	Total Wisconsin GP Medium Voltage	981,803	955,790	977,582	947,054	1,213,808	1,210,018	1,188,633	1,196,344	1,199,201	1,227,852	973,270	959,123	1,085,873
W07P38	Wisc Gen Pri Cp1 138KV	14,514	15,139	12,250	9,277	11,496	4,532	12,854	12,452	4,426	14,675	6,740	13,542	10,991
W07P39	Wisc Gen Pri CpFN 138KV	13,402	12,339	13,291	13,319	4,240	12,118	12,629	12,728	12,737	12,839	13,256	12,529	12,119
W07P32	Wisc Gen Pri Cp3 138KV Stora Enso Niagra	25,051	19,954	22,020	28,248	27,970	20,450	28,616	29,661	26,419	21,878	21,632	28,765	25,055
	Total Wisconsin GP High Voltage	52,968	47,433	47,560	50,844	43,706	37,101	54,099	54,841	43,582	49,392	41,628	54,837	48,166
	Total Wisconsin General Primary	1,077,954	1,046,099	1,066,857	1,037,740	1,310,528	1,300,211	1,288,554	1,297,289	1,290,558	1,332,252	1,056,147	1,055,197	1,179,949

Wisconsin Electric Power Company
2007 Class Load Analysis
Native System Peak
Generation Level

Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average
WZ7S44	Wisc Gen Sec Cg1 Flat	322,502	304,002	317,999	249,460	454,570	490,761	491,849	489,034	458,219	500,498	315,531	318,036	392,705
W07S42	Wisc Gen Sec Cg6 Small Tou	14,987	19,103	17,129	18,095	8,631	15,086	16,624	17,947	16,255	10,726	14,318	13,597	15,208
WZ7S34	Wisc Gen Sec Cg2 Flat Demand	175,988	179,987	153,374	153,954	250,127	255,109	244,376	235,617	232,630	281,637	184,221	178,048	210,422
WZ7S70	Wisc Gen Sec Cg3 Tou Demand	779,548	797,437	742,583	696,861	1,116,997	1,061,937	1,096,666	1,046,374	1,029,426	1,220,064	765,920	801,528	929,612
W07S71	Wisc Gen Sec Cg3c Curt	4,281	4,537	4,728	4,624	7,722	6,605	7,254	7,502	7,947	7,172	4,508	4,099	5,915
W07S80	Wisc Gen Sec Cg3a Coop	7,696	3,215	2,028	3,352	4,929	4,458	4,499	4,248	4,538	4,839	3,216	3,681	4,225
	Total Cg3, Cg3A and Cg3C	791,525	805,189	749,339	704,838	1,129,649	1,073,000	1,108,419	1,058,124	1,041,910	1,232,075	773,645	809,308	939,752
	Total Wisconsin General Secondary	1,305,001	1,308,280	1,237,840	1,126,346	1,842,977	1,833,957	1,861,267	1,800,722	1,749,014	2,024,937	1,287,715	1,318,989	1,558,087
WZ7R11	Wisc Res Flat Rg1 & Fg1	1,336,116	1,749,695	1,334,690	1,176,937	1,024,478	1,988,861	2,216,828	2,227,272	1,987,414	1,322,682	1,493,986	1,590,696	1,620,805
WZ7R17	Wisc Res Tou Rg2	71,878	100,330	75,410	77,442	33,024	65,346	67,880	76,896	64,027	41,005	68,785	69,436	67,622
	Total Wisconsin Residential	1,407,994	1,850,025	1,410,100	1,254,380	1,057,502	2,054,207	2,284,708	2,304,168	2,051,442	1,363,687	1,562,770	1,660,132	1,688,426
	Total Wisconsin Retail	3,829,329	4,246,663	3,758,733	3,465,918	4,212,164	5,189,988	5,435,926	5,403,351	5,091,808	4,721,667	3,945,849	4,072,532	4,447,827
	Total Wisconsin	4,363,149	4,813,859	4,281,420	3,952,155	4,768,870	5,931,465	6,198,020	6,161,495	5,816,245	5,376,923	4,537,426	4,706,036	5,075,589
	Total Native System from This Report	4,178,829	4,617,708	4,088,478	3,848,707	4,604,588	5,593,063	5,840,562	5,798,856	5,385,707	5,079,952	4,331,706	4,465,308	4,819,455
	Native System Peak	4,206,000	4,413,000	4,111,000	3,872,000	4,485,000	5,515,000	5,691,000	5,715,000	5,480,000	4,866,000	4,224,000	4,358,000	4,744,667
	Date of Native System Peak	1/17/2007	2/5/2007	3/6/2007	4/4/2007	5/30/2007	6/26/2007	7/31/2007	8/1/2007	9/5/2007	10/8/2007	11/29/2007	12/17/2007	
	Hour of Native System Peak	18:00	19:00	19:00	21:00	14:00	16:00	17:00	17:00	17:00	14:00	18:00	18:00	
	Variation from Native System Peak	-0.65%	4.64%	-0.55%	-0.60%	2.67%	1.42%	2.63%	1.47%	-1.72%	4.40%	2.55%	2.46%	1.58%

Wisconsin Electric Power Company
2007 Class Load Analysis
Energy Report (MWH)
Customer Level

9/11/09 14:34

Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
M07C00	Mich Company Use	164	152	147	130	114	112	110	104	104	107	133	185	1,561
	Total Michigan Company Use	164	152	147	130	114	112	110	104	104	107	133	185	1,561
M07F60	Mich Wholesale Rate 60 <69KV	4,824	4,971	4,065	3,081	5,431	4,317	5,651	5,868	4,921	4,059	4,815	5,363	57,365
	Total Michigan Wholesale	4,824	4,971	4,065	3,081	5,431	4,317	5,651	5,868	4,921	4,059	4,815	5,363	57,365
M07L88	Mich Lighting Rate 88	164	162	173	179	164	172	164	176	160	177	172	167	2,029
M07L89	Mich Lighting Rate 89	1	1	1	1	0	0	0	1	1	0	0	1	
M07U89	Mich Pumping Rate 89	1	1	1	0	0	0	1	1	0	1	0	1	8
M07LRS	Mich Residential Area Lighting	30	33	31	32	31	33	30	33	29	29	31	30	373
M07LSC	Mich Secondary Area Lighting	44	54	49	58	52	60	53	50	56	50	53	61	640
	Total Michigan Lighting & Other	240	251	255	270	248	266	248	260	246	257	257	261	3,059
M07P22	Mich Gen Pri CP1 Rate <69KV	1,710	1,482	1,589	1,551	1,733	1,817	1,923	2,004	1,782	1,802	1,579	1,748	20,720
M07P26	Mich Gen Pri Rate 26 Champion Firm	21,865	20,066	22,668	22,394	25,249	25,712	26,140	25,607	23,376	24,021	22,211	22,076	281,386
M07P46	Mich Gen Pri Rate 26 Champion Curt	923	885	903	653	1,046	888	886	988	578	1,084	940	980	10,752
M07P42	Mich Gen Pri Curt Rate <26KV	6,560	6,192	6,929	6,642	6,716	6,465	6,631	6,794	6,275	6,445	6,392	5,500	77,543
M07P27	Mich White Pine Mine 69 KV	3,879	3,624	4,068	3,732	4,099	4,113	4,082	4,450	4,044	4,232	3,741	4,081	48,144
M07P25	Mich Gen Pri Rate 25 Mines	169,519	148,597	175,647	186,479	186,611	185,004	173,482	174,730	158,461	173,153	161,237	180,940	2,073,861
	Total Michigan General Primary	204,455	180,847	211,804	221,451	225,454	224,000	213,145	214,573	194,515	210,737	196,101	215,324	2,512,406
MZ7S72	Mich Gen Sec Cg1	5,400	6,662	5,455		5,133	6,766	6,329	5,958	6,449	5,458	6,354	8,586	68,550
M07S40	Mich Gen Sec Cg5 Tou	1,189	1,058	746	884	922	1,101	939	866	907	817	1,137	1,358	11,926
M07S76	Mich Gen Sec Cg2 Tou	194	208	197	210	166	189	180	174	198	163	164	236	2,281
M07S74	Mich Gen Sec Cg3 Tou Demand	5,692	5,321	5,734	5,459	5,776	6,076	6,431	6,484	5,914	5,863	5,335	5,647	69,732
	Total Michigan General Secondary	12,476	13,250	12,132	6,554	11,997	14,132	13,879	13,482	13,469	12,300	12,991	15,827	152,489
MZ7R62	Mich Res Flat Rg1	15,332	16,070	13,174	12,397	11,142	13,147	12,634	13,740	11,765	11,132	14,303	17,418	162,253
M07R27	Mich Res TOU Rg2	801	854	665	587	473	466	428	470	428	443	650	844	7,112
	Total Michigan Residential	16,133	16,924	13,839	12,984	11,615	13,614	13,062	14,210	12,193	11,574	14,953	18,263	169,365
	Total Michigan Retail	233,304	211,272	238,030	241,259	249,314	252,012	240,334	242,525	220,424	234,868	224,302	249,675	2,837,319
	Total Michigan	238,292	216,394	242,241	244,469	254,859	256,441	246,095	248,497	225,449	239,035	229,250	255,224	2,896,244

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Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
W07C00	Wisc Company Use	6,432	6,512	6,123	5,781	6,319	5,978	5,754	5,854	5,660	5,726	5,760	6,254	72,153
	Total Wisconsin Company Use	6,432	6,512	6,123	5,781	6,319	5,978	5,754	5,854	5,660	5,726	5,760	6,254	72,153
W07F60	Wisc Wholesale 345KV (Geneva)													0
W07F63	Wisc Wholesale 34KV													0
	Total Wisc Wholesale (Excluding WPPI)	0	0	0	0	0	0	0	0	0	0	0	0	0
W07W01	Wisc WPPI Transmission	314,931	301,646	305,638	281,345	304,700	375,202	398,096	410,303	357,827	352,838	341,220	363,239	4,106,985
	Total WPPI Transmission	314,931	301,646	305,638	281,345	304,700	375,202	398,096	410,303	357,827	352,838	341,220	363,239	4,106,985
	Total Wisc Wholesale (Including WPPI)	314,931	301,646	305,638	281,345	304,700	375,202	398,096	410,303	357,827	352,838	341,220	363,239	4,106,985
W07L01	Wisc Lighting Rate 01	5,537	5,317	5,701	5,346	5,813	5,649	5,645	5,254	5,168	5,683	5,552	5,406	66,071
W07L05	Wisc Lighting Rate 05	399	352	462	438	495	532	668	562	494	473	467	503	5,843
W07U05	Wisc Pumping Rate 05	399	352	462	438	496	532	668	562	494	473	467	503	5,845
W07L36	Wisc Lighting Rate 36 (Tou)	6,703	5,698	5,445	4,729	4,686	4,030	4,224	4,365	4,798	5,891	6,267	7,061	63,897
W07L46	Wisc Lighting Rate 46	890	754	703	605	623	592	639	624	648	779	832	942	8,631
W07LRS	Wisc Res Area Lighting	282	328	295	291	282	320	310	330	282	294	281	292	3,587
W07LSC	Wisc Gen Sec & Gen Pri Area Lighting	1,771	1,841	1,902	1,823	1,903	1,875	2,077	1,987	1,768	1,934	1,662	1,760	22,302
	Total Wisconsin Lighting & Other	15,980	14,641	14,970	13,669	14,299	13,529	14,232	13,685	13,651	15,526	15,529	16,467	176,177
W07P28	Wisc Gen Pri Cp1 8KV Customers	25,564	23,669	25,249	23,812	25,643	26,649	26,619	24,823	23,695	25,487	23,383	24,069	298,661
W07P81	Wisc Gen Pri Cp3a <13KV	1,077	971	1,092	1,017	1,105	1,097	1,138	1,135	1,055	1,095	1,038	1,071	12,892
	Total Wisconsin GP Low Voltage	26,641	24,641	26,341	24,829	26,748	27,746	27,757	25,957	24,749	26,582	24,421	25,141	311,553
W07P27	Wisc Gen Pri Cp1 13KV Customers	114,110	106,161	115,169	111,209	122,739	129,845	136,414	146,040	129,840	127,379	111,645	110,500	1,461,052
W07P26	Wisc Gen Pri Cp1 26KV Customers	315,216	292,989	326,387	307,911	338,225	349,358	358,497	377,732	340,351	347,092	305,733	298,658	3,958,150
W07P25	Wisc Gen Pri Cp1 34KV Customers	62,565	55,991	61,037	59,980	64,022	63,972	67,751	70,585	61,090	62,354	55,441	53,860	738,648
W07P34	Wisc Gen Pri Cp1 26KV Charter	1,707	1,475	1,612	1,521	1,605	1,478	1,541	1,706	1,620	1,621	1,497	1,655	19,038
W07P33	Wisc Gen Pri Cp1 34KV-Stora Enso Kimberly	23,441	20,787	26,877	22,208	22,804	24,122	25,015	25,020	24,435	23,489	21,345	21,801	281,343
W07P21	Wisc Gen Pri Cp2m 13KV	1,957	1,669	1,889	1,929	2,266	2,629	2,482	2,142	1,708	2,013	1,657	1,663	24,004
W07P22	Wisc Gen Pri Cp2m 26KV	23,717	23,048	25,426	23,586	26,033	25,313	24,748	24,755	24,003	25,551	23,261	22,714	292,154
W07P20	Wisc Gen Pri Cp2m 26KV Charter	36,290	32,382	33,925	34,881	30,849	34,777	27,901	34,823	30,330	35,193	31,118	29,000	391,469
W07P29	Wisc Gen Pri Cp3 13KV	2,699	2,386	2,983	2,437	2,774	2,641	2,587	2,834	2,715	3,323	2,875	2,746	32,999
W07P30	Wisc Gen Pri Cp3 26KV	22,496	20,277	21,933	19,941	21,964	22,576	22,515	24,499	20,414	22,906	20,536	19,852	259,907
W07P40	Wisc Gen Pri Cp3 34KV	6,816	6,067	6,373	6,073	6,359	5,734	6,632	7,358	6,319	7,298	6,223	5,789	
W07P82	Wisc Gen Pri Cp3a 13KV	276	256	276	234	229	229	209	215	191	229	219	223	2,785
W07P83	Wisc Gen Pri Cp3a 26KV	7,255	6,606	7,098	6,893	7,673	8,183	8,366	8,392	8,026	7,757	7,154	7,015	90,416
W07P84	Wisc Gen Pri Cp3a 34KV	8,670	7,683	8,617	8,237	9,042	8,489	9,413	9,576	9,033	8,857	8,384	8,437	104,438
W07P54	Wisc Gen Pri CpFN 34KV	2,634	2,374	2,715	2,492	2,761	2,803	2,982	3,228	2,878	3,007	2,329	2,351	
	Total Wisconsin GP Medium Voltage	629,845	580,149	642,317	609,534	659,345	682,150	697,051	738,905	662,954	678,068	599,417	586,263	7,765,999
W07P38	Wisc Gen Pri Cp1 138KV	10,952	8,663	7,689	7,969	7,339	5,483	6,935	7,598	6,953	7,993	8,905	10,199	96,678
W07P39	Wisc Gen Pri CpFN 138KV	9,087	8,511	9,360	9,286	9,073	9,058	9,450	9,091	9,177	9,242	9,169	9,104	109,609
W07P32	Wisc Gen Pri Cp3 138KV Stora Enso Niagra	18,249	16,021	17,863	19,173	20,756	17,304	23,633	23,616	18,841	17,609	18,169	20,823	232,056
	Total Wisconsin GP High Voltage	38,288	33,196	34,912	36,427	37,169	31,846	40,018	40,304	34,971	34,844	36,243	40,126	438,344
	Total Wisconsin General Primary	694,774	637,986	703,570	670,790	723,262	741,742	764,826	805,166	722,674	739,495	660,081	651,530	8,515,896

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Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
WZ7S44	Wisc Gen Sec Cg1 Flat	173,678	175,399	172,875	157,187	169,124	181,063	194,022	200,466	170,779	174,878	162,707	176,103	2,108,282
W07S42	Wisc Gen Sec Cg6 Small Tou	8,206	8,186	7,739	6,665	6,602	6,971	7,470	7,719	6,553	6,746	6,821	7,847	87,525
WZ7S34	Wisc Gen Sec Cg2 Flat Demand	97,705	99,093	97,909	88,850	95,354	101,596	108,886	112,431	96,225	99,262	92,355	99,716	1,189,381
WZ7S70	Wisc Gen Sec Cg3 Tou Demand	459,125	439,741	445,648	422,392	456,720	482,280	514,159	532,835	468,774	483,907	421,827	435,652	5,563,061
W07S71	Wisc Gen Sec Cg3c Curt	2,906	2,658	3,019	3,131	3,723	3,778	3,836	4,134	4,073	3,708	3,037	2,764	40,767
W07S80	Wisc Gen Sec Cg3a Coop	3,041	1,690	2,495	1,756	2,036	2,071	2,047	2,239	2,010	2,128	1,653	1,602	24,769
	Total Cg3, Cg3A and Cg3C	465,072	444,089	451,162	427,279	462,479	488,128	520,042	539,209	474,858	489,743	426,517	440,018	5,628,596
	Total Wisconsin General Secondary	744,661	726,767	729,684	679,982	733,559	777,758	830,420	859,825	748,416	770,629	688,399	723,684	9,013,783
WZ7R11	Wisc Res Flat Rg1 & Fg1	647,912	702,376	579,856	542,581	544,353	708,898	754,875	822,559	619,766	577,630	609,400	738,637	7,848,842
WZ7R17	Wisc Res Tou Rg2	39,072	42,970	32,958	28,508	25,911	30,891	31,510	34,116	26,572	26,636	31,595	40,559	391,297
	Total Wisconsin Residential	686,983	745,345	612,814	571,089	570,263	739,789	786,385	856,676	646,338	604,266	640,995	779,196	8,240,139
	Total Wisconsin Retail	2,142,398	2,124,739	2,061,038	1,935,530	2,041,383	2,272,818	2,395,863	2,535,352	2,131,079	2,129,915	2,005,004	2,170,876	25,945,995
	Total Wisconsin	2,463,761	2,432,897	2,372,799	2,222,657	2,352,402	2,653,997	2,799,713	2,951,509	2,494,565	2,488,480	2,351,984	2,540,369	30,125,133
	Total Dem Obl from This Report	2,702,053	2,649,291	2,615,040	2,467,126	2,607,260	2,910,438	3,045,807	3,200,006	2,720,014	2,727,515	2,581,234	2,795,593	33,021,378
	Total DO less CU from This Report	2,695,457	2,642,627	2,608,770	2,461,214	2,600,828	2,904,348	3,039,944	3,194,048	2,714,250	2,721,681	2,575,342	2,789,153	32,947,663
	Booked Sales (less Resale)from Finance	2,506,327	2,493,882	2,463,532	2,333,796	2,439,672	2,679,020	2,795,470	2,968,618	2,508,847	2,555,956	2,400,597	2,594,492	30,740,209
	Variation from Finance Booked Sales	7.55%	5.96%	5.90%	5.46%	6.61%	8.41%	8.75%	7.59%	8.19%	6.48%	7.28%	7.50%	7.18%
	Total Retail from This Report	2,375,703	2,336,011	2,299,067	2,176,789	2,290,697	2,524,829	2,636,197	2,777,877	2,351,502	2,364,784	2,229,307	2,420,551	28,783,314
	Booked Retail Sales from Finance	2,359,153	2,339,022	2,303,350	2,181,614	2,290,532	2,522,886	2,639,143	2,790,326	2,349,899	2,378,357	2,225,418	2,420,877	28,800,577
	Variation from Retail Booked Sales	0.70%	-0.13%	-0.19%	-0.22%	0.01%	0.08%	-0.11%	-0.45%	0.07%	-0.57%	0.17%	-0.01%	-0.06%

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Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
M07C00	Mich Company Use	177	164	158	140	123	121	119	113	113	116	143	201	1,687
	Total Michigan Company Use	177	164	158	140	123	121	119	113	113	116	143	201	1,687
M07F60	Mich Wholesale Rate 60 <69KV	5,037	5,186	4,238	3,208	5,653	4,494	5,892	6,129	5,121	4,228	5,021	5,598	59,807
	Total Michigan Wholesale	5,037	5,186	4,238	3,208	5,653	4,494	5,892	6,129	5,121	4,228	5,021	5,598	59,807
M07L88	Mich Lighting Rate 88	178	176	187	194	178	186	178	191	173	191	187	182	2,201
M07L89	Mich Lighting Rate 89	1	1	1	1	1	1	0	1	1	1	1	2	10
M07U89	Mich Pumping Rate 89	1	1	1	0	0	1	1	1	0	1	0	1	9
M07LRS	Mich Residential Area Lighting	33	36	33	35	33	36	33	36	32	31	34	33	405
M07LSC	Mich Secondary Area Lighting	48	59	54	62	56	65	57	55	60	54	58	67	694
	Total Michigan Lighting & Other	260	273	276	292	268	288	270	283	266	278	280	284	3,319
M07P22	Mich Gen Pri CP1 Rate <69KV	1,785	1,547	1,657	1,615	1,804	1,892	2,006	2,093	1,854	1,877	1,646	1,825	21,601
M07P26	Mich Gen Pri Rate 26 Champion Firm	22,311	20,476	23,134	22,856	25,774	26,244	26,673	26,130	23,855	24,516	22,668	22,528	287,165
M07P46	Mich Gen Pri Rate 26 Champion Curt	942	903	922	667	1,068	906	904	1,008	589	1,106	960	1,000	10,973
M07P42	Mich Gen Pri Curt Rate <26KV	6,850	6,461	7,225	6,918	6,990	6,731	6,915	7,097	6,530	6,714	6,666	5,741	80,836
M07P27	Mich White Pine Mine 69 KV	3,958	3,698	4,152	3,809	4,184	4,198	4,165	4,541	4,127	4,319	3,818	4,164	49,133
M07P25	Mich Gen Pri Rate 25 Mines	172,981	151,630	179,255	190,324	190,492	188,827	177,016	178,300	161,709	176,718	164,556	184,649	2,116,457
	Total Michigan General Primary	208,827	184,715	216,343	226,188	230,312	228,797	217,677	219,169	198,665	215,250	200,313	219,908	2,566,164
MZ7S72	Mich Gen Sec Cg1	5,845	7,208	5,893	0	5,535	7,303	6,845	6,453	6,961	5,890	6,867	9,292	74,092
M07S40	Mich Gen Sec Cg5 Tou	1,287	1,145	806	954	994	1,188	1,016	938	979	882	1,229	1,470	12,888
M07S76	Mich Gen Sec Cg2 Tou	210	225	213	227	179	204	195	188	214	176	178	255	2,465
M07S74	Mich Gen Sec Cg3 Tou Demand	6,123	5,723	6,160	5,860	6,200	6,527	6,920	6,986	6,355	6,296	5,731	6,073	74,955
	Total Michigan General Secondary	13,465	14,300	13,072	7,041	12,908	15,223	14,977	14,565	14,509	13,244	14,005	17,091	164,400
MZ7R62	Mich Res Flat Rg1	16,737	17,540	14,345	13,472	12,104	14,302	13,784	15,011	12,797	12,105	15,590	19,022	176,810
M07R27	Mich Res TOU Rg2	879	936	727	640	516	509	469	516	468	483	712	926	7,781
	Total Michigan Residential	17,616	18,476	15,072	14,112	12,620	14,811	14,253	15,526	13,265	12,589	16,302	19,948	184,591
	Total Michigan Retail	240,168	217,764	244,764	247,634	256,109	259,118	247,177	249,543	226,705	241,361	230,900	257,231	2,918,474
	Total Michigan	245,382	223,114	249,161	250,982	261,884	263,733	253,188	255,785	231,938	245,705	236,065	263,030	2,979,967

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Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
W07C00	Wisc Company Use	6,991	7,075	6,646	6,269	6,852	6,490	6,263	6,385	6,146	6,210	6,249	6,795	78,372
	Total Wisconsin Company Use	6,991	7,075	6,646	6,269	6,852	6,490	6,263	6,385	6,146	6,210	6,249	6,795	78,372
W07F60	Wisc Wholesale 345KV (Geneva)	0	0	0	0	0	0	0	0	0	0	0	0	0
W07F63	Wisc Wholesale 34KV	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Wisc Wholesale (Excluding WPPI)	0	0	0	0	0	0	0	0	0	0	0	0	0
W07W01	Wisc WPPI Transmission	322,070	308,487	312,582	287,765	311,717	383,813	407,208	419,760	366,028	360,914	349,020	371,495	4,200,863
	Total WPPI Transmission	322,070	308,487	312,582	287,765	311,717	383,813	407,208	419,760	366,028	360,914	349,020	371,495	4,200,863
	Total Wisc Wholesale (Including WPPI)	322,070	308,487	312,582	287,765	311,717	383,813	407,208	419,760	366,028	360,914	349,020	371,495	4,200,863
W07L01	Wisc Lighting Rate 01	6,014	5,771	6,182	5,790	6,296	6,122	6,131	5,716	5,602	6,159	6,021	5,871	71,674
W07L05	Wisc Lighting Rate 05	433	382	501	474	537	576	725	612	535	512	507	546	6,339
W07U05	Wisc Pumping Rate 05	433	382	501	475	537	577	726	612	535	512	507	546	6,342
W07L36	Wisc Lighting Rate 36 (Tou)	7,281	6,184	5,904	5,122	5,076	4,367	4,588	4,749	5,201	6,384	6,797	7,668	69,320
W07L46	Wisc Lighting Rate 46	966	818	762	655	674	642	694	679	703	844	903	1,023	9,364
W07LRS	Wisc Res Area Lighting	307	356	319	315	306	346	337	359	305	319	305	317	3,891
W07LSC	Wisc Gen Sec & Gen Pri Area Lighting	1,923	1,998	2,063	1,974	2,062	2,032	2,255	2,162	1,917	2,095	1,802	1,911	24,195
	Total Wisconsin Lighting & Other	17,358	15,891	16,231	14,805	15,487	14,662	15,455	14,888	14,797	16,824	16,841	17,883	191,124
W07P28	Wisc Gen Pri Cp1 8KV Customers	26,569	24,597	26,230	24,738	26,647	27,702	27,697	25,845	24,639	26,489	24,301	25,015	310,468
W07P81	Wisc Gen Pri Cp3a <13KV	1,120	1,010	1,135	1,056	1,148	1,141	1,185	1,182	1,097	1,138	1,079	1,113	13,402
	Total Wisconsin GP Low Voltage	27,689	25,607	27,364	25,794	27,795	28,843	28,881	27,027	25,736	27,626	25,380	26,128	323,870
W07P27	Wisc Gen Pri Cp1 13KV Customers	118,327	110,069	119,367	115,267	127,247	134,665	141,614	151,707	134,702	132,078	115,761	114,576	1,515,382
W07P26	Wisc Gen Pri Cp1 26KV Customers	326,866	303,774	338,284	319,147	350,648	362,326	372,163	392,392	353,098	359,897	317,003	309,675	4,105,272
W07P25	Wisc Gen Pri Cp1 34KV Customers	64,877	58,052	63,262	62,169	66,374	66,346	70,334	73,324	63,378	64,654	57,485	55,847	766,102
W07P34	Wisc Gen Pri Cp1 26KV Charter	1,770	1,529	1,671	1,577	1,664	1,533	1,599	1,772	1,681	1,680	1,552	1,716	19,745
W07P33	Wisc Gen Pri Cp1 34KV-Stora Enso Kimberly	24,307	21,552	27,857	23,018	23,642	25,018	25,968	25,991	25,350	24,355	22,131	22,605	291,795
W07P21	Wisc Gen Pri Cp2m 13KV	2,029	1,730	1,958	2,000	2,349	2,727	2,576	2,225	1,772	2,087	1,718	1,725	24,896
W07P22	Wisc Gen Pri Cp2m 26KV	24,593	23,896	26,353	24,447	26,989	26,252	25,692	25,716	24,902	26,493	24,118	23,552	303,003
W07P20	Wisc Gen Pri Cp2m 26KV Charter	37,631	33,574	35,162	36,154	31,982	36,068	28,965	36,174	31,466	36,491	32,265	30,070	406,002
W07P29	Wisc Gen Pri Cp3 13KV	2,799	2,474	3,091	2,526	2,875	2,739	2,686	2,944	2,817	3,446	2,981	2,847	34,225
W07P30	Wisc Gen Pri Cp3 26KV	23,327	21,023	22,733	20,669	22,771	23,414	23,373	25,450	21,178	23,751	21,293	20,584	269,565
W07P40	Wisc Gen Pri Cp3 34KV	7,068	6,290	6,605	6,295	6,593	5,947	6,885	7,643	6,556	7,568	6,453	6,002	79,905
W07P82	Wisc Gen Pri Cp3a 13KV	286	265	286	243	237	238	217	223	199	237	227	231	2,888
W07P83	Wisc Gen Pri Cp3a 26KV	7,523	6,849	7,356	7,144	7,954	8,487	8,684	8,718	8,326	8,043	7,417	7,274	93,777
W07P84	Wisc Gen Pri Cp3a 34KV	8,990	7,966	8,931	8,538	9,374	8,804	9,772	9,947	9,371	9,184	8,693	8,748	108,319
W07P54	Wisc Gen Pri CpFN 34KV	2,731	2,461	2,814	2,583	2,863	2,907	3,095	3,353	2,986	3,118	2,415	2,437	33,764
	Total Wisconsin GP Medium Voltage	653,124	601,505	665,729	631,776	683,563	707,471	723,623	767,581	687,782	703,082	621,511	607,890	8,054,638
W07P38	Wisc Gen Pri Cp1 138KV	11,175	8,840	7,846	8,133	7,492	5,596	7,076	7,753	7,096	8,158	9,089	10,408	98,662
W07P39	Wisc Gen Pri CpFN 138KV	9,272	8,685	9,552	9,477	9,262	9,245	9,643	9,276	9,365	9,432	9,358	9,290	111,859
W07P32	Wisc Gen Pri Cp3 138KV Stora Enso Niagra	18,621	16,348	18,230	19,567	21,187	17,661	24,114	24,099	19,227	17,971	18,542	21,250	236,818
	Total Wisconsin GP High Voltage	39,069	33,873	35,628	37,178	37,941	32,503	40,833	41,128	35,687	35,561	36,989	40,949	447,339
	Total Wisconsin General Primary	719,882	660,984	728,722	694,748	749,299	768,817	793,337	835,736	749,205	766,270	683,881	674,967	8,825,848

Wisconsin Electric Power Company
2007 Class Load Analysis
Energy Report (MWH)
Generation Level

Class	Class Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
WZ7S44	Wisc Gen Sec Cg1 Flat	188,772	190,559	187,638	170,440	183,391	196,583	211,174	218,651	185,471	189,652	176,527	191,334	2,290,193
W07S42	Wisc Gen Sec Cg6 Small Tou	8,919	8,893	8,400	7,227	7,159	7,568	8,130	8,420	7,117	7,316	7,400	8,526	95,075
WZ7S34	Wisc Gen Sec Cg2 Flat Demand	106,226	107,699	106,330	96,416	103,487	110,379	118,554	122,654	104,599	107,739	100,252	108,398	1,292,732
WZ7S70	Wisc Gen Sec Cg3 Tou Demand	496,002	474,947	481,117	455,727	492,842	520,887	556,305	577,497	506,632	522,262	455,228	470,643	6,010,088
W07S71	Wisc Gen Sec Cg3c Curt	3,140	2,871	3,259	3,378	4,018	4,080	4,150	4,481	4,402	4,002	3,277	2,986	44,044
W07S80	Wisc Gen Sec Cg3a Coop	3,286	1,825	2,693	1,895	2,197	2,236	2,215	2,427	2,173	2,296	1,784	1,731	26,758
	Total Cg3, Cg3A and Cg3C	502,427	479,643	487,070	461,000	499,057	527,203	562,670	584,405	513,207	528,560	460,288	475,360	6,080,890
	Total Wisconsin General Secondary	806,344	786,794	789,438	735,083	793,094	841,734	900,528	934,130	810,395	833,266	744,468	783,618	9,758,891
WZ7R11	Wisc Res Flat Rg1 & Fg1	705,368	764,115	630,182	588,901	590,672	770,444	822,988	899,205	673,500	626,925	662,040	803,947	8,538,287
WZ7R17	Wisc Res Tou Rg2	42,934	47,172	36,126	31,190	28,335	33,841	34,653	37,641	29,115	29,146	34,616	44,553	429,322
	Total Wisconsin Residential	748,302	811,286	666,308	620,091	619,007	804,285	857,640	936,847	702,615	656,071	696,656	848,500	8,967,608
	Total Wisconsin Retail	2,291,886	2,274,956	2,200,699	2,064,727	2,176,887	2,429,498	2,566,960	2,721,601	2,277,012	2,272,431	2,141,845	2,324,968	27,743,471
	Total Wisconsin	2,620,948	2,590,518	2,519,927	2,358,761	2,495,456	2,819,802	2,980,432	3,147,746	2,649,187	2,639,556	2,497,114	2,703,259	32,022,705
	Total System Demand Obligation	2,866,329	2,813,633	2,769,088	2,609,743	2,757,340	3,083,535	3,233,620	3,403,531	2,881,125	2,885,261	2,733,179	2,966,289	35,002,673
	Total Native System from This Report	2,544,259	2,505,145	2,456,506	2,321,978	2,445,623	2,699,722	2,826,411	2,983,771	2,515,096	2,524,347	2,384,159	2,594,794	30,801,810
	Native System	2,498,413	2,297,391	2,457,903	2,220,777	2,395,716	2,505,771	2,912,946	2,846,098	2,356,491	2,379,582	2,304,905	2,523,068	29,699,061
	Variation from Native System	45,846	207,754	-1,397	101,201	49,907	193,951	-86,535	137,673	158,605	144,765	79,254	71,726	1,102,749
	Variation from Native System	1.84%	9.04%	-0.06%	4.56%	2.08%	7.74%	-2.97%	4.84%	6.73%	6.08%	3.44%	2.84%	3.71%

WISCONSIN ELECTRIC POWER COMPANY

CASE U-15981

TILDEN MINING CO., L.C. AND EMPIRE IRON MINING PARTNERSHIP
First Set of Discovery Requests

TM-WE-03: Please provide workpapers that identify each class's monthly peak demand, each class's demand coincident with the monthly system peak demand, and each class's monthly energy consumption.

Response: The monthly reports for non-coincident peaks (NCP), coincident peaks (CP), customer-level energy (CLE) and generation-level energy (GLE) for years 2003 through 2007, which were used to develop allocators in work papers WPA6F1-2 and WPA13F1-2 are included in "Response to TM-WE-02 &03.xls".

Answered by: Eric Rogers
Date: September 11, 2009

Wisconsin Electric Power Company
Cost of Service Study Results
Company Study with all Mines Adjustments

Line No.	Rate Class	Rate Base	Projected Sales Revenues	Adjust NOI	ROR	Indexed ROR	Income @ 7.66%	Income Deficiency (Excess)	Deficiency (Excess)	% Revenue Increase
		(a)	(b)	(c)	(d) = (c)/(a)	(e)	(f) = 7.66% x (a)	(g) = (f) - (c)	(h) = (g) x GRCF	(i) = (h) / (b)
1	Small Cust.	96,180,016	30,663,030	(627,173)	-0.65%	59.4	7,367,389	7,994,562	13,349,321	43.54%
2	Med. Cust.	1	0.10	0	6.01%	-547.6	0	0	0	27.56%
3	Large Cust.	57,297,440	27,527,644	(481,435)	-0.84%	76.6	4,388,984	4,870,419	8,132,626	29.54%
4	Mines	134,989,535	67,477,017	(1,928,700)	-1.43%	130.2	10,340,198	12,268,898	20,486,606	30.36%
5	Lighting & Other	2,051,302	569,167	58,459	2.85%	-259.7	157,130	98,670	164,760	28.95%
6	Juris. w/o S.C.	290,518,293	126,236,858	(2,978,849)	-1.03%	93.4	22,253,701	25,232,550	42,133,314	33.38%
7	Special Contracts	3,006,730	1,194,162	(242,428)	-8.06%	734.7	230,315	472,744	789,388	66.10%
	Total	**293,525,022**	**127,431,020**	**(3,221,277)**	**-1.10%**	100.0	**22,484,017**	**25,705,294**	**42,922,701**	**33.68%**
					Target ROR	7.66%		GRCF	1.6698	

Wisconsin Electric Power Company
Adjustments/Corrections to Staff's Second Revised WEPCo
Michigan Retail Revenue Deficiency
Projected Test Year Ending December 31, 2010

Line	Description		Total Adjustments
			(1)
1	Staff Identified Michigan Retail Revenue Deficiency [1]	$	28,098,404
	Adjustments/Corrections to Staff's Filed Position:		
2	Jurisdictional Allocation		8,312,541
3	ERG Unit 2 Lease Prepayment Removal		419,478
4	Working Capital		124,107
5	O&M Expense		5,654,064
6	Rate of Return		1,480,815
7	Total Adjustments/Corrections	$	15,991,005
8	Staff Adjusted Revenue Deficiency	$	12,107,399
	Additional Adjustments:		
9	1-Month Delay of ERGS Unit 1		1,273,196
10	ERGS Unit 1 Lease Expense Term Adjustment [2]		2,095,480
11	ERGS Unit 1 Lease Deferral Adjustment [2]		1,514,207
12	PWGS Lease Expense Term Adjustment		939,803
13	PWGS Lease Deferral Adjustment		515,509
14	Mine Increased Sales Levels		895,953
15	Non-Mine Increased Sales Levels		2,418,228
16	Depreciation Rate Adjustment		1,418,536
17	Michigan Renewable Portfolio Standard		814,866
18	Wisconsin Renewable Portfolio Standard		5,325,336
19	Wisconsin Energy Performance Unit Plan		388,081
20	Wisconsin Pollution Discharge Settlement		294,939
21	Total Additional Adjustments	$	17,894,134
22	Staff Adjusted Michigan Retail Revenue Deficiency	$	(5,786,735)

Source/Notes:

[1] Case No. U-15981, Exhibit S-1, Schedule A1-R2

[2] Adjustment for remaining 11 months of 2010

Wisconsin Electric Power Company

Jurisdictional Adjustment to Staff's Second Revised Cost of Service Study

Projected Test Year Ending December 31, 2010

Line	Description		Total
			(1)
	Impact of Jurisdictional Adjustment to Staff's Second Revised Cost of Service Study:		
1	Staff Revised Michigan Revenue Deficiency [1]	$	28,763,734
2	Updated Staff Proposed Revenue Deficiency [2] [3]		20,327,060
3	Total Michigan Jurisdictional Adjustment	$	8,436,674
4	Michigan Retail w/o Spec. Contracts Allocation		98.5286%
5	Total Michigan Retail Revenue Adjustment	$	8,312,541

Source/Notes:

[1] Case No. U-15981, Exhibit S-6 Revised 2, Schedule F1 (CEP-1), Witness: C.E. Putnam.

[2] Updated Staff's Second Revised model with WEPCo's proposed jurisdictional factors.

[3] Workpaper MIN-130R (MPG-121R)

	A	B	C	D	E	F	G	H	I
14	CompanyName		GROUP:	MI TY2010		WISCONSIN ELECTRIC POWER COMPANY			
15			SCENARIO:	Part I		REVENUE REQUIREMENTS AND RATE BASE			
16	PeriodEnding					12 MONTHS ENDING			
17						December 2010			
18									
19									
20						TOTAL	WISCONSIN	MICHIGAN	FERC
21						ELECTRIC UTILITY	JURISDICTION	JURISDICTION	JURISDICTION
22			DEVELOPMENT OF ALLOCATED COST OF SERVICE						
23	PS_PROD		Production Plant			2,985,039,000	2,562,480,620	215,409,974	207,148,406
24	PS_PROD.ENR		Not Used			0	0	0	0
25	PS_DIST.SUBSTA.DA		Distribution Substations			415,949,705	397,859,385	14,630,706	3,459,613
26	PS_DIST.OVERHD.DA		Distribution Overhead			980,102,228	927,659,592	50,599,559	1,843,077
27	PS_DIST.UNDRGD.DA		Distribution Underground			1,253,727,775	1,220,411,681	32,958,926	357,168
28	PS_DIST.TRANSF.CAPACITORS		Distribution Transformers Capacitors			12,373,121	12,255,221	108,773	9,128
29	PS_DIST.TRANSF.LINES.TRANS		Distribution Transformers Line Transformers			487,762,274	472,371,562	15,390,712	0
30	PS_DIST.TRANSF.REGULATORS		Distribution Transformers Regulators			8,209,774	7,921,335	280,562	7,878
31	PS_DIST.SERVCS		Distribution Services			221,883,226	211,759,982	10,123,244	0
32	PS_DIST.METERS		Distribution Meters			147,281,971	143,832,382	3,171,427	278,162
33	PS_DIST.INCUSTP		Distribution Installations on Customer Premises			9,039,445	8,703,684	335,761	0
34	PS_DIST.LEASED		Distribution Leased Property			10,195	10,195	0	0
35	PS_DIST.STLIGHT		Distribution Street Lighting			23,088,284	22,446,994	641,291	0
36	PS_GENERAL		General Plant			349,146,166	311,560,996	21,985,466	15,599,704
37		1	ELECTRIC PLANT IN SERVICE			6,893,613,166	6,299,273,630	365,636,400	228,703,136
38	PD_NUCLEAR.DECOM		Nuclear Decommissioning			0	0	0	0
39	PD_PROD		Production			1,362,401,000	1,169,541,222	98,315,219	94,544,559
40	PD_DIST.SUBSTA		Distribution Substations			196,696,472	188,141,827	6,918,645	1,636,000
41	PD_DIST.OVERHD		Distribution Overhead Lines			379,472,730	359,168,164	19,590,969	713,596
42	PD_DIST.UNDRGD		Distribution Underground Lines			372,628,957	362,726,855	9,795,947	106,156
43	PD_DIST.TRANSF		Distribution Transformers			192,621,272	186,635,480	5,979,348	6,444
44	PD_DIST.SERVCS		Distribution Services			88,280,415	84,252,692	4,027,723	0
45	PD_DIST.METERS		Distribution Meters			30,472,713	29,758,991	656,170	57,552
46	PD_DIST.INCUSTP		Distribution Installations on Customer Premises			-3,273,575	-3,151,981	-121,594	0
47	PD_DIST.LEASED		Distribution Leased Property			13,677	13,677	0	0
48	PD_DIST.STLIGHT		Distribution Street Lighting			6,745,339	6,557,983	187,356	0
49	PD_GENERAL		General Plant			166,355,139	148,447,206	10,475,255	7,432,678
50		2	LESS: ACCUM. PROV. FOR DEPR			2,792,414,139	2,532,092,115	155,825,039	104,496,985
51	PFU_PROD		Plant Held for Future Use - Production			3,153,301	2,706,924	227,552	218,825
52	PFU_TRAN		Plant Held for Future Use - Transmission			0	0	0	0
53	PFU_DIST		Plant Held for Future Use - Distribution			2,217,294	2,133,699	79,886	3,710
54	PFU_GENERAL		Plant Held for Future Use - General			195,400	174,365	12,304	8,730
55		3	PLANT HELD FOR FUTURE USE			5,565,995	5,014,988	319,742	231,265
56	CWIP_PROD		Construction Work in Progress - Production			510,110,138	437,899,586	36,811,181	35,399,371
57	CWIP_TRAN		Construction Work in Progress - Transmission			0	0	0	0
58	CWIP_DIST		Construction Work in Progress - Distribution			17,425,069	16,768,117	627,800	29,153
59	CWIP_GENERAL		Construction Work in Progress - General			33,023,552	29,468,606	2,079,468	1,475,478
60		4	CONSTRUCTION WORK IN PROGRESS			560,558,759	484,136,309	39,518,449	36,904,002
61		5	TOTAL UTILITY PLANT		-1	4,667,323,781	4,256,332,811	249,649,552	161,341,418
62									

	A	B	C	D	E	F	G	H	I
14	CompanyName		GROUP:	MI TY2010	WISCONSIN ELECTRIC POWER COMPANY				
15			SCENARIO:	Part I	REVENUE REQUIREMENTS AND RATE BASE				
16	PeriodEnding					12 MONTHS ENDING			
17						December 2010			
18									
19									
20						TOTAL	WISCONSIN	MICHIGAN	FERC
21						ELECTRIC UTILITY	JURISDICTION	JURISDICTION	JURISDICTION
22			DEVELOPMENT OF ALLOCATED COST OF SERVICE						
63		x	ADDITIONS						
64	MISC_NUCLEAR.FUEL.INVENTORY		Nuclear Fuel Working Capital			0	0	0	0
65		6	NUCLEAR FUEL INVENTORY			0	0	0	0
66	MISC_NUCLEAR.DECOM.FUND		Nuclear Decommissioning Fund			0	0	0	0
67		8	NUCLEAR DECOM FUND			0	0	0	0
68	MISC_CASH		Cash		1	118,911,566	105,209,220	6,696,337	7,006,009
69	MS_PROD		Materials and Supplies for Production			62,977,956	54,062,876	4,544,691	4,370,390
70	MS_TRANS		Conservation			0	0	0	0
71	MS_DIST		Materials and Supplies for Distribution			8,768,201	8,437,626	315,905	14,669
72	MS_GEN		Materials and Supplies for General		0	3,127,188	2,790,550	196,917	139,721
73	MISC_PREPAYMENTS		Prepayments		0	110,783,656	104,854,014	0	5,929,642
74	MISC_FOSSIL.FUEL.INVENTORY		Fossil Fuel Working Capital		0	168,014,540	138,808,774	15,480,277	13,725,489
75	MISC_ACCRUED.REVENUE		Accrued Revenue		0	458,052,163	405,270,173	25,794,561	26,987,430
76	MISC_OTHER.CURRENT.ASSETS		Other Current Assets		0	374,348,800	293,225,751	61,596,793	19,526,256
77	MISC_DEFERRED.CHARGES		Deferred Charges		0	26,580,217	23,517,341	1,496,827	1,566,048
78		8A	WORKING CAPITAL ASSETS			1,331,564,287	1,136,176,325	116,122,308	79,265,655
79	MISC_ACCRUED.FEDERAL.TAXES		Accrued Federal Taxes			0	0	0	0
80	MISC_ACCRUED.MICH.TAXES		Accrued Michigan Taxes			0	0	0	0
81	MISC_ACCOUNTS.PAYABLE		Accounts Payable		0	281,799,423	257,503,812	14,946,607	9,349,003
82	MISC_ACCRUED.INTEREST		Accrued Interest		0	124,976,398	114,201,437	6,628,733	4,146,228
83	MISC_OTHER.LIABILITIES.PLANT.RELA		Other Liabilities - Plant Related		0	320,274,999	292,662,180	16,987,347	10,625,472
84	MISC_CUST.ADV		Customer Advances		0	95,828,369	92,149,432	3,584,549	94,388
85	MISC_LONG.TERM.DEBT.PREMIUM		Long-Term Debt Premium			0	0	0	0
86	MISC_OTHER.LIABILITIES.REVENUE.RE		Other Liabilities - Revenue Related		-1	176,019,575	155,736,593	9,912,294	10,370,688
87		8B	WORKING CAPITAL LIABILITIES		-1	998,898,763	912,253,454	52,059,529	34,585,779
88									
89		9	TOTAL RATE BASE		-2	4,999,989,305	4,480,255,681	313,712,331	206,021,293
90									
91		x	DEVELOPMENT OF RETURN						
92	RV_ELEC		Billed Electric Revenue			2,874,924,881	2,543,643,275	161,897,334	169,384,273
93		10	TOTAL SALES REVENUE			2,874,924,881	2,543,643,275	161,897,334	169,384,273
94	RV_OPSALD		Opportunity Sales - Demand Related			7,108,200	6,101,972	512,950	493,277
95	RV_OPSALO-ONPEAK		Opportunity Sales - Energy Related - On Peak			116,763,852	97,712,349	9,480,063	9,571,440
96	RV_OPSALO-OFFPEAK		Opportunity Sales - Energy Related - Off Peak			102,273,664	83,761,898	10,176,082	8,335,683
97		11	OPPORTUNITY SALES			226,145,716	187,576,219	20,169,095	18,400,401

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14	CompanyName		GROUP:	MI TY2010		WISCONSIN ELECTRIC POWER COMPANY			
15			SCENARIO:	Part I		REVENUE REQUIREMENTS AND RATE BASE			
16	PeriodEnding					12 MONTHS ENDING			
17						December 2010			
18									
19									
20						TOTAL	WISCONSIN	MICHIGAN	FERC
21						ELECTRIC UTILITY	JURISDICTION	JURISDICTION	JURISDICTION
22			DEVELOPMENT OF ALLOCATED COST OF SERVICE						
98	RV_FORDIS		Forfeited Discounts			6,530,784	6,385,712	145,072	0
99	RV_MISC.SERV		Miscellaneous Services			2,138,673	2,054,886	83,787	0
100	RV_RENTAL.POLES		Pole Rental			5,000,956	4,820,223	180,733	0
101	RV_RENTAL.OTHER		Other Rental			2,558,429	2,283,017	161,102	114,310
102	RV_MISC		Miscellaneous			8,822,415	7,335,834	790,544	696,037
103	RV_MISC1		Not Used			0	0	0	0
104	RV_MISC2		Nox Revenue			-5,740,263	-5,740,263	0	0
105	RV_MISC3		Other Miscellaneous			0	0	0	0
106	RV_WISC.SALES.TAX.DISCOUNT		Wis Sales Tax Discount			316,172	316,172	0	0
107	RV_MISCTRANS		Miscellaneous Production Related Revenue			7,103,529	5,868,731	654,495	580,303
108		12	TOTAL OTHER OPERATING			26,730,695	23,324,312	2,015,732	1,390,650
109		13	TOTAL OPERATING REVENUES		0	3,127,801,292	2,754,543,806	184,082,161	189,175,324
110									
111	OM_FUEL-ONPEAK		On Peak Fuel			384,980,146	322,163,644	31,257,606	31,558,896
112	OM_FUEL-OFFPEAK		Off Peak Fuel			434,188,402	355,596,703	43,202,557	35,389,142
113	OM_PROD.DEM		Production Expenses - Demand Related			182,440,617	156,559,714	13,335,102	12,545,801
114	OM_PROD.ENR		Production Expenses - Energy Related			102,232,090	86,143,177	8,543,941	7,544,972
115	OM_PROD.SE		Production Expenses - Supervision & Engineering			31,188,769	26,515,927	2,410,244	2,262,597
116	OM_PROD.PBNP.PPA.DEM		Point Beach Nuclear Plant PPA - Demand			231,138,301	198,418,653	16,679,680	16,039,968
117	OM_PROD.PBNP.PPA.ONP		Point Beach Nuclear Plant PPA - On-Peak Energy			61,064,947	51,101,427	4,957,866	5,005,655
118	OM_PROD.PBNP.PPA.OFF		Point Beach Nuclear Plant PPA - Off-Peak Energy			63,394,138	51,919,655	6,307,626	5,166,857
119	OM_PTF		Power the Future Costs			291,357,699	250,113,468	21,025,305	20,218,926
120	OM_PROD.NONFIRM.CREDIT		Non-Firm Credit			-32,730,038	-13,044,312	-19,685,726	0
121	OM_PROD.NONFIRM.ADJ		Non-Firm Load Cost			32,730,038	28,096,815	2,361,904	2,271,319
122	OM_TRANS		Transmission - MISO/ATC Charges			294,880,385	266,794,147	20,775,801	7,310,438
123	OM_TRANS.PTP		Transmission - Point to Point			679,643	583,434	49,045	47,164
124	OM_DIST.SUBSTA1		Distribution Substations			7,818,394	7,469,898	281,966	66,530
125	OM_DIST.OVERHD1		Distribution Overhead Lines			50,114,366	47,053,112	2,960,486	100,768
126	OM_DIST.UNDERGND1		Distribution Underground Lines			13,473,320	12,670,099	799,484	3,737
127	OM_DIST.TRAN1		Distribution Transformers			359,798	341,808	17,990	0
128	OM_DIST.MET1		Distribution Meters			5,750,251	5,490,079	247,361	12,812
129	OM_DIST.CUSTINST1		Distribution Installations on Customer Premises			56,951	56,951	0	0
130	OM_DIST.SUPENG1		Distribution Supervision & Engineering			4,023,394	3,904,074	119,320	0
131	OM_DIST.STRLIT1		Distribution Street Lighting			2,390,986	2,317,783	73,202	0
132	OM_DIST.OTH1		Distribution Other			9,877,635	9,616,901	260,734	0
133	OM_DIST.DISP1		Distribution Dispatching			6,218,975	5,577,413	261,703	379,860
134	OM_CUSTACCT1		Customer Accounting			28,584,023	27,781,277	801,942	804
135	OM_UNCOLLECTIBLE		Uncollectibles (FERC Acct 904)			23,658,000	23,474,367	183,633	0
136	OM_WISC.CONSERV.ESC		Wisconsin Conservation Escrow			41,132,280	41,132,280	0	0
137	OM_OTHER.CONSERV		Customer Service Expenses			11,796,046	11,542,697	253,024	325
138	OM_SALES.EXP		Sales Expenses			281,023	268,697	12,325	0

	A	B	C	D	E	F	G	H	I
14	CompanyName		GROUP:	MI TY2010		WISCONSIN ELECTRIC POWER COMPANY			
15			SCENARIO:	Part I		REVENUE REQUIREMENTS AND RATE BASE			
16	PeriodEnding					12 MONTHS ENDING			
17						December 2010			
18									
19									
20						TOTAL	WISCONSIN	MICHIGAN	FERC
21						ELECTRIC UTILITY	JURISDICTION	JURISDICTION	JURISDICTION
22			DEVELOPMENT OF ALLOCATED COST OF SERVICE						
139	OM_MINES.DA		Direct Assignment to Mines			0	0	0	0
140	OM_OTHAG1		Property Insurance			-642,323	-590,010	-32,860	-19,453
141	OM_PSCW		Regulatory Expenses for WI, MI and FERC			2,840,684	2,396,205	267,875	176,604
142	OM_OTHAG2		All Other A&G			198,001,083	176,905,055	12,340,133	8,755,895
143		14	OPERATION AND MAINTENANCE		0	2,483,280,022	2,158,371,136	170,069,269	154,839,618
144	DE_PROD		Production			99,718,000	85,602,045	7,195,970	6,919,985
145	DE_TRAN		Transmission			0	0	0	0
146	DE_DIST.SUBSTA		Distribution Substations			11,610,466	11,105,508	408,389	96,569
147	DE_DIST.OVERHD		Distribution Overhead Lines			28,724,914	27,187,921	1,482,976	54,017
148	DE_DIST.UNDRGD		Distribution Underground Lines			37,324,575	36,332,726	981,216	10,633
149	DE_DIST.TRANSF		Distribution Transformers			14,898,621	14,435,640	462,483	498
150	DE_DIST.SERVCS		Distribution Services			6,502,971	6,206,278	296,693	0
151	DE_DIST.METERS		Distribution Meters			4,316,552	4,215,451	92,948	8,152
152	DE_DIST.INCUSTP		Distribution Installations on Customer Premises			264,929	255,088	9,841	0
153	DE_DIST.LEASED		Distribution Leased Property			299	299	0	0
154	DE_DIST.STLIGHT		Distribution Street Lighting			676,673	657,878	18,795	0
155	DE_GENERAL		General Plant			31,716,852	28,302,571	1,997,186	1,417,096
156	DE_NUCLEAR.DECOM		Nuclear Decommissioning			0	0	0	0
157	DE_CONSERVATION		Conservation			0	0	0	0
158		15	DEPRECIATION EXPENSE		0	235,754,852	214,301,405	12,946,497	8,506,950
159	DTX_FED.DRR.PROD		Depreciation Removal & Repair - FED Production			29,058,109	24,944,680	2,096,926	2,016,503
160	DTX_FED.DRR.TRAN		Depreciation Removal & Repair - FED Transmission			0	0	0	0
161	DTX_FED.DRR.DIST		Depreciation Removal & Repair - FED Distribution			34,960,208	33,642,154	1,259,565	58,489
162	DTX_FED.DRR.GEN		Depreciation Removal & Repair - FED General			1,306,808	1,166,132	82,289	58,388
163			FED DEPRECIATION, REMOVAL & REPAIR			65,325,125	59,752,965	3,438,780	2,133,380
164	DTX_OTH.PROD		Other Deductions - Production			-22,524,756	-19,336,180	-1,625,459	-1,563,118
165	DTX_OTH.TRAN		Other Deductions - Transmission			0	0	0	0
166	DTX_OTH.DIST		Other Deductions - Distribution			-54,804,725	-52,738,501	-1,974,534	-91,690
167	DTX_OTH.GEN		Other Deductions - General			-59,954,935	-53,500,858	-3,775,316	-2,678,761
168	DTX_POL.ABATE		Pollution Abatement Equipment			0	0	0	0
169	DTX_DECOM		Decommissioning			0	0	0	0
170	DTX_CIAC		Contributions in Aid of Construction			-9,806,000	-9,430,604	-365,836	-9,560
171	DTX_CONSERVATION		Conservation			1,755,538	1,755,538	0	0
172			TOTAL OTHER DEFERRED TAXES			-145,334,878	-133,250,605	-7,741,145	-4,343,129
173			NET DEFERRABLE ITEMS			-80,009,753	-73,497,640	-4,302,365	-2,209,748
174			DEFERRED TAX @	35.0000%		-28,003,414	-25,724,174	-1,505,828	-773,412

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15			SCENARIO:	Part I		REVENUE REQUIREMENTS AND RATE BASE			
16	PeriodEnding					12 MONTHS ENDING			
17						December 2010			
18									
19									
20						TOTAL	WISCONSIN	MICHIGAN	FERC
21						ELECTRIC UTILITY	JURISDICTION	JURISDICTION	JURISDICTION
22			DEVELOPMENT OF ALLOCATED COST OF SERVICE						
175	DTX_FED.ADJ.PROD		Adjustments - FED Production			-8,372,742	-7,187,507	-604,204	-581,031
176	DTX_FED.ADJ.TRAN		Adjustments - FED Transmission			0	0	0	0
177	DTX_FED.ADJ.DIST		Adjustments - FED Distribution			-224,353	-215,894	-8,083	-375
178	DTX_FED.ADJ.GEN		Adjustments - FED General			-8,386	-7,484	-528	-375
179	DTX_FED.ADJ.CONS		Adjustments - FED Conservation			0	0	0	0
180			TOTAL FEDERAL DEFERRED		0	-36,608,895	-33,135,059	-2,118,643	-1,355,193
181	DTX_WI.DRR.PROD		Depreciation Removal & Repair - WI Production			35,568,706	30,533,645	2,566,752	2,468,310
182	DTX_WI.DRR.TRAN		Depreciation Removal & Repair - WI Transmission			0	0	0	0
183	DTX_WI.DRR.DIST		Depreciation Removal & Repair - WI Distribution			42,355,987	40,759,101	1,526,024	70,863
184	DTX_WI.DRR.GEN		Depreciation Removal & Repair - WI General			1,583,262	1,412,826	99,697	70,739
185			WIS DEPRECIATION, REMOVAL & REPAIR			79,507,955	72,705,571	4,192,473	2,609,912
186			TOTAL OTHER DEFERRED TAXES			-145,334,878	-133,250,605	-7,741,145	-4,343,129
187			NET DEFERRABLE ITEMS			-65,826,923	-60,545,034	-3,548,672	-1,733,217
188			DEFERRED TAX @	4.9074%		-3,230,374	-2,971,172	-174,147	-85,055
189	DTX_WI.ADJ.PROD		Adjustments - WI Production			515,915	442,882	37,230	35,802
190	DTX_WI.ADJ.TRAN		Adjustments - WI Transmission			0	0	0	0
191	DTX_WI.ADJ.DIST		Adjustments - WI Distribution			614,362	591,200	22,135	1,028
192	DTX_WI.ADJ.GEN		Adjustments - WI General			22,965	20,493	1,446	1,026
193	DTX_WI.ADJ.CONS		Michigan Deferred State Income Taxes			84,196	75,444	5,283	3,469
194			TOTAL STATE DEFERRED		1	-1,992,937	-1,841,153	-108,053	-43,730
195		16	DEFERRED TAXES		0	-38,601,831	-34,976,212	-2,226,696	-1,398,923
196	OT_CARLINE&USE		Other Taxes - Carline and Use Tax			109,534	90,494	10,092	8,948
197	OT_PROPERTY		Other Taxes - Property - Production Plant			7,860,880	6,748,104	567,266	545,510
198	OT_PROPERTY_MI_DIST		Other Taxes - Property - Michigan Distribution Plant			2,036,924	0	2,036,924	0
199	OT_PAYROLL		Other Taxes - Payroll			18,330,254	16,357,024	1,154,242	818,988
200	OT_MICH.ASSMNT&SNG		Not Used			0	0	0	0
201	OT_INSURANCE		Other Taxes - Insurance			217,999	199,204	11,563	7,232
202	OT_PSCW.ASSESSMENT		Other Taxes - PSCW Assessment			2,603,109	2,603,109	0	0
203	OT_WILIC		Other Taxes - Wisconsin License Fee			81,610,189	77,242,042	0	4,368,146
204	OT_MISC		Other Taxes - MI Assessment			303,750	0	303,750	0
205	OT_MISC1		Other Taxes - Miscellaneous			0	0	0	0
206		17	TAXES OTHER THAN INCOME		0	113,072,639	103,239,977	4,083,837	5,748,825
207		x	INCOME TAXES						
208	TXD_WI.DRR.FT.PROD		Depreciation Removal & Repair Flow Thru - WI Production			-6,150,000	-5,279,414	-443,804	-426,783
209	TXD_WI.DRR.FT.TRANS		Depreciation Removal & Repair Flow Thru - WI Transmission			0	0	0	0
210	TXD_WI.DRR.FT.DIST		Depreciation Removal & Repair Flow Thru- WI Distribution			0	0	0	0
211	TXD_WI.DRR.FT.GEN		Depreciation Removal & Repair Flow Thru- WI General			0	0	0	0
212			WIS DEPRECIATION, REMOVAL & REPAIR			-79,507,955	-72,705,571	-4,192,473	-2,609,912
213			Total State Additions and Deductions			-85,657,955	-77,984,985	-4,636,276	-3,036,695
214			TOTAL OTHER DEFERRED TAXES			145,334,878	133,250,605	7,741,145	4,343,129
215	TXD_MI.SNG.BUS		Michigan Single Business Tax			0	0	0	0
216	TXD_DECOM.INT(not used)		Decommissioning Interest			0	0	0	0
217	TXD_20%MEAL.DIS		50% Meal Disallowance			725,000	646,955	45,653	32,393
218			Total Other Deductions			146,059,878	133,897,559	7,786,798	4,375,521
219			Total Additions and Deductions			60,401,923	55,912,575	3,150,521	1,338,827
220			Total Operating Revenues			3,127,801,292	2,754,543,806	184,082,161	189,175,324

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16	PeriodEnding					12 MONTHS ENDING			
17						December 2010			
18									
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20						TOTAL	WISCONSIN	MICHIGAN	FERC
21						ELECTRIC UTILITY	JURISDICTION	JURISDICTION	JURISDICTION
22			DEVELOPMENT OF ALLOCATED COST OF SERVICE						
221	MISC_OP.INC.ADJ		Not Used			0	0	0	0
222			O&M Expense			2,483,280,022	2,158,371,136	170,069,269	154,839,618
223			Depreciation Expense			235,754,852	214,301,405	12,946,497	8,506,950
224			Other Taxes			113,072,639	103,239,977	4,083,837	5,748,825
225	TXD_INT.LT		Interest Long Term Debt			102,499,781	91,845,242	6,431,103	4,223,437
226	TXD_INT.ST		Interest Short Term Debt			0	0	0	0
227			Net Operating Income		0	193,193,998	186,786,047	-9,448,544	15,856,495
228			Additions & Deductions			60,401,923	55,912,575	3,150,521	1,338,827
229			Wisconsin Taxable Income		0	253,595,921	242,698,621	-6,298,023	17,195,322
230			INCOME TAX @	7.5498%	-2	19,146,010	18,323,285	-475,489	1,298,214
231	MISC_WISC.TAX.ENVIR		WI Environmental Tax			9,800	8,781	615	404
232	MISC_WISC.TAX.ADJ		Michigan State Income Taxes		0	1,452,556	1,301,567	91,137	59,852
233		18	STATE		-2	20,608,366	19,633,633	-383,737	1,358,470
234	TXD_FED.DRR.FT.PROD		Depreciation Removal & Repair Flow Thru - FED Production			-6,150,000	-5,279,414	-443,804	-426,783
235	TXD_FED.DRR.FT.TRANS		Depreciation Removal & Repair Flow Thru - FED Transmission			0	0	0	0
236	TXD_FED.DRR.FT.DIST		Depreciation Removal & Repair Flow Thru- FED Distribution			0	0	0	0
237	TXD_FED.DRR.FT.GEN		Depreciation Removal & Repair Flow Thru- FED General			0	0	0	0
238			FED DEPRECIATION, REMOVAL & REPAIR		0	-65,325,125	-59,752,965	-3,438,780	-2,133,380
239			Federal Additions and Deductions			-71,475,125	-65,032,379	-3,882,584	-2,560,163
240			TOTAL OTHER DEFERRED TAXES		0	145,334,878	133,250,605	7,741,145	4,343,129
241	TXD_PS.DIV		Preferred Stock Dividend			0	0	0	0
242	TXD_DECOM.INT		State Income Tax Adjustment			0	0	0	0
243	TXD_20%MEAL.DIS		50% Meal Disallowance			725,000	646,955	45,653	32,393
244			Total Other Deductions			146,059,878	133,897,559	7,786,798	4,375,521
245			Wisconsin Income Tax			-20,608,366	-19,633,633	383,737	-1,358,470
246			Total Additions & Deductions			53,976,387	49,231,548	4,287,951	456,889
247			Total Operating Revenues			3,127,801,292	2,754,543,806	184,082,161	189,175,324
248	MISC_OP.INC.ADJ		Not Used			0	0	0	0
249			O&M Expense			2,483,280,022	2,158,371,136	170,069,269	154,839,618
250			Depreciation Expense			235,754,852	214,301,405	12,946,497	8,506,950
251			Other Taxes			113,072,639	103,239,977	4,083,837	5,748,825
252	TXD_INT.LT		Interest Long Term Debt			102,499,781	91,845,242	6,431,103	4,223,437
253	TXD_INT.ST		Interest Short Term Debt			0	0	0	0
254			Net Operating Income			193,193,998	186,786,047	-9,448,544	15,856,495
255			Additions & Deductions			53,976,387	49,231,548	4,287,951	456,889
256			Taxable Income		3	247,170,385	236,017,594	-5,160,593	16,313,384
257			INCOME TAX @	35.0000%	1	86,509,635	82,606,158	-1,806,208	5,709,684
258	MISC_FED.TAX.ENVIR		Wind Energy Tax Credit			-6,830,397	-5,643,077	-629,329	-557,991
259	MISC_FED.TAX.ADJ		R&D Tax Credit			0	0	0	0
260		19	FEDERAL		1	79,679,238	76,963,081	-2,435,537	5,151,694

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16	PeriodEnding					12 MONTHS ENDING			
17						December 2010			
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19									
20						TOTAL	WISCONSIN	MICHIGAN	FERC
21						ELECTRIC UTILITY	JURISDICTION	JURISDICTION	JURISDICTION
22			DEVELOPMENT OF ALLOCATED COST OF SERVICE						
261	MISC_ITC.PROD		Investment Tax Credit - Production			-1,322,683	-1,135,446	-95,449	-91,788
262	MISC_ITC.TRAN		Investment Tax Credit - Transmission			0	0	0	0
263	MISC_ITC.DIST		Investment Tax Credit - Distribution			-1,575,080	-1,515,697	-56,748	-2,635
264	MISC_ITC.GEN		Investment Tax Credit - General			-58,876	-52,538	-3,707	-2,631
265		20	INVESTMENT TAX CREDIT - NET		0	-2,956,639	-2,703,681	-155,904	-97,054
266		21	TOTAL OPERATING EXPENSE			2,890,836,647	2,534,829,339	181,897,729	174,109,579
267									
268		22	OPERATING INCOME			236,964,645	219,714,467	2,184,433	15,065,745
269									
270		23	ADJUSTMENTS TO OPERATING INCOME						
271	MISC_TAX.ADJ		Tax Settlement			0	0	0	0
272	MISC_AFDC		Allowance For Funds Used During Construction			49,989,000	43,173,868	3,524,140	3,290,992
273	MISC_AMORT.BOND.EXPENSE		Not Used			0	0	0	0
274	MISC_INT.LTD		Income Tax Effect of Interest Allowed for Ratemaking			0	0	0	0
275	MISC_DISALLOWANCE		Disallowances (Net of Tax)			1,164,457	1,040,390	72,573	51,494
276	MISC_INTEREST.SYNCHRONIZATION		Interest Synchronization			0	0	0	0
277	MISC_MI.TRANS.ADJ		Not Used			0	0	0	0
278	MISC_OP.INC.ADJ		Not Used			0	0	0	0
279	MISC_OP.INC.ADJ1A		Not used			0	0	0	0
280	MISC_OP.INC.ADJ1B		Not used			0	0	0	0
281	MISC_OP.INC.ADJ1C		Not used			0	0	0	0
282	MISC_OP.INC.ADJ2		Not used			0	0	0	0
283	MISC_OP.INC.ADJ3		Not Used			0	0	0	0
284	MISC_OP.INC.ADJ4		Not Used			0	0	0	0
285	MISC_OP.INC.ADJ5		Not Used			0	0	0	0
286	MISC_OP.INC.ADJ6		Not used			0	0	0	0
287	MISC_OP.INC.ADJ7		Adjustment for PTF Jurisdictional Deferrals		Ex A3	-1,047,139	0	-1,047,139	0
288	MISC_OP.INC.ADJ8		Adjustment for PTF Jurisdictional Deferrals (Net Bad		Sched C 15	1,047,139	1,047,139	0	0
289	MISC_OP.INC.ADJ9		Not Used			0	0	0	0
290	MISC_OP.INC.ADJ10		Not used			0	0	0	0
291	MISC_OP.INC.ADJ11		Not used			0	0	0	0
292	MISC_OP.INC.ADJ12		Not used			0	0	0	0
293	MISC_OP.INC.ADJ13		Not used			0	0	0	0
294	MISC_OP.INC.ADJ14		Not used			0	0	0	0
295	MISC_OP.INC.ADJ15		Not used			0	0	0	0
296	MISC_OP.INC.ADJ16		Not used			0	0	0	0
297	MISC_OP.INC.ADJ17		Not used			0	0	0	0
298	MISC_OP.INC.ADJ18		Not used			0	0	0	0
299	MISC_OP.INC.ADJ19		Not used			0	0	0	0
300	MISC_OP.INC.ADJ20		Not used			0	0	0	0
301	MISC_OP.INC.ADJ21		Not used			0	0	0	0
302	MISC_OP.INC.ADJ22		Not used			0	0	0	0

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16	PeriodEnding					12 MONTHS ENDING			
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20						TOTAL	WISCONSIN	MICHIGAN	FERC
21						ELECTRIC UTILITY	JURISDICTION	JURISDICTION	JURISDICTION
22			DEVELOPMENT OF ALLOCATED COST OF SERVICE						
303	MISC_OP.INC.ADJ23		Not used			0	0	0	0
304	MISC_OP.INC.ADJ24		Not used			0	0	0	0
305	MISC_OP.INC.ADJ25		Not used			0	0	0	0
306	MISC_OP.INC.ADJ26		Not used			0	0	0	0
307	MISC_OP.INC.ADJ27		Not used			0	0	0	0
308	MISC_OP.INC.ADJ28		Not used			0	0	0	0
309	MISC_OP.INC.ADJ29		Not used			0	0	0	0
310	MISC_OP.INC.ADJ30		Not used			0	0	0	0
311		23	TOTAL ADJUSTMENTS TO OPERATING INCOME			51,153,457	45,261,397	2,549,575	3,342,486
312									
313		24	ADJUSTED OPERATING INCOME		1	288,118,102	264,975,864	4,734,007	18,408,231
314		25	EARNED RATE OF RETURN			5.7624%	5.9143%	1.5090%	8.9351%
315									
316		26	REQUIRED RATE OF RETURN		0	7.0000%	7.0000%	7.0000%	7.0000%
317									
318		27	INCOME DEFICIENCY		-1	61,881,149	48,642,033	17,225,856	-3,986,740
319		28	REVENUE DEFICIENCY		-3	103,329,142	81,222,467	28,763,734	-6,657,059
320									
321	MISC_REV.DEF.ADJ		Not used			0	0	0	0
322	MISC_REV.DEF.ADJ1		Not used			0	0	0	0
323	MISC_REV.DEF.ADJ2		Not used			0	0	0	0
324	MISC_REV.DEF.ADJ3		Not used			0	0	0	0
325	MISC_REV.DEF.ADJ4		Not Used			0	0	0	0
326	MISC_REV.DEF.ADJ5		Not Used			0	0	0	0
327	MISC_REV.DEF.ADJ6		Not Used			0	0	0	0
328	MISC_REV.DEF.ADJ7		Not Used			0	0	0	0
329	MISC_REV.DEF.ADJ8		Not Used			0	0	0	0
330	MISC_REV.DEF.ADJ9		Not Used			0	0	0	0
331	MISC_REV.DEF.ADJ10		Not Used			0	0	0	0
332		29	ADJUSTMENTS TO REVENUE DEFICIENCY			0	0	0	0
333		30	ADJ REVENUE DEFICIENCY			103,329,142	81,222,467	28,763,734	-6,657,059
334		31	ADJ. PERCENTAGE INCREASE			3.5942%	3.1932%	17.7667%	-3.9302%
335									
336		32	REVENUE REQUIREMENT			2,978,254,024	2,624,865,742	190,661,068	162,727,214

Wisconsin Electric Power Company

Adjustment for Removal of ERGS Unit 2 Related Lease Prepayment Expense

Projected Test Year Ending December 31, 2010

Line	Description		Total
			(1)
	Revenue Requirement of ERGS Unit 2 Lease Prepayment Expense Included in Staff's Second Revised Cost of Service Study		
1	ERGS Unit 2 Michigan Amount of Amortization of Lease Pmt [1]	$	425,742
2	Michigan Retail Allocation		98.53%
3	Total Michigan Retail Jurisdictional Adjustment	$	419,478

Source/Notes:

[1] Case No. U-15981, WPA3C15 PTF Costs 2008-2010

Wisconsin Electric Power Company
Working Capital Correction
Projected Test Year Ending December 31, 2010

Line	Description	Total (1)
	Revenue Requirement of Error in Working Capital Adjustment included in Staff's Filing	
1	WEPCo Requested Total Electric Working Capital [1]	$ 319,066,542
2	Staff Incentive Compensation Working Capital Adjustment [2]	(13,598,981)
3	Staff Corrected Total Electric Working Capital	$ 305,467,561
4	Staff Reported Total Electric Working Capital [3]	$ 332,665,524
5	Working Capital Adjustment	$ 27,197,963
6	Michigan Retail Allocation [1]	4.428%
7	Michigan Retail Allocated Amount	$ 1,204,278
8	Staff Pre-Tax Rate of Return [4]	10.31%
9	Michigan Retail Revenue Adjustment	$ 124,107

Source/Notes:

[1] Case No. U-15981, Exhibit A-2, Schedule B4

[2] Case No. U-15981, Exhibit S-2, Schedule B4, Witness: Yerva C. Talbert

[3] Case No. U-15981, Exhibit S-2, Schedule B1, Witness: Dolores Midkiff-Powell

[4] Case No. U-15981, Exhibit S-4, Schedule D1, Witness: Kavita B. Bankapur

Wisconsin Electric Power Company
Staff O&M Expense Adjustment
Projected Test Year Ending December 31, 2010

Line	Description	Staff Proposed 2010 Level [1]	WEPCO Actual 2009 Level [2]	Staff 2010 Inflation Rate	Adjusted 2010 Levels [3]
		(1)	(2)	(3)	(4)
1	Total Power Production Expense (Excl PTF Lease)	$238,222,249	$170,431,496	1.55%	$ 173,073,184
2	Total Transmission Expense	295,560,028	264,608,285	1.55%	268,709,714
3	Total Distribution Expense	100,084,070	82,141,413	1.55%	83,414,605
4	Total Customer Account Expense	52,242,023	50,527,525	1.55%	51,310,702
5	Total Customer Service & Informational Expense	52,928,325	50,367,982	1.55%	51,148,685
6	Total Sales Expense	281,023	335	1.55%	341
7	Total A&G Expense	196,323,402	165,187,579	1.55%	167,747,987
8	Total General Plant Expense	3,777,214	2,907,022	1.55%	2,952,081
9	Total Electric O&M Expense	$939,418,334	$786,171,639		$ 798,357,299
10	Total Adjustment to Staff's O&M Expense Level				$141,061,035
11	Michigan Retail Allocation [4]				4.01%
12	Total Michigan Retail O&M Adjustment				**$5,654,064**

Source/Formula:

[1] Case No. U-15981, Exhibit S-3, Schedule C5 & Exhibit S-3, Schedule C5.1.
Workpaper MIN-135 (MPG-126)

[2] WEPCo Response to TM-WE-146
Workpaper MIN-135 (MPG-126)

[3] Column 2 x (1+Column 3)

[4] Case No. U-15981, Exhibit A-3, Schedule C5

WISCONSIN ELECTRIC POWER COMPANY

CASE U-15981

TILDEN MINING CO., L.C. AND EMPIRE IRON MINING PARTNERSHIP
Thirteenth Set of Discovery Requests

TM-WE-146: In discovery request TM-WE-136, the Mines requested WEPCo's total 2009 operations and maintenance expenses in the same format as presented in Workpaper WPA3C5 (i.e., detail of historical 2008 and forecasted 2010 operations and maintenance expenses). WEPCo did not provide the requested data stating, "Data for 2009 year-end actuals is not yet available." Please provide WEPCo's total 2009 operations and maintenance expenses, reflecting actual data through the latest month of the year for which actual data is available and projected data for the remaining months of the year, in the same format as presented in Workpaper WPA3C5 (i.e., detail of historical 2008 and forecasted 2010 operations and maintenance expenses). While the Mines do not concede that discovery request TM-WE-136 was limited to requesting only actual data for 2009, please provide a revised or supplemental response to TM-WE-136 once actual data for 2009 is available.

Response: Actual O&M by FERC account through November 30, 2009 and the December, 2009 budgeted O&M are attached.

Answered by: Mary Wolter
Date: January 12, 2010

Michigan Public Service Commission
Wisconsin Electric Power Company
O&M Expenses - Year Ending December 31, 2009

Case No. U-15981
Discovery Request TM-WE-146

Account Description	Acct Number	ACTUALS through Nov 30, 2009	BUDGET December, 2009
ELECTRIC UTILITY			
Steam Power Generation Expenses			
OPERATION			
Supervision and Engineering	500	5,579,661	423,353
Steam Expenses	502	16,968,367	1,742,382
Milw. County Transfer -DR.	503	572,348	29,930
Valley Steam Transfer -CR.	504	(1,400,938)	(131,040)
Electric Expenses	505	3,172,495	266,369
Misc.	506	17,715,322	1,253,368
Steam Rent Elm Road	507	207,627,929	19,061,080
Total Operation		$250,235,184	$22,645,442
MAINTENANCE			
Supervision and Engineering	510	14,518,496	1,446,344
Structures	511	6,672,646	674,995
Boiler Plant	512	33,000,496	2,393,780
Electric Plant	513	15,976,662	1,070,559
Misc.	514	9,213,604	326,773
Total Maintenance		$79,381,905	$5,912,450
Total Steam Power Generation Exp		$329,617,089	$28,557,892
Nuclear Power Generation Exp.			
OPERATION			
Supervision and Engineering	517	0	0
Coolants and Water	519	0	0
Steam Expenses	520	0	0
Electric Expenses	523	0	0
Misc.	524	0	0
Total Operation		$0	$0
MAINTENANCE			
Supervision and Engineering	528	0	0
Structures	529	0	0
Reactor Plant Equipment	530	0	0
Electric Equipment	531	0	0
Misc.	532	0	0
Total Maintenance		$0	$0
Total Nuclear Power Generation Exp		$0	$0
Hydraulic Power Generation Exp.			
OPERATION			
Supervision and Engineering	535	373,928	648,258
Hydraulic Expenses	537	1,181,835	16,446
Electric Hydro	538	222,143	0
Misc.	539	235,214	0
Rents	540	0	0
Total Operation		$2,013,120	$664,704
MAINTENANCE			
Maint. Supervision & Engineering	541	343,797	0
Maint. Of Structures	542	343,589	0
Maint. of Reservoirs, Dams & Waterways	543	593,975	0
Maint of Electric Plant Hydro	544	556,803	0
Misc.	545	397,415	12,686
Total Maintenance		2,235,579.89	12,686.49
Total Hydraulic Power Generation Exp		$4,248,700	$677,391

Michigan Public Service Commission
Wisconsin Electric Power Company
O&M Expenses - Year Ending December 31, 2009

Case No. U-15981
Discovery Request TM-WE-146

Account Description	Acct Number	ACTUALS through Nov 30, 2009	BUDGET December, 2009
Gas Turbine			
OPERATION			
Supervision and Engineering	546	542,436	46,255
Generation Expenses CT	548	3,514,508	235,764
Misc.	549	2,559,197	277,955
Other Power Generation - Rents	550	94,261,992	8,360,977
		100,878,133	8,920,950
MAINTENANCE			
Supervision and Engineering	551	1,323,662	111,941
Structures	552	76,758	2,483
Generating and Electric Plant	553	12,555,937	1,089,796
Misc. Plant	554	4,205,346	392,647
Total Maintenance		$18,161,703	$1,596,867
Total Gas Turbine		$119,039,836	$10,517,817
Other Power Supply Expenses			
OPERATION			
Sys. Control and Load Dispatch.	556	2,953,986	467,656
Other Expenses	557	3,390,055	273,051
Precertification Expenses	558	0	0
Total Operation		$6,344,042	$740,707
TOTAL POWER PRODUCTION EXPENSES		$459,249,667	$40,493,807
Transmission Expenses			
OPERATION			
MISO BA Costs	561	4,903,979	150,932
Transmission of Electricy by Others	565	230,799,626	21,572,507
Tran-Misc Exp 138KV OH WI	566	772,422	84,684
Market Facilitation, Monitor & Compliance	575	5,799,885	524,250
TOTAL TRANSMISSION EXPENSES		$242,275,912	$22,332,373
Distribution Expenses			
OPERATION			
Supervision and Engineering	580	2,072,790	157,269
Load Dispatching	581	5,640,778	438,147
Station Expenses	582	1,730,152	196,175
Overhead Line Expenses	583	6,078,076	618,242
Underground Line Expenses	584	2,719,387	254,742
Street Lighting & Signal Sys Exp	585	1,079,738	91,478
Meter Expenses	586	3,820,534	406,000
Customer Installations Expenses	587	23,780	3,685
Misc.	588	8,554,205	595,297
Rents	589	60,847	3,798
Total Operation		$31,780,286	$2,764,833
MAINTENANCE			
Supervision and Engineering	590	92,082	101,855
Structures	591	326,899	37,525
Station Equipment	592	5,993,408	303,448
Overhead Lines	593	29,260,524	2,657,944
Underground Lines	594	6,688,149	612,537
Line Transformers	595	338,724	24,877
Street Lighting and Signal Sys.	596	1,067,106	91,216
Meters	597	0	0
Misc. Plant	598	0	0
Total Maintenance		$43,766,892	$3,829,402
TOTAL DISTRIBUTION EXPENSES		$75,547,178	$6,594,236

Michigan Public Service Commission Case No. U-15981
Wisconsin Electric Power Company Discovery Request TM-WE-146
O&M Expenses - Year Ending December 31, 2009

Account Description	Acct Number	ACTUALS through Nov 30, 2009	BUDGET December, 2009
Customer Accounts Expenses			
Supervision	901	385,404	34,292
Meter Reading Expenses	902	6,465,527	629,298
Cust. Records and Collection Exp	903	18,540,274	1,624,186
Uncollectible Accounts	904	20,741,420	2,021,932
Misc.	905	74,337	10,856
Total		$46,206,961	$4,320,564
Customer Service & Informational Exp			
Supervision	907	488,911	38,677
Customer Assistance Expense	908	43,971,371	4,310,290
Info. & Instructional Advertising Exp	909	1,369,727	77,582
Misc.	910	106,999	4,425
Total		$45,937,008	$4,430,974
Sales Expenses			
Supervision	911	0	0
Demonstrating and Selling Exp.	912	0	0
Advertising Expenses	913	335	0
Misc.	916	0	0
Total		$335	$0
Administrative and General Expenses			
OPERATION			
Administrative & General Salaries	920	55,093,808	4,060,841
Office Supplies & Expenses	921	30,935,500	3,511,002
Admin Exp Transferred - CR	922	(5,991,038)	(448,010)
Outside Services Employed	923	4,763,383	496,490
Property Insurance	924	2,103,143	(4,661,280)
Injuries and Damages	925	7,826,846	858,080
Employee Pensions & Benefits	926	56,990,150	5,350,699
Regulatory Commission Exp	928	3,184,532	227,138
Duplicate Charges - CR	929	(4,078,832)	(459,546)
General Advertising Exp	930-1	146,614	(146,993)
Misc. General Expenses	930-2	4,997,504	427,547
Rents	931	0	0
Total Operation		$155,971,610	$9,215,969
MAINTENANCE			
General Plant	935	2,595,515	311,507
Total A&G		$158,567,125	$9,527,476
TOTAL ELECTRIC		**$1,027,784,187**	**$87,699,429**

Wisconsin Electric Power Company

Rate of Return Reduction Impact

1. Staff's Proposed Capital Structure[1]

Line	Description	Amount (1)	Weight (2)	Cost (3)	Weighted Cost (4)	Pre-Tax Weighted Cost[1] (5)
1	Long-Term Debt	$ 1,985,000,000	34.74%	5.64%	1.96%	1.96%
2	Short-Term Debt	$ 440,401,957	7.71%	0.99%	0.08%	0.08%
3	Preferred Stock	$ 30,449,800	0.53%	4.01%	0.02%	0.04%
4	Common Stock	$ 2,729,488,693	47.77%	**10.25%**	4.90%	8.18%
5	Deferred Income Tax	$ 496,013,460	8.68%	0.00%	0.00%	0.00%
6	Deferred JDITC	$ 32,060,245	0.56%	7.66%	0.04%	0.06%
7	**Total**	**$ 5,713,414,155**	**100.00%**		**7.00%**	**10.31%**
8	Composite Tax Rate[1]					1.6698

2. Capital Structure Adjustment,

	Description	Amount (1)	Weight (2)	Cost (3)	Weighted Cost (4)	Pre-Tax Weighted Cost[1] (5)
9	Long-Term Debt	$ 1,985,000,000	33.04%	5.64%	1.86%	1.86%
10	Short-Term Debt	$ 440,401,957	7.33%	0.99%	0.07%	0.07%
11	Preferred Stock	$ 30,449,800	0.51%	4.01%	0.02%	0.03%
12	Common Stock	$ 2,729,488,693	45.43%	10.25%	4.66%	7.77%
13	Deferred Income Tax	$ 791,345,000	13.17%	0.00%	0.00%	0.00%
14	Deferred JDITC	$ 32,060,245	0.53%	7.66%	0.04%	0.06%
15	**Total**	**$ 6,008,745,695**	**100.00%**		**6.65%**	**9.80%**
16	**Total Pre-Tax ROR Impact**					**0.51%**
17	WEPCo Jurisdictional Rate Base[2]					**$292,947,762**
18	**Revenue Impact:**					**$ 1,480,815**

Sources:
[1] Bankapur, Exhibit No. S-4, Schedule No. D-1.
[2] Workpaper MIN-130 (MPG-121) less Michigan Retail Working Capital Adjustment from MIN-134 (MPG-125)
[3] Midkiff-Powell, Exhibit No. S-2, Schedule No. B-1.

WISCONSIN ELECTRIC POWER COMPANY

CASE U-16034

TILDEN MINING CO., L.C. AND EMPIRE IRON MINING PARTNERSHIP
First Set of Discovery Requests

TM-WE-36: Please identify the current projected commercial operation date for ERGS Unit 1.

Response: The current projected guaranteed commercial operation date for ERGS Unit 1 is January 27, 2010.

Answered by: Paul Schumacher
Date: January 13, 2010

Wisconsin Electric Power Company

Total ERGS Unit 1 Related Costs Incorporated in Michigan Retail Cost of Service

Projected Test Year Ending December 31, 2010

Line	Description	Total
		(1)
1	Michigan Retail ERGS Unit 1 Lease Expense [1]	10,691,180
2	Michigan Retail Portion of ERGS Unit 1 Amortization of Lease Payment [2]	1,183,304
3	Total Michigan Retail ERGS Unit 1 Lease Expense	11,874,484
4	Michigan Retail ERGS Unit 1 Deferred Costs [3]	34,730,756
5	Staff Adjusted Pre-Tax ROR [4]	9.8007%
6	Total Michigan Retail ERGS Unit 1 Deferral Expense	3,403,873
7	Total ERGS Unit 1 Related Costs (L3 + L6)	15,278,357
8	Total Per Month ERGS Unit 1 Related Costs (L7 / 12)	1,273,196

Source/Notes:

[1] Case No. U-15981, Exhibit A-3, Schedule C15

[2] Case No. U-15981, Workpaper WPA3C15

[3] Exhibit MIN-64 (MPG-64), Page 4 of 4

[4] Exhibit MIN-137 (MPG-128)

Wisconsin Electric Power Company
2010 Rate Cp LC Energy Usage Adjustment
Projected Test Year Ending December 31, 2010

Line	Description		Total
			(1)
1	Staff Projected Rate Schedule Cp LC Sales [1]		2,074,109
2	Mines' Updated Projected Rate Schedule Cp LC Sales [2]		2,203,000
3	Projected Increased 2010 Energy Sales		128,891
4	Average $/MWh for Cp LC Class [2]	$	48.66
5	Present $/MWh PSCR Base [2]	$	41.71
6	Total Margin	$	6.95
7	Projected Increase in Base Margin (L3 x L6)	$	895,953

Source/Notes:

[1] Direct Testimony of Ronald J. Ancona, Page 6

[2] Exhibit MIN-52R (MPG-52R)

WISCONSIN ELECTRIC POWER COMPANY
Comparison of Staff's Second Revised Cost of Service Study Results and Proposed Class Revenue Requirement

Results of the Staff's Second Revised ECOS Study

Line No.	Customer Class	Projected Sales Revenue	Revenue Requirement	Revenue Increase	% Increase	% of System Average
		(1)	(2)	(3)	(4)	(5)
1	Small Customer Class	30,663,030	38,947,136	8,284,106	27.02%	154.5%
2	Large Customer Class	27,527,644	31,654,194	4,126,550	14.99%	85.7%
3	Mines Customer Class	101,943,331	117,442,620	15,499,289	15.20%	87.0%
4	Street Lighting	569,167	757,631	188,465	33.11%	189.4%
5	Total w/o Special Contracts	160,703,171	188,801,582	28,098,411	17.48%	100.0%

Staff Proposed Rate Design

Line No.	Customer Class	Projected Sales Revenue	Revenue Requirement	Revenue Increase	% Increase	% of System Average
		(1)	(2)	(3)	(4)	(5)
6	Small Customer Class	30,663,030	38,429,661	7,766,631	25.33%	117.7%
7	Large Customer Class	27,527,644	32,829,400	5,301,756	19.26%	89.5%
8	Mines Customer Class	101,943,331	123,302,020	21,358,689	20.95%	97.4%
9	Street Lighting	569,167	726,943	157,776	27.72%	128.8%
10	Total w/o Special Contracts	160,703,171	195,288,024	34,584,852	21.52%	100.0%

WISCONSIN ELECTRIC POWER COMPANY

Staff's Second Revised Cost of Service Study Results

Line No.	Rate Class	Rate Base (a)	Projected Sales Revenues (b)	Adjust NOI (c)	ROR (d) = (c)/(a)	Indexed ROR (e)	Income @ 7.00% (f) = 7.00% x (a)	Income Deficiency (Excess) (g) = (f) - (c)	Revenue Deficiency (Excess) (h) = (g) x GRCF	% Revenue Increase (i) = (h) / (b)
1	Small Cust.	86,244,337	30,663,030	1,075,967	1.2476%	82.7	6,037,104	4,961,137	8,284,106	27.02%
2	Med. Cust.	-	-	-	-	0.0	-	-	-	-
3	Large Cust.	48,746,811	27,527,644	940,993	1.9304%	127.9	3,412,277	2,471,284	4,126,550	14.99%
4	Mines	173,895,461	101,943,331	2,890,560	1.6622%	110.2	12,172,682	9,282,123	15,499,289	15.20%
5	Lighting & Other	2,109,053	569,167	34,767	1.6485%	109.2	147,634	112,867	188,465	33.11%
6	Juris. w/o S.C.	310,995,661	160,703,171	4,942,286	1.5892%	105.3	21,769,696	16,827,410	28,098,411	17.48%
7	Special Contracts	2,716,670	1,194,162	(208,279)	-7.6667%	-508.1	190,167	398,446	665,324	55.71%
	Total	**313,712,331**	**161,897,333**	**4,734,007**	**1.5090%**	100.0	**21,959,863**	**17,225,856**	**28,763,735**	**17.77%**
					Target ROR	7.00%		GRCF	1.6698	

WISCONSIN ELECTRIC POWER COMPANY

Staff's Second Revised Cost of Service Study Results

Line No.	Rate Class	Total ECOS Revenues	Staff's 2010 Prop. Revenues	Staff's Prop. % Increase	% of System Average
		(j)	(k)	(l)	(m)
1	Small Cust.	38,947,136	38,429,661	25.33%	117.69%
2	Med. Cust.	-	-	0.00%	
3	Large Cust.	31,654,194	32,829,400	19.26%	89.49%
4	Mines	117,442,620	123,302,020	20.95%	97.35%
5	Lighting & Other	757,631	726,943	27.72%	128.81%
6	Juris. w/o S.C.	188,801,582	195,288,024	21.52%	100.00%
7	Special Contracts	1,859,486	1,952,486	63.50%	290.89%
	Total	**190,661,068**	**197,240,510**	21.83%	100.00%

WORKPAPER WPA3C5

Michigan Public Service Commission
Wisconsin Electric Power Company
Detail of Operations & Maintenance Expenses
Projected Test Year Ending December 31, 2010

Case U-15981
Workpaper WPA3C5
Witness: Mary L. Wolter

Line	Account Description	FERC Acct Number	2008 ACTUALS TOTAL ACCOUNT	Increase (Decrease)	2010 TEST YEAR TOTAL ACCOUNT
1	**ELECTRIC UTILITY**				
2	**Steam Power Generation Expenses**				
3	OPERATION				
4	Supervision and Engineering	500	5,749,150	1,169,281	6,918,432
5	Steam Expenses	502	22,286,944	3,900,862	26,187,806
6	Milw. County Transfer -DR.	503	366,568	5,192	371,760
7	Valley Steam Transfer -CR.	504	(1,496,512)	(131,048)	(1,627,560)
8	Electric Expenses	505	3,716,885	357,541	4,074,426
9	Misc.	506	21,473,612	15,165,406	36,639,018
10	Steam Rent Elm Road	507	223,691,473	42,099,994	265,791,467
11	Total Operation		$275,788,119	$62,567,229	$338,355,349
12					
13	MAINTENANCE				
14	Supervision and Engineering	510	16,910,405	861,374	17,771,779
15	Structures	511	8,053,516	6,460,820	14,514,336
16	Boiler Plant	512	47,896,501	22,988,082	70,884,583
17	Electric Plant	513	18,186,182	2,919,765	21,105,947
18	Misc.	514	9,676,849	(4,348,089)	5,328,760
19	Total Maintenance		$100,723,453	$28,881,953	$129,605,406
20					
21	Total Steam Power Generation Exp		$376,511,572	$91,449,182	$467,960,754
22					
23	**Nuclear Power Generation Exp.**				
24	OPERATION				
25	Supervision and Engineering	517	(2,376)	2,376	0
26	Coolants and Water	519	9,333	(9,333)	0
27	Steam Expenses	520	72	(72)	0
28	Electric Expenses	523	200	(200)	0
29	Misc.	524	5,958	(5,958)	0
30	Total Operation		$13,187	($13,187)	$0
31					
32	MAINTENANCE				
33	Supervision and Engineering	528	72	(72)	0
34	Structures	529	0	0	0
35	Reactor Plant Equipment	530	420	(420)	0
36	Electric Equipment	531	1,575	(1,575)	0
37	Misc.	532	105	(105)	0
38	Total Maintenance		$2,172	($2,172)	$0
39					
40	Total Nuclear Power Generation Exp		$15,359	($15,359)	$0
41					
42	**Hydraulic Power Generation Exp.**				
43	OPERATION				
44	Supervision and Engineering	535	429,411	6,578,004	7,007,415
45	Hydraulic Expenses	537	1,126,426	(887,942)	238,484
46	Electric Hydro	538	234,069	(234,069)	0
47	Misc.	539	331,516	(331,516)	0
48	Rents	540	0	0	0
49	Total Operation		$2,121,422	$5,124,477	$7,245,899
50	MAINTENANCE				
51	Maint. Supervision & Engineering	541	319,939.38	(319,939)	
52	Maint. Of Structures	542	682,353.83	(682,354)	
53	Maint. of Reservoirs, Dams & Waterways	543	762,115	(762,115)	0
54	Maint of Electric Plant Hydro	544	505,251	(505,251)	0
55	Misc.	545	634,555	(458,784)	175,770
56	Total Maintenance		$2,904,214	($2,728,443)	$175,770
57					
58	Total Hydraulic Power Generation Exp		$5,025,636	$2,396,033	$7,421,669

WORKPAPER WPA3C5

Michigan Public Service Commission
Wisconsin Electric Power Company
Detail of Operations & Maintenance Expenses
Projected Test Year Ending December 31, 2010

Case U-15981
Workpaper WPA3C5
Witness: Mary L. Wolter

Line	Account Description	FERC Acct Number	2008 ACTUALS TOTAL ACCOUNT	Increase (Decrease)	2010 TEST YEAR TOTAL ACCOUNT
59					
60	**Gas Turbine**				
61	OPERATION				
62	Supervision and Engineering	546	565,042	54,216	619,258
63	Generation Expenses CT	548	3,794,548	(80,889)	3,713,660
64	Misc.	549	3,013,012	323,120	3,336,131
65	Other Power Generation - Rents	550	94,270,006	3,214,735	97,484,741
66	Total Operation		$101,642,608	$3,511,182	$105,153,790
67	MAINTENANCE				
68	Supervision and Engineering	551	951,330	743,684	1,695,014
69	Structures	552	255,948	(102,675)	153,273
70	Generating and Electric Plant	553	13,773,062	8,000,549	21,773,611
71	Misc. Plant	554	2,885,443	4,230,295	7,115,737
72	Total Maintenance		$17,865,782	$12,871,853	$30,737,635
73					
74	Total Gas Turbine		$119,508,390	$16,383,035	$135,891,425
75					
78	Power Purch. from other Utilities	555-1	0	0	0
79	Purch. Power for Isolated Systems	555-3	0	0	0
80	Sys. Control and Load Dispatch.	556	3,211,369	1,222,418	4,433,787
81	Other Expenses	557	4,496,965	2,865,105	7,362,070
82	Precertification Expenses	558	0	0	0
83	Total Operation		$7,708,334	$4,087,523	$11,795,857
84					
85	**TOTAL POWER PRODUCTION EXPENSES**		$508,769,292	$114,300,414	$623,069,706
86					
88	**Transmission Expenses**				
89	OPERATION				
90	MISO BA Costs	561	5,121,782	(2,978,331)	2,143,450
91	Transmission of Electricy by Others	565	243,284,364	41,744,001	285,028,365
92	Tran-Misc Exp 138KV OH WI	566	1,134,919	873,285	2,008,205
93	Market Facilitation, Monitoring and Compliance Svce	575	5,548,090	831,918	6,380,008
94					
95	**TOTAL TRANSMISSION EXPENSES**		$255,089,155	$40,470,873	$295,560,028
96					
97	**Distribution Expenses**				
98	OPERATION				
99	Supervision and Engineering	580	2,129,254	417,571	2,546,826
100	Load Dispatching	581	6,446,851	133,339	6,580,190
101	Station Expenses	582	2,263,911	760,243	3,024,154
102	Overhead Line Expenses	583	7,306,201	1,655,912	8,962,114
103	Underground Line Expenses	584	3,410,839	523,605	3,934,444
104	Street Lighting & Signal Sys Exp	585	976,004	275,840	1,251,844
105	Meter Expenses	586	4,923,854	1,102,280	6,026,133
106	Customer Installations Expenses	587	51,823	8,032	59,855
107	Misc.	588	11,137,359	(701,677)	10,435,682
108	Rents	589	61,734	7,566	69,300
109	Total Operation		$38,707,832	$4,182,710	$42,890,542
110					
111	MAINTENANCE				
112	Supervision and Engineering	590	119,443	1,483,119	1,602,562
113	Structures	591	232,186	358,231	590,417
114	Station Equipment	592	7,162,724	(2,417,721)	4,745,003
115	Overhead Lines	593	35,709,020	7,853,360	43,562,380
116	Underground Lines	594	8,198,623	1,990,728	10,189,350
117	Line Transformers	595	395,653	(13,687)	381,966
118	Street Lighting and Signal Sys.	596	965,173	282,733	1,247,905
119	Meters	597	0	0	0
120	Misc. Plant	598	(2,394)	2,394	0
121	Total Maintenance		$52,780,427	$9,539,157	$62,319,584
122					

MPSC Case No. U-15981
Exhibit MIN-143

WORKPAPER WPA3C5

Michigan Public Service Commission
Wisconsin Electric Power Company
Detail of Operations & Maintenance Expenses
Projected Test Year Ending December 31, 2010

Case U-15981
Workpaper WPA3C5
Witness: Mary L. Wolter

Line	Account Description	FERC Acct Number	**2008 ACTUALS** TOTAL ACCOUNT	Increase (Decrease)	**2010 TEST YEAR** TOTAL ACCOUNT
123	**TOTAL DISTRIBUTION EXPENSES**		$91,488,259	$13,721,867	$105,210,125

MPSC Case No. U-15981
Exhibit MIN-143

WORKPAPER WPA3C5

Michigan Public Service Commission
Wisconsin Electric Power Company
Detail of Operations & Maintenance Expenses
Projected Test Year Ending December 31, 2010

Case U-15981
Workpaper WPA3C5
Witness: Mary L. Wolter

Line	Account Description	FERC Acct Number	2008 ACTUALS TOTAL ACCOUNT	Increase (Decrease)	2010 TEST YEAR TOTAL ACCOUNT
124					
126	**Customer Accounts Expenses**				
127	Supervision	901	433,424	75,356	508,779
128	Meter Reading Expenses	902	7,856,168	40,219	7,896,387
129	Cust. Records and Collection Exp	903	19,761,021	3,844,988	23,606,009
130	Uncollectible Accounts	904	65,509,821	(17,157,343)	48,352,478
131	Misc.	905	105,438	17,662	123,100
132	Total		$93,665,872	($13,179,119)	$80,486,753
133					
134	**Customer Service & Informational Exp**				
135	Supervision	907	415,972	47,299	463,271
136	Customer Assistance Expense	908	50,033,068	28,878,489	78,911,557
137	Info. & Instructional Advertising Exp	909	1,597,022	742,535	2,339,557
138	Misc.	910	89,798	97,907	187,705
139	Total		$52,135,860	$29,766,230	$81,902,090
140					
141	**Sales Expenses**				
142	Supervision	911	0	0	0
143	Demonstrating and Selling Exp.	912	0	0	0
144	Advertising Expenses	913	276,815	96,522	373,337
145	Misc.	916	0	0	0
146	Total		$276,815	$96,522	$373,337
147					
148	**Administrative and General Expenses**				
149	OPERATION				
150	Administrative & General Salaries	920	61,458,423	(221,006)	61,237,417
151	Office Supplies & Expenses	921	41,985,530	(758,981)	41,226,548
152	Admin Exp Transferred - CR	922	(5,950,755)	(291,159)	(6,241,913)
153	Outside Services Employed	923	6,166,392	330,202	6,496,593
154	Property Insurance	924	(632,706)	1,275,914	643,208
155	Injuries and Damages	925	9,394,946	3,395,068	12,790,014
156	Employee Pensions & Benefits	926	55,061,150	43,322,994	98,384,144
157	Regulatory Commission Exp	928	2,798,153	27,539	2,825,692
158	Duplicate Charges - CR	929	(4,224,895)	(1,486,543)	(5,711,438)
159	General Advertising Exp	930-1	(1,597,212)	5,041,025	3,443,813
160	Misc. General Expenses	930-2	6,830,154	1,437,200	8,267,354
161	Rents	931	0	0	0
162	Total Operation		$171,289,179	$52,072,253	$223,361,432
163					
164	MAINTENANCE				
165	General Plant	935	3,777,214	98,828	3,876,042
166					
167	TOTAL A&G EXPENSES		$175,066,393	$52,171,081	$227,237,474
168					
169	**TOTAL ELECTRIC**		**$1,176,491,645**	**$237,347,868**	**$1,413,839,514**

Docket No.: U-15981
Discovery Request TM-WE-151

c. 2010 PROJECTED HOURS ON-LINE BY UNIT

	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10
OC 5 HOURS ON-LINE	744	672	120	-	696	16	668	634	720	744	588	744
OC 6 HOURS ON-LINE	50	47	288	624	563	720	744	744	720	744	720	744
OC 7 HOURS ON-LINE	744	672	120	407	360	720	744	744	720	360	720	531
OC 8 HOURS ON-LINE	744	672	744	720	325	593	465	744	436	334	120	-
P4 1 HOURS ON-LINE	528	-	408	720	744	312	503	744	720	744	720	744
P4 2 HOURS ON-LINE	744	672	744	720	168	576	744	744	720	744	415	471
ELMROAD 1 HOURS ON-LINE	48	570	744	720	744	720	744	744	408	336	720	744
ELMROAD 2 HOURS ON-LINE	-	-	-	-	-	-	-	-	493	744	720	744
PIPP 5 HOURS ON-LINE	744	672	744	720	744	720	613	303	336	744	720	744
PIPP 6 HOURS ON-LINE	744	672	628	552	576	720	576	744	720	192	449	744
PIPP 7 HOURS ON-LINE	744	672	624	-	696	720	744	646	311	744	720	744
PIPP 8 HOURS ON-LINE	744	456	576	720	744	202	651	744	720	744	720	744
PIPP 9 HOURS ON-LINE	360	504	744	720	373	704	744	744	720	744	456	-
EDGEWATER 5 HOURS ON-LINE	585	651	192	720	744	720	744	744	720	744	720	744
VAPP 1 HOURS ON-LINE	744	672	744	216	-	240	744	744	720	744	720	744
VAPP 2 HOURS ON-LINE	744	646	672	720	744	720	744	744	562	728	670	744
MCPP 1 HOURS ON-LINE	744	672	744	264	528	720	744	744	720	744	720	744
PWGS 11 HOURS ON-LINE	263	405	535	467	301	511	492	343	205	204	216	251
PWGS 12 HOURS ON-LINE	306	421	554	458	333	447	520	363	184	460	53	306
CONCORD 1 HOURS ON-LINE	-	-	-	-	-	-	-	2	-	-	-	-
CONCORD 2 HOURS ON-LINE	-	-	-	-	-	-	-	4	-	-	-	-
CONCORD 3 HOURS ON-LINE	-	-	-	-	-	-	-	-	-	-	-	-
CONCORD 4 HOURS ON-LINE	-	-	-	-	-	-	-	-	-	-	-	-
PARIS 1 HOURS ON-LINE	-	-	-	-	-	-	-	1	-	-	-	-
PARIS 2 HOURS ON-LINE	-	-	-	-	-	-	-	2	-	-	-	-
PARIS 3 HOURS ON-LINE	-	-	-	-	-	-	-	-	-	-	-	-
PARIS 4 HOURS ON-LINE	-	-	-	-	-	-	-	1	-	-	-	-
GERMANTOWN 1 HOURS ON-LINE	-	-	-	-	-	-	-	-	-	-	-	-
GERMANTOWN 2 HOURS ON-LINE	-	-	-	-	-	-	-	-	-	-	-	-
GERMANTOWN 3 HOURS ON-LINE	-	-	-	-	-	-	-	-	-	-	-	-
GERMANTOWN 4 HOURS ON-LINE	-	-	-	-	-	-	-	-	-	-	-	-
GERMANTOWN 5 1 HOURS ON-LINE	-	-	-	-	-	-	1	14	-	-	-	-

Docket No.: U-15981
Discovery Request TM-WE-151

f-ix. 2010 PROJECTED FUEL COST BY UNIT

	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10
OC 5 FUEL COST - $	3,660,155	3,367,944	629,301	-	3,275,878	81,036	3,313,430	3,072,905	3,431,639	3,730,141	2,958,063	3,693,125
OC 6 FUEL COST - $	213,502	222,496	1,475,737	3,131,264	2,706,451	3,610,960	3,740,332	3,643,511	3,505,867	3,747,520	3,640,524	3,714,820
OC 7 FUEL COST - $	4,495,811	4,197,336	683,546	2,333,872	2,066,482	4,161,402	4,299,566	4,249,476	4,090,336	2,160,211	4,353,309	3,264,457
OC 8 FUEL COST - $	4,474,043	4,167,633	4,439,802	4,112,593	1,851,834	3,407,347	2,679,365	4,224,546	2,425,422	1,983,423	741,900	-
P4 1 FUEL COST - $	5,598,983	-	4,346,375	7,345,336	7,337,932	3,148,036	5,121,838	7,223,970	7,088,805	7,833,418	7,607,002	7,988,352
P4 2 FUEL COST - $	8,031,319	7,632,326	8,059,663	7,535,079	1,715,595	6,187,250	7,747,098	7,861,891	7,432,875	7,913,615	4,314,511	5,176,323
ELMROAD 1 FUEL COST - $	531,772	7,054,837	8,209,578	7,573,375	8,026,651	8,007,223	7,999,752	7,954,076	4,275,495	3,637,983	7,948,576	8,106,225
ELMROAD 2 FUEL COST - $	-	-	-	-	-	-	-	-	5,239,240	7,960,297	7,830,076	7,940,681
PIPP 5 FUEL COST - $	1,944,382	1,797,108	2,044,857	1,635,193	1,546,240	1,715,904	1,526,029	667,172	762,936	1,954,049	1,843,923	1,926,176
PIPP 6 FUEL COST - $	1,839,252	1,656,761	1,656,907	1,119,932	1,162,071	1,638,368	1,328,308	1,684,925	1,479,006	451,323	983,184	1,802,072
PIPP 7 FUEL COST - $	1,279,729	1,164,776	1,091,061	-	1,201,667	1,241,104	1,293,305	1,131,405	578,689	1,349,192	1,340,784	1,392,896
PIPP 8 FUEL COST - $	1,252,649	773,668	996,439	1,214,113	1,244,182	340,835	1,132,370	1,275,796	1,246,890	1,320,658	1,312,428	1,363,438
PIPP 9 FUEL COST - $	595,664	854,004	1,249,729	1,193,943	626,231	1,180,954	1,244,921	1,254,601	1,226,175	1,298,717	817,395	-
EDGEWATER 5 FUEL COST - $	1,131,506	1,472,202	441,655	1,424,590	1,439,857	1,425,247	1,489,329	1,461,626	1,382,016	1,517,216	1,451,889	1,507,794
VAPP 1 FUEL COST - $	2,333,439	2,075,835	2,472,321	476,137	-	880,596	2,205,056	2,110,951	1,580,126	1,874,662	1,603,686	1,928,933
VAPP 2 FUEL COST - $	2,415,783	2,035,525	2,173,805	1,643,322	1,699,671	2,180,023	2,203,128	2,125,719	1,299,237	1,799,828	1,552,344	1,939,756
MCPP 1 FUEL COST - $	170,486	152,208	168,528	59,586	119,097	178,400	183,766	179,745	161,036	166,441	161,382	167,388
PWGS 11 FUEL COST - $	5,745,142	7,985,661	11,491,575	7,641,327	4,834,708	10,273,238	9,753,635	6,856,775	3,839,688	4,158,590	4,130,514	5,371,764
PWGS 12 FUEL COST - $	6,605,272	8,393,296	12,084,543	8,215,515	6,116,957	9,109,294	10,531,802	7,017,953	3,365,272	9,866,176	940,360	6,507,859
CONCORD 1 FUEL COST - $	-	-	-	-	-	-	-	18,243	-	-	-	-
CONCORD 2 FUEL COST - $	-	-	-	-	-	-	-	36,446	-	-	-	-
CONCORD 3 FUEL COST - $	-	-	-	-	-	-	-	-	-	-	-	-
CONCORD 4 FUEL COST - $	-	-	-	-	-	-	-	-	-	-	-	-
PARIS 1 FUEL COST - $	-	-	-	-	-	-	-	9,625	-	-	-	-
PARIS 2 FUEL COST - $	-	-	-	-	-	-	-	19,066	-	-	-	-
PARIS 3 FUEL COST - $	-	-	-	-	-	-	-	-	-	-	-	-
PARIS 4 FUEL COST - $	-	-	-	-	-	-	-	7,891	-	-	-	-
GERMANTOWN 1 FUEL COST - $	-	-	-	-	-	-	-	-	-	-	-	-
GERMANTOWN 2 FUEL COST - $	-	-	-	-	-	-	-	-	-	-	-	-
GERMANTOWN 3 FUEL COST - $	-	-	-	-	-	-	-	-	-	-	-	-
GERMANTOWN 4 FUEL COST - $	-	-	-	-	-	-	-	-	-	-	-	-
GERMANTOWN 5 1 FUEL COST - $	-	-	-	-	-	-	7,533	106,591	-	-	-	-

WISCONSIN ELECTRIC POWER COMPANY

CASE U-15981

TILDEN MINING CO., L.C. AND EMPIRE IRON MINING PARTNERSHIP
Fifteenth Set of Discovery Requests

TM-WE-149: Please identify all of WEPCo's generating units that will not operate during 2010, as projected by WEPCo's production cost model used to develop WEPCo's projections in this proceeding.

Response: The following units are not projected by PROMOD to operate under economic dispatch. See also the responses to TM-WE-147 and TM-WE-148.

Concord Unit 3
Concord Unit 4
Paris Unit 3
Germantown Units 1 - 4.

Answered by: Paul Schumacher
Date: January 28, 2010

WISCONSIN ELECTRIC POWER COMPANY

CASE U-15981

TILDEN MINING CO., L.C. AND EMPIRE IRON MINING PARTNERSHIP
Sixteenth Set of Discovery Requests

TM-WE-161: Concerning WEPCo witness Rogers' testimony, please explain how WEPCo pays for transmission service from American Transmission Company to serve WEPCo's native load requirements in its Wisconsin jurisdiction, its Michigan jurisdiction and for wholesale customers. Please specifically describe how billing units for transmission service are measured (e.g., on a 75/25 demand/energy allocation basis, or coincident 12CP basis).

Response: The billing for transmission charges is summarized in work paper WPA6F1-8. This analysis indicates that approximately 96.6% of the transmission billing is based on demand and 3.4% is based on energy. This exhibit was based on an analysis performed in October 2008 of projected costs for test year 2010. Nothing has occurred in the interim to significantly change the results of this analysis.

Answered by: Eric Rogers
Date: January 31, 2010

WISCONSIN ELECTRIC POWER COMPANY

CASE U-15981

TILDEN MINING CO., L.C. AND EMPIRE IRON MINING PARTNERSHIP
Sixteenth Set of Discovery Requests

TM-WE-163: Is Mr. Rogers proposing to allocate transmission expense using allocation factors between jurisdictions and between customers in a manner that is different than how the WEPCo actually incurs transmission expense? If affirmative, please explain how his proposed allocation methodology properly assigns WEPCo's transmission expense between jurisdictions and customers on the basis of cost causation.

Response: As indicated on page 16 line 15 of the direct testimony of Company witness Mr. Eric Rogers, we maintain the spirit of the MPSC order on Case U-4771 by allocating transmission O&M costs to jurisdictions and classes based on 75% demand and 25% energy. This is different than the results of the analysis provided in response to TM-WE-161.

Answered by: Eric Rogers
Date: January 31, 2010

SERVICE - LARGE CURTAILABLE CONTRACT RATE SCHEDULE - Cp LC

we energies

231 W. Michigan St., P.O. Box 2089, Milwaukee, WI 53201
Phone: 1-800-714-7777 • Fax: 1-800-354-3585

ATTN: MR TIMOTHY SCHAEDIG
EMPIRE IRON MINING PARTNERSHIP
PO BOX 2000
ISHPEMING, MI 49849

Account Number:	[redacted]
Service Address:	PO BOX 2000 ISHPEMING, MI 49849
Billing Date:	January 4, 2010
Billing Period:	12/01/2009 to 12/31/2009
Due Date:	**Jan 25, 2010**
Amount Due:	**$3,943,222.59**

ACCOUNT BALANCE INFORMATION

Previous Account Balance		$3,874,769.96
Payments Received	- 12/22/2009 Thank You	($3,874,769.96)
Remaining Account Balance		$0.00
Total Current Charges		$3,943,222.59
Total Amount Due		$3,943,222.59

MESSAGE INFORMATION

To avoid a late payment charge of 1.5%, please pay the amount due by the due date shown on the bill.

Your bill includes a 2009 PSCR factor of $0.00477 per kWh. If you participate in the energy for tomorrow program, your PSCR factor is prorated.

Questions: Call 8AM-5PM central prevailing time Monday-Friday 800-714-7777 ext. 7700.

Billing information is also available on-line by logging on to energyanalysis.we-energies.com.

PLEASE DETACH AND RETURN THIS PORTION WITH YOUR PAYMENT

we energies

231 W. Michigan St., P.O. Box 2089, Milwaukee, WI 53201
Phone: 1-800-714-7777 • Fax: 1-800-354-3585

0125105039260971003943222590039432225 9

Date Due	Amount Due
Jan 25, 2010	$3,943,222.59

[redacted]

ATTN: MR TIMOTHY SCHAEDIG
EMPIRE IRON MINING PARTNERSHIP
PO BOX 2000
ISHPEMING, MI 49849

WE ENERGIES
P.O. BOX 2089
MILWAUKEE WI 53201-2089

Bill Detail Report

Group: Multiple Groups
Account Name: > EMPIRE IRON MINING PARTNERSHIP -
Account Number: [redacted]
Service: None
Location: PO BOX 2000

Bill Month: December **Year:** 2009
Created Date: 01/04/2010 08:54
Period: 12/01/2009 00:00 - 01/01/2010 00:00
Rate Name: M_CPLC - MI PRIMARY - LARGE CURTAIL
Rider: NOPRMRY

Description	Amount	Unit	Rate	Unit	Net Amount
On Peak Time: 8:00AM - 8:00PM					
No. of Billing Days	31	Days			$0.00
Power Factor - Lagging	96.6	PF%			$0.00
Power Factor - Leading	99.9	PF%			$0.00
Firm Service Level	.0	kW			$0.00
Contracted Demand	150,000.0	kW			$0.00
Max Demand - 12/15/2009 19:00	119,720.1	kW			$0.00
Max On Peak Dmd - 12/15/2009 19:00	119,720.1	kW			$0.00
Lagging KVAR - 12/15/2009 19:00	31,777.2	kVar			$0.00
Leading KVAR - 12/15/2009 19:00	491.4	kVar			$0.00
Distribution Charges					
Facilities Charge - Daily	31	Days	20.219180	$/Day	$626.79
Demand Charge	119,720.1	kW	0.217000	$/kW	$25,979.26
Delivery Charge	75,624,143	kWh	0.000440	$/kWh	$33,274.62
Power Factor Demand Charge	.0	kW	3.592000	$/kW	$0.00
Energy Optimization Charge	31	Days	32.91793	$/Day	$1,020.46
Total Distribution Charges					$60,901.13
Power Supply Charges					
On Peak Demand Charge	119,720.1	kW	9.227000	$/kW	$1,104,657.36
Curtailment Demand Credit	119,720.1	kW	-5.635000	$/kW	$-674,622.76
On-Peak kWh	26,465,845	kWh	0.048590	$/kWh	$1,285,975.41

Off-Peak kWh	49,158,298	kWh	0.036730	$/kWh	$1,805,584.29
Power Supply Cost Recovery	75,624,143	kWh	0.004770	$/kWh	$360,727.16
Total Power Supply Charges					$3,882,321.46
Point Beach Sale Credit	75,624,143	kWh	0.000000	$/kWh	$0.00
Penalties Applied	.0	kW	35.00	$/kW	$0.00
Bill Total					$3,943,222.59

SERVICE - LARGE CURTAILABLE CONTRACT RATE SCHEDULE - Cp LC

we energies

231 W. Michigan St., P.O. Box 2089, Milwaukee, WI 53201
Phone: 1-800-714-7777 • Fax: 1-800-354-3585

ATTN: MR TIMOTHY SCHAEDIG
TILDEN MINING COMPANY LC
PO BOX 2000
ISHPEMING, MI 49849

Account Number:	[redacted]
Service Address:	PO BOX 2000 ISHPEMING, MI 49849
Billing Date:	January 4, 2010
Billing Period:	12/01/2009 to 12/31/2009
Due Date:	**Jan 25, 2010**
Amount Due:	**$4,980,773.61**

ACCOUNT BALANCE INFORMATION

Previous Account Balance		$5,215,088.13
Payments Received	- 12/22/2009 Thank You	($5,215,088.13)
Remaining Account Balance		$0.00
Total Current Charges		$4,980,773.61
Total Amount Due		$4,980,773.61

MESSAGE INFORMATION

To avoid a late payment charge of 1.5%, please pay the amount due by the due date shown on the bill.

Your bill includes a 2009 PSCR factor of $0.00477 per kWh. If you participate in the energy for tomorrow program, your PSCR factor is prorated.

Questions: Call 8AM-5PM central prevailing time Monday-Friday 800-714-7777 ext. 7700.

Billing information is also available on-line by logging on to energyanalysis.we-energies.com.

PLEASE DETACH AND RETURN THIS PORTION WITH YOUR PAYMENT

we energies

231 W. Michigan St., P.O. Box 2089, Milwaukee, WI 53201
Phone: 1-800-714-7777 • Fax: 1-800-354-3585

0125100468780556004980773610049807736l

Date Due	Amount Due
Jan 25, 2010	$4,980,773.61

[redacted]

ATTN: MR TIMOTHY SCHAEDIG
TILDEN MINING COMPANY LC
PO BOX 2000
ISHPEMING, MI 49849

WE ENERGIES
P.O. BOX 2089
MILWAUKEE WI 53201-2089

Bill Detail Report

Group: Multiple Groups
Account Name: TILDEN MINING COMPANY, L.C. - 0468780556
Account Number: [redacted]
Service: None
Location: PO BOX 2000

Bill Month: December **Year:** 2009
Created Date: 01/04/2010 08:23
Period: 12/01/2009 00:00 - 01/01/2010 00:00
Rate Name: M_CPLC - MI PRIMARY - LARGE CURTAIL
Rider: NOPRMRY

Description	Amount	Unit	Rate	Unit	Net Amount
On Peak Time: 8:00AM - 8:00PM					
No. of Billing Days	31	Days			$0.00
Power Factor - Lagging	99.2	PF%			$0.00
Power Factor - Leading	100.0	PF%			$0.00
Firm Service Level	.0	kW			$0.00
Contracted Demand	180,000.0	kW			$0.00
Max Demand - 12/27/2009 08:00	151,653.6	kW			$0.00
Max On Peak Dmd - 12/31/2009 09:00	149,936.4	kW			$0.00
Lagging KVAR - 12/31/2009 09:00	19,051.2	kVar			$0.00
Leading KVAR - 12/31/2009 09:00	.0	kVar			$0.00
Distribution Charges					
Facilities Charge - Daily	31	Days	20.219180	$/Day	$626.79
Demand Charge	158,490.0	kW	0.217000	$/kW	$34,392.33
Delivery Charge	95,549,793	kWh	0.000440	$/kWh	$42,041.91
Power Factor Demand Charge	.0	kW	3.592000	$/kW	$0.00
Energy Optimization Charge	31	Days	32.91793	$/Day	$1,020.46
Total Distribution Charges					$78,081.49
Power Supply Charges					
On Peak Demand Charge	149,936.4	kW	9.227000	$/kW	$1,383,463.16
Curtailment Demand Credit	149,936.4	kW	-5.635000	$/kW	$-844,891.61
On-Peak kWh	33,625,984	kWh	0.048590	$/kWh	$1,633,886.56

Off-Peak kWh	61,923,809	kWh	0.036730	$/kWh	$2,274,461.50
Power Supply Cost Recovery	95,549,793	kWh	0.004770	$/kWh	$455,772.51
Total Power Supply Charges					$4,902,692.12
Point Beach Sale Credit	95,549,793	kWh	0.000000	$/kWh	$0.00
Penalties Applied	.0	kW	35.00	$/kW	$0.00
Bill Total					$4,980,773.61

we energies

231 W. Michigan Street
Milwaukee, WI 53203
www.we-energies.com

Filed Electronically

January 26, 2010

Ms. Mary Jo Kunkle
Executive Secretary
Michigan Public Service Commission
P.O. Box 30221
Lansing, MI 48909

RE: Case No. U-16094 – 2010 Final Alternative Energy Supplier Cap

Dear Ms. Kunkle:

Attached is Wisconsin Electric Power Company's report on 2009 weather-adjusted sales, 2009 calendar year sales and alternative energy supplier final cap for calendar year 2010.

If you have any questions regarding the enclosed report, please contact Mr. Thomas Lorden at (414) 221-3293.

Very truly yours,

Leslie J. Durski
Director – State Regulatory Affairs & Policy

LJD:tpl
Enclosure

WISCONSIN ELECTRIC POWER COMPANY
CASE No. U-16094
Implementation of Section 10a(1) of PA 286

2010 Final Cap

Based on Weather-Adjusted Retail Sales for the Preceding Calendar Year

Weather-Adjusted Retail Sales (MWh): **2,343,877**
Calendar Year Sales (MWh): **2,343,877**
Alternative Energy Supplier Cap (MWh): **234,387**

Supporting Documentation:

Michigan Retail Sales for 2009:		MWh
January	Actual	184,544
February	Actual	163,788
March	Actual	179,223
April	Actual	166,462
May	Actual	155,250
June	Actual	155,685
July	Actual	168,876
August	Actual	175,465
September	Actual	190,571
October	Actual	230,004
November	Actual	238,764
December	Actual	235,245
Total		2,343,877
10% Cap		234,387

Methodology used in rate case:

Wisconsin Electric (WE) normalizes its sales on a system-wide basis, rather than a jurisdictional basis. Since a vast majority of WE's weather-sensitive load is based within its Wisconsin jurisdiction, and the weather variables used to calculate the normalization adjustments are based on weather as measured as Milwaukee's General Mitchell International Airport, all of the weather normalization adjustments are applied to sales in the Wisconsin jurisdiction. This effectively means that WE's actual and weather-normalized sales in its Michigan jurisdiction are identical.

Prepared by: Thomas Lorden

Cost-of-Service Model
Level 2 External Allocators

Wisconsin Electric Power Company and
Wisconsin Gas LLC
Docket No. 05-UR-104
Exhibit 49
Schedule 4 Page 1 of 1
Witness: Eric Rogers
Date: April 2009

	A	B	C	D	E	F	G
1	FORMAT FOR LOADING EXTERNAL ALLOCATOR DATA TO ECOS MODEL LEVEL 2						
2							
3	**Allocator**	**Source**	**Defn**	**Wisconsin**	**Michigan**	**FERC**	
4							
5	100%Wisconsin-L2		Allocated 100% Wisconsin	1	0	0	1.000000000
6	100%Michigan-L2		Allocated 100% Michigan	0	1	0	1.000000000
7	100%FERC-L2		Allocated 100% FERC	0	0	1	1.000000000
8	OT_WILIC-L2	Not Relevant to MI	Split of License Fee between WI Retail and FERC	0.946475478	0.000000000	0.053524522	1.000000000
9	OT_MI.SNG.BUS-L2	Not Used	Split of MI Revenue between MI retail and wholesale jurisdiction based on revenues	0.000000000	0.432137773	0.567862227	1.000000000
10	Dmnd_12CP-L2	WPA6F1-2	Demands	0.872162059	0.057333220	0.070504721	1.000000000
11	Dmnd75_Enrg25-L2	WPA6F1-2	75% of Dmnd_12CP-L2 plus 25% of	0.865104511	0.061154835	0.073740654	1.000000000
12	Dmnd_12CP_Trans-L2	WPA6F1-2	Average of the 12 monthly Coincident Demands adjusted as required to allocate	0.911727267	0.059934114	0.028338619	1.000000000
13	OM_TRANS_MICH-L2	WPA6F1-2	75% of Dmnd_12CP_Trans-L2 plus 25% of Enrg_GenLevel_Trans-L2	0.906878857	0.064146739	0.028974404	1.000000000
14	Enrg_GenLevel-L2	WPA6F1-2	Generation Level Energy	0.843931866	0.072619681	0.083448453	1.000000000
15	Enrg_GenLevel_Trans-L2	WPA6F1-2	Generation Level Energy adjusted as required to allocate transmission costs	0.892333626	0.076784615	0.030881759	1.000000000
16	Enrg_CustLevel-L2	WPA6F1-2	Customer Level Energy (Sales)	0.836882448	0.074692466	0.088425087	1.000000000
17	Enrg_Decom-L2	WPA6F1-2	Jurisdictional Split for Decommissioning items	0.872162059	0.057333220	0.070504721	1.000000000
18	Cust_Accounts-L2	WPA6F1-2	Number of Customer Accounts	0.975466885	0.024505514	0.000027601	1.000000000
19	Cust_Accounts_Res-L2	WPA6F1-2	Number of Residential Customers	0.975466885	0.024505514	0.000027601	1.000000000
20	Cust_Accounts_Retail-L2	WPA6F1-2	Number of Customers Excluding FERC	0.975493810	0.024506190	0.000000000	1.000000000
21	Cust_Accting-L2	WPA6F1-4	Specifically derived from budget information to allocate Customer Accounting Costs	0.971916265	0.028055613	0.000028122	1.000000000
22	Cust_CS.Exp-L2	WPA6F1-4	Specifically derived from budget information to allocate Customer Service Expenses	0.978522575	0.021449907	0.000027518	1.000000000
23	Cust_Misc_Services-L2	WPA6F1-5	Other Electric Miscellaneous Services	0.960822723	0.039177277	0.000000000	1.000000000
24	Cust_Pole_Rental-L2	WPA6F1-5	Other Electric Pole Rental	0.963860370	0.036139630	0.000000000	1.000000000
25	Revn_Booked-L2	Exhibit A6F3	Booked Sales Revenue	0.895504446	0.044862833	0.059632721	1.000000000
26	PS_DIST.SUBSTA.DA-L2	WPA6F1-3	Reflects WI/MI Split per Plant Accounting with allocation to FERC on NCP	0.956508396	0.035174220	0.008317384	1.000000000
27	PS_DIST.OVERHD.DA-L2	WPA6F1-3	Reflects WI/MI Split per Plant Accounting with allocation to FERC on NCP	0.946492688	0.051626818	0.001880495	1.000000000
28	PS_DIST.UNDRGD.DA-L2	WPA6F1-3	Reflects WI/MI Split per Plant Accounting	0.973426373	0.026288742	0.000284885	1.000000000
29	PS_DIST.TRANSF.CAPACITORS-L2	WPA6F1-3	Reflects WI/MI Split per Plant Accounting with allocation to FERC on NCP	0.990471229	0.008791061	0.000737710	1.000000000
30	PS_DIST.TRANSF.LINES.TRANS-L2	WPA6F1-3	Reflects WI/MI Split per Plant Accounting	0.968446286	0.031553714	0.000000000	1.000000000
31	PS_DIST.TRANSF.REGULATORS-L2	WPA6F1-3	Reflects WI/MI Split per Plant Accounting with allocation to FERC on NCP	0.964866279	0.034174114	0.000959608	1.000000000
32	PS_DIST.SERVCS-L2	WPA6F1-3	Reflects WI/MI Split per Plant Accounting	0.954375802	0.045624198	0.000000000	1.000000000
33	PS_DIST.METERS-L2	WPA6F1-3	Reflects WI/MI Split per Plant Accounting	0.976578336	0.021533027	0.001888637	1.000000000
34	PS_DIST.INCUSTP-L2	WPA6F1-3	Reflects WI/MI Split per Plant Accounting	0.962856035	0.037143965	0.000000000	1.000000000
35	PS_DIST.STLIGHT-L2	WPA6F1-3	Reflects WI/MI Split per Plant Accounting	0.972224415	0.027775585	0.000000000	1.000000000
36	Cust_Rv_Fordis-L2	WPA6F1-4	Reflects WI/MI split	0.977786486	0.022213514	0.000000000	1.000000000
37	OM_PSCW-L2	WPA6F1-4	Derived from Historical Data for FERC Acct 928 in Exhibit___(EAR-5)	0.843530861	0.094299592	0.062169547	1.000000000
38	OM_TRANS_WISC-L2	WPA6F1-2	ATC Costs for Wisconsin	0.911727267	0.059934114	0.028338619	1.000000000
39	OM_TRANS_FERC-L2	WPA6F1-2	ATC Costs for FERC	0.911727267	0.059934114	0.028338619	1.000000000
40	Cust_Uncollect-L2	WPA6F1-4	Split of uncollectibles by jurisdiction	0.992237999	0.007762001	0.	1.000000000
41	Dmnd_12CP_NonFirm-L2	WPA6F1-2	Average of the 12 monthly Coincident Demands of Nonfirm Load	0.484857002	0.515142998	0.000000000	1.000000000
42	Dmnd_12CP_Firm-L2	WPA6F1-2	Average of the 12 monthly Coincident Demands of firm Load	0.903022973	0.020854409	0.076122618	1.000000000
43	OM_DIST.SUBSTA1-L2	WPA6F1-1d	Distribution O&M Allocators	0.955426178	0.036064407	0.008509414	1.000000000
44	OM_DIST.OVERHD1-L2	WPA6F1-1d	Distribution O&M Allocators	0.938914634	0.059074597	0.002010769	1.000000000
45	OM_DIST.UNDERGND1-L2	WPA6F1-1d	Distribution O&M Allocators	0.940384308	0.059338301	0.000277391	1.000000000
46	OM_DIST.TRAN1-L2	WPA6F1-1d	Distribution O&M Allocators	0.95	0.05	0	1.000000000
47	OM_DIST.MET1-L2	WPA6F1-1d	Distribution O&M Allocators	0.954754592	0.043017339	0.002228068	1.000000000
48	OM_DIST.CUSTINST1-L2	WPA6F1-1d	Distribution O&M Allocators	1	0	0	1.000000000
49	OM_DIST.STRLIT1-L2	WPA6F1-1d	Distribution O&M Allocators	0.969384022	0.030615978	0	1.000000000
50	OM_DIST.DISP1-L2	WPA6F1-1d	Distribution O&M Allocators	0.894700616	0.042953138	0.062346246	1.000000000
51	OM_DIST.SUPENG1-L2	WPA6F1-1d	Distribution O&M Allocators	0.970343415	0.029656585	0	1.000000000
52	OM_DIST.OTH1-L2	WPA6F1-1d	Distribution O&M Allocators	0.973603638	0.026396362	0	1.000000000
53	Enrg_OnPeak_GenLevel-L2	WPA6F1-2	On Peak Energy	0.85253286	0.063957046	0.083510094	1.000000000
54	Enrg_OffPeak_GenLevel-L2	WPA6F1-2	Off Peak Energy	0.838121205	0.078471985	0.08340681	1.000000000
55	Cust_Sales.Exp-L2	WPA6F1-4	Sales Expenses	0.956141354	0.043858646	0	1.000000000
56	Deferred_Charges-L2	Derived from Exhibit A-9 Sched B4	Includes adjustment for deferred charges (Not used in Part I)	0.796638042	0.15031287	0.053049088	1.000000000
57	PBNP_Gain-L2	Report in U-15220	Gain on Sale of PBNP	0.781293164	0.090600348	0.128106488	1.000000000
58	Other_Assets-L2	Derived from Exhibit A-9 Sched B4	Includes adjustment for other assets (Not used in Part III)	0.737231156	0.213675732	0.049093112	1.000000000

Case No. U-15981
Part I WPA6F1-2a
Class Load Work Paper
Page 1 of 1
Witness: E. A. Rogers
Date: July 2009

ALLOCATORS - MICHIGAN RETAIL
Generation Level

Unadjusted

AVG 12 CP (KW)	2003 CLA	2004 CLA	2005 CLA	2006 CLA	2007 CLA	5 Year Average	Use For Test Year 2010
Residential & Farm Flat	28,035	24,661	26,296	27,542	30,483	27,403	27,646
Residential Time of Use	1,572	1,299	1,228	1,134	1,242	1,295	1,040
Gen Sec Flat	12,984	13,386	13,430	13,598	12,768	13,233	13,813
Gen Sec Small TOU	1,920	2,028	1,828	1,901	2,046	1,945	1,452
Total Small Customer Group	44,511	41,374	42,782	44,175	46,539	43,876	43,951
Gen Sec Large TOU	9,614	9,669	10,125	10,407	10,706	10,104	9,528
Gen Pri Cp1 Low & Med Voltage	7,374	3,699	3,265	3,161	2,978	4,095	3,227
Gen Pri Cp3 Med Voltage	6,861	10,023	10,108	8,992	9,726	9,142	8,003
Gen Pri Cp3 High Voltage	0	0	0	0	0	0	0
Schedule A	32,154	30,249	33,458	33,698	33,565	32,625	29,934
Total Large ex Mines & SC	56,003	53,640	56,956	56,258	56,975	55,966	50,692
Mines	275,347	264,206	262,163	222,472	239,400	252,718	166,496
White Pine Spec Contract	4,309	3,388	4,104	5,234	5,554	4,518	3,849
Total Large Customer Group	335,659	321,234	323,223	283,964	301,929	313,202	221,037
Street Lighting & Other	353	281	281	300	358	315	346
TOTAL	380,523	362,889	366,286	328,439	348,826	357,393	265,334

NON-COINCIDENT DEMAND (KW)	2003 CLA	2004 CLA	2005 CLA	2006 CLA	2007 CLA	5 Year Average	Use For Test Year 2010	Stand-by Demand TY2010
Residential & Farm Flat	38,751	42,357	39,052	38,423	39,933	39,703	40,055	
Residential Time of Use	2,482	2,858	1,453	1,505	2,172	2,094	1,682	
Gen Sec Flat	22,581	20,653	23,722	21,552	22,417	22,185	23,157	
Gen Sec Small TOU	1,795	1,655	1,862	1,541	1,617	1,694	1,265	
Total Small Customer Group	65,609	67,523	66,089	63,021	66,139	65,676	66,159	
Gen Sec Large TOU	9,919	10,088	12,840	10,134	8,656	10,327	9,739	
Gen Pri Cp1 Low & Med Voltage	7,854	1,673	1,679	2,812	3,371	3,478	2,741	
Gen Pri Cp3 Med Voltage	6,105	8,450	10,250	9,698	9,964	8,893	7,785	
Gen Pri Cp3 High Voltage	0	0	0	0	0	0	0	
Schedule A	37,245	33,547	38,458	30,704	60,238	40,038	36,736	26,000
Total Large ex Mines & SC	61,123	53,758	63,227	53,348	82,229	62,737	57,001	
Mines	312,523	320,434	313,287	292,987	280,898	304,026	200,299	
White Pine Spec Contract	4,042	4,388	4,508	5,087	5,663	4,738	4,037	
Total Large Customer Group	377,688	378,580	381,022	351,422	368,790	371,500	261,337	
Street Lighting & Other	1,246	1,137	1,235	1,151	1,179	1,190	1,310	
TOTAL	444,543	447,240	448,346	415,594	436,108	438,366	328,806	

GENERATION ENERGY (MWH)	2003 CLA	2004 CLA	2005 CLA	2006 CLA	2007 CLA	5 Year Average	Use For Test Year 2010	Ave Loss Factor	Customer Level Energy Based on TY2010 Forecast
Residential & Farm Flat	177,742	171,768	171,450	169,927	176,810	173,539	175,078	1.08965	160,674
Residential Time of Use	10,228	9,325	8,481	7,915	7,781	8,746	7,025	1.09396	6,422
Gen Sec Flat	79,913	77,376	81,607	81,173	76,556	79,325	82,802	1.08073	76,617
Gen Sec Small TOU	12,765	14,598	12,500	13,260	12,888	13,202	9,858	1.08073	9,122
Total Small Customer Group	280,648	273,067	274,038	272,275	274,035	274,813	274,763		252,835
Gen Sec Large TOU	68,102	68,289	71,100	72,411	74,955	70,971	66,926	1.07498	62,258
Gen Pri Cp1 Low & Med Voltage	54,048	24,457	23,305	22,210	21,601	29,124	22,952	1.04267	22,013
Gen Pri Cp3 Med Voltage	55,956	83,297	82,077	77,057	80,836	75,845	66,392	1.04267	63,675
Gen Pri Cp3 High Voltage	0	0	0	0	0	0	0		
Schedule A	285,038	269,917	294,805	298,743	298,138	289,328	265,465	1.02053	260,125
Total Large ex Mines & SC	463,144	445,960	471,287	470,421	475,530	465,268	421,735		
Mines	2,264,283	2,383,481	2,337,192	2,021,269	2,116,457	2,224,536	1,465,573	1.02053	1,436,090
White Pine Spec Contract	35,437	29,587	37,900	45,877	49,133	39,587	33,730	1.02053	33,051
Total Large Customer Group	2,762,864	2,859,028	2,846,379	2,537,567	2,641,120	2,729,392	1,921,038		1,877,212
Street Lighting & Other	3,450	3,367	3,327	3,341	3,319	3,361	3,700	1.08485	3,411
TOTAL	3,046,962	3,135,462	3,123,744	2,813,183	2,918,474	3,007,565	2,199,501		2,133,458

NUMBER OF CUSTOMERS	2003 CLA	2004 CLA	2005 CLA	2006 CLA	2007 CLA	5 Year Average	Total Customers from TY2010 Forecast
Residential & Farm Flat	23,219	23,409	23,547	23,657	23,755	23,517	23,973
Residential Time of Use	674	637	612	581	540	609	491
Gen Sec Flat	2,678	2,688	2,740	2,693	2,704	2,701	2,700
Gen Sec Small TOU	152	146	119	171	193	156	198
Total Small Customer Group	26,723	26,880	27,018	27,102	27,192	26,983	27,362
Gen Sec Large TOU	66	72	71	72	76	71	76
Gen Pri Cp1 Low & Med Voltage	7	6	5	5	5	6	5
Gen Pri Cp3 Med Voltage	1	2	2	2	2	2	2
Gen Pri Cp3 High Voltage	0	0	0	0	0	0	0
Schedule A	1	1	1	1	1	1	1
Total Large ex Mines & SC	75	81	79	80	84	80	84
Mines	2	2	2	2	2	2	2
White Pine Spec Contract	1	1	1	1	1	1	1
Total Large Customer Group	78	84	82	83	87	83	87
Street Lighting & Other	NA	NA	NA	NA	NA	NA	74
TOTAL	26,867	27,036	27,171	27,257	27,355	27,137	27,523

Case No. U-15981
Part I WPA6F1-2b
Class Load Work Paper
Page 1 of 1
Witness: E. A. Rogers
Date: July 2009

ALLOCATORS - WISCONSIN RETAIL
Generation Level

Unadjusted

AVG 12 CP (KW)	2003 CLA	2004 CLA	2005 CLA	2006 CLA	2007 CLA	5 Year CLA Average	Use For Test Year 2010
Residential & Farm Flat (Rg1 & Fg1)	1,359,577	1,310,938	1,516,483	1,484,485	1,620,805	1,458,458	1,497,221
Residential Time of Use (Rg2 & Rg3)	72,334	64,316	67,532	63,400	67,622	67,041	57,728
Gen Sec Flat (Cg1)	383,047	375,895	387,466	388,032	392,705	385,429	311,649
Gen Sec Small TOU (Cg6)	12,731	11,887	14,960	14,924	15,208	13,942	12,425
Total Small Customer Group	1,827,689	1,763,036	1,986,441	1,950,841	2,096,340	1,924,869	1,879,023
Gen Sec Flat Demand (Cg2)	178,352	189,912	197,585	195,426	210,422	194,339	244,466
Total Medium Customer Group	178,352	189,912	197,585	195,426	210,422	194,339	244,466
Gen Sec Large TOU (Cg3)	882,797	935,169	929,655	924,700	939,752	922,415	857,371
Gen Pri Low Voltage	49,724	48,567	49,129	47,942	45,910	48,254	42,364
Gen Pri Med Voltage	1,092,214	1,136,571	1,130,535	1,082,873	1,085,873	1,105,613	941,872
Gen Pri High Voltage	43,468	46,361	47,213	46,333	48,166	46,308	49,816
Total Large Customer Group	2,068,203	2,166,668	2,156,532	2,101,848	2,119,701	2,122,590	1,891,423
Street Lighting & Other	24,022	19,791	18,137	18,966	21,365	20,456	21,391
TOTAL	4,098,266	4,139,407	4,358,695	4,267,081	4,447,828	4,262,255	4,036,303

NON-COINCIDENT DEMAND (KW)	2003 CLA	2004 CLA	2005 CLA	2006 CLA	2007 CLA	5 Year Average	Use For Test Year 2010
Residential & Farm Flat (Rg1 & Fg1)	2,209,122	2,039,315	2,506,112	2,629,077	2,424,430	2,361,611	2,424,380
Residential Time of Use (Rg2 & Rg3)	92,618	78,532	98,066	95,391	99,517	92,825	79,930
Gen Sec Flat (Cg1)	483,483	389,730	406,959	502,521	431,387	442,816	358,050
Gen Sec Small TOU (Cg6)	14,988	14,752	20,136	20,175	19,500	17,910	15,962
Total Small Customer Group	2,800,211	2,522,329	3,031,273	3,247,164	2,974,834	2,915,162	2,878,322
Gen Sec Flat Demand (Cg2)	248,030	236,375	264,055	251,683	304,724	260,973	328,287
Total Medium Customer Group	248,030	236,375	264,055	251,683	304,724	260,973	328,287
Gen Sec Large TOU (Cg3)	1,161,871	1,171,073	1,217,374	1,211,438	1,227,290	1,197,809	1,113,346
Gen Pri Low Voltage	56,327	52,638	52,628	54,657	48,516	52,953	46,490
Gen Pri Med Voltage	1,294,935	1,291,183	1,306,304	1,273,784	1,276,035	1,288,448	1,097,630
Gen Pri High Voltage	50,043	45,390	22,228	51,134	50,602	43,879	47,203
Total Large Customer Group	2,563,176	2,560,284	2,598,534	2,591,013	2,602,443	2,583,090	2,304,669
Street Lighting & Other	65,434	68,531	62,038	57,310	58,885	62,440	65,292
TOTAL	5,676,851	5,387,519	5,955,900	6,147,170	5,940,886	5,821,665	5,576,570

GENERATION ENERGY (MWH)	2003 CLA	2004 CLA	2005 CLA	2006 CLA	2007 CLA	5 Year Average	Use For Test Year 2010	Ave Loss Factor	Customer Level Energy Based on TY2010 Forecast
Residential & Farm Flat (Rg1 & Fg1)	7,914,808	7,933,906	8,483,901	8,252,733	8,538,287	8,224,727	8,443,329	1.08812	7,759,557
Residential Time of Use (Rg2 & Rg3)	471,894	460,566	461,081	435,883	429,322	451,749	388,995	1.09671	354,693
Gen Sec Flat (Cg1)	2,138,157	2,112,555	2,198,812	2,230,375	2,290,193	2,194,018	1,774,030	1.08659	1,632,658
Gen Sec Small TOU (Cg6)	83,241	85,917	102,721	104,551	95,075	94,301	84,041	1.08659	77,344
Total Small Customer Group	10,608,100	10,592,944	11,246,515	11,023,542	11,352,877	10,964,796	10,690,395		9,824,252
Gen Sec Flat Demand (Cg2)	1,079,480	1,114,953	1,169,620	1,189,060	1,292,732	1,169,169	1,470,738	1.08684	1,353,224
Total Medium Customer Group	1,079,480	1,114,953	1,169,620	1,189,060	1,292,732	1,169,169	1,470,738		1,353,224
Gen Sec Large TOU (Cg3)	5,675,588	5,808,481	6,017,510	5,926,420	6,080,890	5,901,778	5,485,615	1.07924	5,082,850
Gen Pri Low Voltage	340,810	327,857	333,948	331,284	323,870	331,554	291,084	1.05069	277,041
Gen Pri Med Voltage	8,090,691	8,247,026	8,271,071	8,079,659	8,054,638	8,148,617	6,941,810	1.03433	6,711,408
Gen Pri High Voltage	414,257	448,856	442,612	442,530	447,339	439,119	472,381	1.02052	462,882
Total Large Customer Group	14,521,346	14,832,220	15,065,141	14,779,893	14,906,737	14,821,067	13,190,890		12,534,181
Street Lighting & Other	209,542	210,366	194,950	193,076	191,124	199,812	208,940	1.08592	192,408
TOTAL	26,418,468	26,750,483	27,676,226	27,185,571	27,743,470	27,154,844	25,560,963		23,904,065

NUMBER OF CUSTOMERS	2003 CLA	2004 CLA	2005 CLA	2006 CLA	2007 CLA	5 Year Average	Total Customers from TY2010 Forecast
Residential & Farm Flat (Rg1 & Fg1)	901,500	913,922	925,402	934,643	941,949	923,483	957,216
Residential Time of Use (Rg2 & Rg3)	29,840	29,342	28,642	28,214	26,726	28,553	23,989
Gen Sec Flat (Cg1)	86,262	87,250	88,581	90,239	92,913	89,049	93,844
Gen Sec Small TOU (Cg6)	2,158	2,245	2,553	2,617	2,521	2,419	2,511
Total Small Customer Group	1,019,760	1,032,759	1,045,178	1,055,713	1,064,109	1,043,504	1,077,560
Gen Sec Flat Demand (Cg2)	5,579	5,643	5,729	5,837	5,359	5,629	9,109
Total Medium Customer Group	5,579	5,643	5,729	5,837	5,359	5,629	9,109
Gen Sec Large TOU (Cg3)	6,070	6,178	6,264	6,145	5,985	6,128	6,054
Gen Pri Low Voltage	66	65	63	62	60	63	55
Gen Pri Med Voltage	621	620	620	619	623	621	628
Gen Pri High Voltage	5	6	6	6	7	6	6
Total Large Customer Group	6,762	6,869	6,953	6,832	6,675	6,818	6,743
Street Lighting & Other	NA	NA	NA	NA	NA	NA	2,169
TOTAL	1,032,101	1,045,271	1,057,860	1,068,382	1,076,143	1,055,951	1,095,581

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Class Load Work Paper
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Witness: E. A. Rogers
Date: July 2009

ALLOCATORS - FERC
Generation Level

Unadjusted

AVG 12 CP (KW)	2003 CLA	2004 CLA	2005 CLA	2006 CLA	2007 CLA	5 Year Average	Use For Test Year 2010
WPPI	217,909	246,421	492,091	543,989	250,000	350,082	200,833
GLU							41,667
Wisconsin Total (Non-WPPI)							41,667
Edison Sault							76,134
Alger Delta					4,709		4,413
Crystal Falls					2,813		2,595
Ontonogon					753		649
Michigan Total (Non-ESE)	9,314	8,133	8,985	8,873	8,275	8,716	7,657
TOTAL	227,223	254,554	501,076	552,862	258,275	358,798	326,291

NON-COINCIDENT DEMAND (KW)	2003 CLA	2004 CLA	2005 CLA	2006 CLA	2007 CLA	5 Year Average	Use For Test Year 2010
WPPI	336,057	482,804	674,190	669,993	250,000	482,609	200,833
GLU							41,667
Wisconsin Total (Non-WPPI)							41,667
Edison Sault							76,134
Alger Delta					6,334		5,936
Crystal Falls					3,783		3,491
Ontonogon					1,013		873
Michigan Total (Non-ESE)	12,362	11,496	13,245	12,639	11,131	12,175	10,300
TOTAL	348,419	494,300	687,435	682,632	261,131	494,783	328,934

GENERATION ENERGY (MWH)	2003 CLA	2004 CLA	2005 CLA	2006 CLA	2007 CLA	5 Year Average	Use For Test Year 2010	Ave Loss Factor	Customer Level Energy Based on TY2010 Forecast
WPPI	1,369,124	1,708,976	3,372,108	3,372,108	4,106,985	2,785,860	1,642,872	1.00000	1,642,872
GLU							257,184	1.00000	257,184
Wisconsin Total (Non-WPPI)							257,184		257,184
Edison Sault							584,022	1.00000	584,022
Alger Delta					26,694		25,014	1.04267	23,990
Crystal Falls					15,944		14,711	1.04267	14,109
Ontonogon					4,270		3,680	1.04267	3,529
Michigan Total (Non-ESE)	55,677	51,713	54,229	53,815	46,907	52,468	43,404	1.04267	41,628
TOTAL	1,424,801	1,760,689	3,426,337	3,425,923	4,153,892		2,527,482		2,525,706

NUMBER OF CUSTOMERS	2003 CLA	2004 CLA	2005 CLA	2006 CLA	2007 CLA	5 Year Average	Use For Test Year 2010
WPPI	21	21	21	21	21	21	21
GLU							1
Wisconsin Total (Non-WPPI)							1
Edison Sault					1	1	1
Alger Delta	5	5	5	5	5	5	5
Crystal Falls	1	1	1	1	1	1	1
Ontonogon	2	2	2	2	2	2	2
Michigan Total (Non-ESE)	8	8	8	8	8	8	8
TOTAL	29	29	29	29	29	29	31

BEFORE THE
PUBLIC SERVICE COMMISSION OF WISCONSIN

Joint Application of Wisconsin Electric Power Company and Wisconsin Gas LLC, both d/b/a We Energies, for Wisconsin Electric Power Company to Increase Its Electric, Natural Gas, and Steam Rates and for Wisconsin Gas LLC to Increase its Natural Gas Rates	Docket No. 05-UR-104

DIRECT TESTIMONY OF JOEL R. GAUGHAN
ON BEHALF OF WISCONSIN ELECTRIC POWER COMPANY

Q. Will you please state your name and business address?

A. Joel R. Gaughan, We Energies, 231 West Michigan Street, Milwaukee, Wisconsin, 53203. I am a Senior Project Specialist on the Forecasting Team in the Finance Department.

Q. Please describe your educational and business experience.

A. I have a Bachelor of Science Degree in Economics from the University of Wisconsin - Madison and a Master of Science Degree in Economics from the University of Illinois at Urbana - Champaign. I was employed in the Information Systems Department of Wisconsin Gas Company from January 1986 to May 1989, specializing in statistical analysis and planning model support. In May 1989, I was hired by the Wisconsin Electric Power Company where my responsibilities have included various aspects of the development of long-term and short-term forecasts. I testified before the Public Service Commission of Wisconsin in the Advance Plan 8 docket, in the second phase of the Power the Future docket, in the Blue Sky Green Field Wind Project docket, and in the Test Year 2006 and 2008 rate cases.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to support the development of We Energies' electric sales forecast for the 2010 Test Year.

Q. When was the forecast prepared?

A. The forecast used in this docket was finalized in January 2009. Billed sales data through 2007 and parts of 2008 (through May for Commercial and Industrial, through October for Residential and Farm) were used to develop the billing month sector forecasts. Booked sales by rate class and jurisdiction through December 2007 were used to develop the booked sales forecast, and output and peak demand data through July 2008 were used to develop the peak demand forecast.

Q. Is this approach consistent with the way in which the Company has prepared forecasts offered in other PSCW proceedings?

A. Yes, it is.

Q. What forecasting techniques did you use to develop your forecasts?

A. As in other proceedings, we used a combination of two statistical approaches, generically described as econometric modeling and time-series modeling.

Q. Please briefly describe econometric modeling.

A. Econometric modeling involves quantification of historical relationships between the output variables that we want to forecast, such as billed sales, and economic or demographic input variables, like industrial production, employment, and population. Additional variables may also be added to econometric model specifications to represent weather conditions and other factors affecting electric consumption. A statistical procedure called multiple regression analysis is used to

quantify the historical relationships between the input variables and the output variables. Once the relationships are quantified, we can use forecasts of the input variables to forecast values of the output variable.

Q. What is time-series modeling?

A. Time-series modeling essentially directly examines patterns or trends in the historic data such as billed sales to aid the forecast of future values.

Q. What are the basic components of the sales forecast?

A. The basic components of the total sales forecast are "billed" energy in the residential, farm, commercial, industrial, street lighting and other retail, and municipal sectors. The adjective "billed" refers to the fact that, at this stage in the analysis, we are working with sales data from customers whose bills go out on various cycles that do not generally correspond to calendar months and so the 'billed" sales data and the billed sales forecast do not correspond to calendar months. Based on recent historical relationships, the billed forecasts are broken down by rate schedule.

The billed forecasts are subsequently converted to booked (or calendar month) forecasts by estimating amounts of unbilled energy (energy consumed in the current calendar month but billed in a different month). These booked or calendar month forecasts, totaled over a calendar year, are the forecasts which are shown in Exhibit 9 (JRG) which consists of two schedules. Schedule 1 provides the electric sales forecasts for 2009 and 2010 for the entire Wisconsin Electric system by major rate class and compares those forecasts with actual 2008 sales. Schedule 2

provides similar information as Schedule 1, but for the Wisconsin jurisdiction only.

By applying loss factors to the booked forecasts and adding energy expected to be used by the company itself and for wholesale sales, the forecast of total generation-level energy requirements is obtained. Using the forecast of total generation-level energy requirements as an input, the process is completed with the projection of system peak demand.

Q. How was the forecast of residential sales developed?

A. The Residential forecast is developed using a projection of monthly usage per customer combined with a separate forecast of the number of customers. The drivers for residential usage per customer are weather and a time trend variable[1]. .The forecast of the number of customers in the residential sector is based on county-level forecasts for Wisconsin electric's service territory of housing stock and is benchmarked to historical billing system data.

Q. How was the forecast for sales to the General Secondary and General Primary rate classes in Wisconsin developed?

A. Commercial and Industrial forecasts combine to produce the forecasts for the General Secondary and General Primary rate classes. The Commercial and Industrial forecasts are developed for segments determined by groupings of building types (e.g. Retail, Office) and industries (e.g. Paper Manufacturing,

1 The time trend variable is used to account for the fact that a certain amount of change in usage per customer is correlated with the mere passage of time. In other words, leaving aside the other explicit drivers, usage changes as years pass. No doubt there are various forces causing that, but it is too difficult to identify and quantify them individually. Mere passage of time is a workable proxy.

Mining). Electricity consumption for the nine building type groupings in the commercial forecast is assumed to depend upon weather, Wisconsin employment in those sectors, and billing cycles per billing month. Electricity consumption in the fifteen industry groupings in the industrial forecast is modeled by statistically quantifying the relationship between our sales to those groups and a national index of manufacturing output. Explicit individual forecasts are developed for approximately 35 of the largest of these industrial customers for whom customer-specific growth feedback is available.

Q. How do the levels of activity in the national and local economies affect the sales to commercial and manufacturing customers?

A. The output of the local manufacturing sector is dependent upon the national and international demand for manufactured goods, and therefore, electricity sales to these customers will follow the same general trends as the national manufacturing sector. In recent years, however, several of our largest industrial customers have either significantly reduced their production levels or shut down completely. Until recovery is detected in the affected sectors, sales in the industrial sector in our service territory are expected to be weak. The demand for commercial services, and hence energy sales to commercial customers, is affected by economic conditions as well, but on a somewhat more local basis. State level employment in the various business types among which we classify commercial customers is consequently used to drive the commercial forecast.

Q. Please briefly describe your assumptions for the national and state economies through the year 2010.

A. The economic data used in the development of this forecast were developed in November 2008 by Moody's Economy.com (MEDC), an international vendor of economic data and forecasts. A summary of that forecast is provided in Table 1 below.

Table 1

Expected Growth Rates

	2007	2008	2009	2010
US Real Gross Domestic Product	2.0%	1.4%	0.0%	3.5%
US Manufacturing Industrial Production	1.8%	-1.0%	-0.2%	2.6%
WI Nonmanufacturing Employment	0.9%	-0.2%	-1.0%	0.0%

Source: Moody's Economy.com November 2008 forecast

National economic activity as measured by real Gross Domestic Product (GDP) is expected to be flat in 2009 before rising approximately 3.5% in 2010. Industrial production in the nation's manufacturing sector is expected to decrease slightly in 2009 before rising by about 2.6% in 2010. Nonmanufacturing employment at the state level is expected to decrease by about 1.0% in 2009 and remain at approximately the same level in 2010.

Q. Has the economic outlook for the United States and the state of Wisconsin changed materially since your sales forecast was developed?

A. Yes. The economic downturn the state and the nation are presently experiencing is now expected to be deeper, and recovery is now expected to begin later and to be less robust. Table 2 summarizes MEDC's January 2009 forecast.

Table 2

Expected Growth Rates

	2007	2008	2009	2010
US Real Gross Domestic Product	2.0%	1.2%	-1.7%	2.0%
US Manufacturing Industrial Production	1.8%	-1.5%	-1.4%	2.1%
WI Nonmanufacturing Employment	0.9%	-0.4%	-2.4%	-0.6%

Source: Moody's Economy.com January 2009 forecast

Q. How would your sales forecast change if you were to use the newer economic data?

A. We have not quantified the differences, but the correlation between our sales and the economic variables which drive it strongly implies that our forecast would be substantially lower if we were to use the newer, and more pessimistic, economic forecast.

Q. You have explained how you construct your sales forecast. At a high level, how do your forecasts for the major retail rate classes compare with recent historical results?

A. As can be seen in Exhibit 10 (JRG), weather normalized sales in the Residential rate class have been growing slowly over the last few years. The forecast calls for growth to continue, but at a diminished rate. Sales in the General Secondary rate class, which consists of small commercial and industrial customers, grew from 2006 to 2007, but fell back in 2008. The forecast calls for a further decrease in 2009 and essentially no growth in 2010. In the General Primary rate class, which consists of large commercial and industrial customers, sales have decreased in

recent years. As is the case in the General Secondary class, the forecast calls for a further decrease in 2009 and essentially no growth in 2010.

Q. Would you now indicate what your forecast shows, beginning with Wisconsin residential sales?

A. In 2009, Wisconsin residential sales are expected to be 8,049.8 GWh, which represents a 2.2 percent increase over actual 2008 sales, but is basically flat on a weather normalized basis. In 2010, Wisconsin residential sales are expected to be 8,062.6 GWh, a 0.2 percent increase over expected 2009 sales

Q. What is the forecast of sales to the General Secondary and General Primary rate classes in Wisconsin?

A. In 2009, Wisconsin General Secondary sales to small commercial and industrial customers are expected to be 8,579.1 GWh. This represents a 3.2 percent decrease over actual 2008 sales or a 3.1 percent decrease on a weather normalized basis. In 2010, Wisconsin General Secondary sales are expected to be 8,577.4 GWh, basically flat compared to expected 2009 sales.

In 2009, Wisconsin General Primary sales to large commercial and industrial customers are expected to be 7,840.8 GWh, approximately 4.3 percent below 2008 actual sales and 4.5 percent below 2008 weather normalized sales. In 2010, Wisconsin General Primary sales are expected to be 7,828.9 GWh, a 0.2 percent decrease over the 2009 forecast.

Q. Briefly describe the other forecasts shown on Schedule 2.

A. The farm energy forecast was developed in a manner similar to that used to develop the residential sector energy forecast and reflects the historical trend of

flat or slowly decreasing energy sales. Sales to farm sector customers in Wisconsin are expected to be 224.5 GWh in 2010, or about 1.5 percent less than in 2008, on a weather normalized basis. Sales to the Street Lighting and Other Retail rate class vary little from year to year. The forecast for that sector is based upon actual usage in 2006, and Wisconsin sales in 2010 are expected to be 161.1 GWh. Energy consumption by municipal wholesale customers is based upon historical trends, as well as contract terms and lengths. Wisconsin municipal sales in 2010 are expected to be 1,900.1 GWh, or about 7.7 percent lower than projected 2009 sales. This reflects an expected decrease in sales to one consortium of municipal customers, partially offset by an expected increase in sales to another

Q. Does this conclude your direct testimony?

A. Yes, it does.

WISCONSIN ELECTRIC POWER Co.
Electric Utility - Calendar Sales
Total System

Rate Class	2008 Actual (MWH)	2009 Forecast (MWH)	2010 Test Year (MWH)	2008/07 Actual Growth	2009/08 Forecast Growth	2010/09 Test Year Growth
Residential	8,048,987	8,226,374	8,240,093	-1.6%	2.2%	0.2%
Farm	228,097	228,256	224,456	-2.4%	0.1%	-1.7%
General Secondary	9,023,733	8,732,554	8,731,008	-1.8%	-3.2%	0.0%
General Primary	10,691,694	9,928,700	9,555,211	-3.1%	-7.1%	-3.8%
Other Retail	161,447	163,420	163,420	-0.6%	1.2%	0.0%
Total Retail (Ultimate)	28,153,958	27,279,304	26,914,188	-2.2%	-3.1%	-1.3%
Wholesale (Municipal) (1)	2,620,728	2,684,034	2,525,706	8.0%	2.4%	-5.9%
Total Retail plus Wholesale	30,774,686	29,963,338	29,439,894	-1.4%	-2.6%	-1.7%

(1) WE sales to Edison Sault included in 2007 data for comparability with 2008 data.

Wisconsin Electric Power Company and
Wisconsin Gas LLC
Docket No. 05-UR-104
Exhibit 9 (JRG)
Schedule 2 of 2
Joel R. Gaughan
March, 2009

WISCONSIN ELECTRIC POWER Co.
Electric Utility - Calendar Sales
Wisconsin Only

Rate Class	2008 Actual (MWH)	2009 Forecast (MWH)	2010 Test Year (MWH)	2008/07 Actual Growth	2009/08 Forecast Growth	2010/09 Test Year Growth
Residential	7,879,095	8,049,764	8,062,630	-1.7%	2.2%	0.2%
Farm	228,097	228,256	224,456	-2.4%	0.1%	-1.7%
General Secondary	8,866,583	8,579,138	8,577,399	-1.8%	-3.2%	0.0%
General Primary	8,190,966	7,840,838	7,828,892	-3.9%	-4.3%	-0.2%
Other Retail	158,941	161,060	161,060	-0.6%	1.3%	0.0%
Total Retail (Ultimate)	25,323,682	24,859,056	24,854,437	-2.4%	-1.8%	0.0%
Wholesale (Municipal)	2,002,791	2,058,648	1,900,056	5.8%	2.8%	-7.7%
Total Retail plus Wholesale	27,326,473	26,917,704	26,754,493	-1.9%	-1.5%	-0.6%

BEFORE THE
PUBLIC SERVICE COMMISSION OF WISCONSIN

Joint Application of Wisconsin Electric Power Company and Wisconsin Gas LLC, both d/b/a We Energies, for Wisconsin Electric Power Company to Increase Its Electric, Natural Gas, and Steam Rates and for Wisconsin Gas LLC to Increase its Natural Gas Rates	Docket No. 05-UR-104

SUPPLEMENTAL DIRECT TESTIMONY OF JOEL R. GAUGHAN
ON BEHALF OF WISCONSIN ELECTRIC POWER COMPANY

Q. Will you please state your name and business address?

A. Joel R. Gaughan, 231 West Michigan Street, Milwaukee, Wisconsin, 53203. I am a Senior Project Specialist on the Forecasting Team in the Finance Department for Wisconsin Electric Power Company.

Q. Did you previously provide direct testimony in this proceeding?

A. Yes.

Q. What is the purpose of your supplemental direct testimony?

A. The purpose of my supplemental direct testimony is to introduce revisions to Wisconsin Electric's forecast of electric sales for the 2010 Test Year.

Q. What necessitated these changes?

A. The original electric sales forecast, which was filed earlier in this proceeding, was finalized in December 2008, based on data available in fall 2008. September 2008 saw the beginning of unprecedented (in recent memory) changes in the economy. It was impossible to reflect the impact of these changes into the forecast. Since December 2008, the economy has continued to contract and the outlook for 2009 and 2010 has worsened. Table 1 below shows the November 2008 forecasts of two economic indicators from our

economic forecast and data provider (Moody's Economy.com or MEDC) which were used in our original 2010 Test Year filing and the March 2009 update to those forecasts used in the revised sales forecast that I am now offering. The new data indicate that US industrial production in manufacturing is expected to be more than 9% lower in the 2010 Test Year than was anticipated when we developed the original sales forecast. The data also show that commercial employment in Wisconsin is expected to be nearly 3% lower than we anticipated when we developed the original sales forecast.

Table 1

US Manufacturing Industrial Production
(Index 2000 = 100.00, Seasonally Adjusted)

	2005	2006	2007	2008	2009	2010	2011
MEDC 11/2008 Forecast - original filing	109.03	112.08	114.15	113.07	112.83	115.71	118.46
MEDC 03/2009 Forecast - revised filing	109.03	112.08	114.15	111.34	101.53	104.98	108.90
Difference	0.00	0.00	0.00	-1.72	-11.30	-10.73	-9.56
Percentage Difference	0.00%	0.00%	0.00%	-1.52%	-10.01%	-9.27%	-8.07%

WI Nonmanufacturing (Commercial) Employment
(Thousands, Seasonally Adjusted)

	2005	2006	2007	2008	2009	2010	2011
MEDC 11/2008 Forecast - original filing	2,337.10	2,360.68	2,381.06	2,376.47	2,353.78	2,354.32	2,389.17
MEDC 03/2009 Forecast - revised filing	2,337.12	2,360.74	2,383.16	2,377.28	2,310.15	2,285.15	2,325.18
Difference	0.02	0.06	2.10	0.81	-43.63	-69.17	-63.98
Percentage Difference	0.00%	0.00%	0.09%	0.03%	-1.85%	-2.94%	-2.68%

MEDC's March 2009 forecast of housing activity in the counties served by Wisconsin Electric also declined significantly with an expected growth rate in the 2010 Test Year which is roughly half (0.17% vs. 0.31%) of the rate that was indicated in its November 2008 forecast.

Q. Has MEDC issued updated forecasts of the variables which you just described?

A. Yes. MEDC's June 2009 forecasts for industrial production in manufacturing and commercial employment in Wisconsin are shown in Table 2 below. The June 2009 data

indicate that US industrial production in manufacturing is now expected to be over 13% lower in the 2010 Test Year than was anticipated when we developed the original sales forecast. The expected level for commercial employment in Wisconsin remains nearly 3% lower than we anticipated when we developed the original sales forecast.

Table 2

US Manufacturing Industrial Production
(Index 2000 = 100.00, Seasonally Adjusted)

	2005	2006	2007	2008	2009	2010	2011
MEDC 11/2008 Forecast - original filing	109.03	112.08	114.15	113.07	112.83	115.71	118.46
MEDC 06/2009 Forecast	109.12	112.06	113.79	110.29	97.70	100.57	104.50
Difference	0.09	-0.02	-0.36	-2.78	-15.13	-15.14	-13.96
Percentage Difference	0.08%	-0.02%	-0.32%	-2.46%	-13.41%	-13.08%	-11.79%

WI Nonmanufacturing (Commercial) Employment
(Thousands, Seasonally Adjusted)

	2005	2006	2007	2008	2009	2010	2011
MEDC 11/2008 Forecast - original filing	2,337.10	2,360.68	2,381.06	2,376.47	2,353.78	2,354.32	2,389.17
MEDC 06/2009 Forecast	2,337.12	2,360.74	2,383.16	2,377.28	2,315.65	2,284.68	2,317.58
Difference	0.02	0.06	2.10	0.81	-38.13	-69.64	-71.59
Percentage Difference	0.00%	0.00%	0.09%	0.03%	-1.62%	-2.96%	-3.00%

MEDC's June 2009 forecast of housing activity in the counties served by Wisconsin Electric declined further with an expected growth rate in 2010 which is roughly one-third (0.10% vs. 0.31%) of the rate that was indicated in its November 2008 forecast.

Q. Does your revised sales forecast reflect MEDC's June 2009 economic outlook?

A. No. The March 2009 economic data was used in our revised sales forecast.

Q. How does the revised sales forecast compare to the originally filed sales forecast in the 2010 Test Year?

A. Sales to our General Primary (Large C&I) customers, excluding two very large mines in the Upper Peninsula of Michigan, sales are now projected to be 443,800 MWH lower. This reduction in the forecast is based on:

- lower forecasts of US manufacturing industrial production (as discussed earlier)
- customer usage monitoring information developed in consultation with We Energies account management personnel,
- State of WI Department of Workforce Development plant layoff and closure data, and
- published news reports of plant closings, production cutbacks, etc..

Our General Secondary (Small C&I) sales are projected to be 409,200 MWH lower than shown in our initial filing due to the more pessimistic forecasts of WI commercial employment. Residential sales are now projected to be 169,300 MWH lower due to the decline in customer growth and a material decrease in use per customer. In total, these reductions amount to 1,022,300 MWH.

Q. Are you sponsoring any exhibits in support of the revised forecast?

A. Yes. I am sponsoring two revised exhibits. Exhibit 9r (JRG), which consists of two schedules, provides the revised electric sales forecasts by major rate class for 2009 and 2010 and compares those forecasts with actual 2008 sales for the entire Wisconsin Electric system (Schedule 1) and Wisconsin Electric's Wisconsin jurisdiction (Schedule 2). Exhibit 10r (JRG) is a bar graph showing Wisconsin Electric's weather normalized historical sales for 2006-2008 and the revised forecast of sales for 2009-10 for the three largest rate classes.

Q. Please elaborate on the decline in Residential sales that you are now forecasting.

A The residential forecast has been revised for two reasons. First, growth in the number of customers is now expected to be minimal, whereas modest growth was originally projected. This is a result of the steep decline in the forecast of activity in the housing market. Second, use per customer is now expected to remain significantly depressed, whereas it had earlier been expected to remain almost flat. Normalized use per customer for 2008 was 8,355

KWH, and in the originally filed forecast it was projected at 8,331 KWH in the 2010 Test Year, a decline of 0.3% over the two-year period. For the January through May period, normalized use per customer has fallen from 3,253 KWH in 2008 to 3,157 KWH in 2009, a decline of 3.0% in a single year. The revised forecast now projects use per customer at 8,171 KWH in the 2010 Test Year, a decline of 2.2% over the two-year period from 2008. In light of the fact that use per customer has already decreased by 3.0% in one year, the revised projection of a decline of 2.2% over two years is reasonable, and may in fact be somewhat optimistic.

Q. Have you previously communicated these adjustments to the filed electric sales forecast?

A. Yes, as part of the audit of electric sales, information concerning industrial production, employment, housing stock, etc., which "drive" our sales forecasts, has been provided to the PSCW staff. Also, the updated customer-specific forecast information for 2009 and the 2010 Test Year has been confidentially filed with the PSCW. The supporting documents provided will be available to any party to this case who requests them, consistent with the normal practice to provide discovery, with appropriate confidential process where needed.

Q. What is the revenue impact due to these adjustments only to the 2010 Test Year electric sales forecast?

A. The impact on test year revenues of lowering sales by a total of 1,022,300 Mwhrs is explained in the Supplemental Testimony of Dave Ackerman and Eric Rogers.

Q. Does this conclude your testimony?

A. Yes.

EXHIBIT 9r
5-UR-104
9/30/2009 (aff)

PSC REF#:116208

Wisconsin Electric Power Company and
Wisconsin Gas LLC
Docket No. 05-UR-104
Exhibit 9r (JRG)
Schedule 1of 2
Joel R. Gaughan
July, 2009

WISCONSIN ELECTRIC POWER Co.
Electric Utility - Calendar Sales
Total System

Rate Class	2008 Actual (MWH)	2009 Forecast (MWH)	2010 Test Year (MWH)	2008/07 Actual Growth	2009/08 Forecast Growth	2010/09 Test Year Growth
Residential	8,048,987	8,099,074	8,070,793	-1.6%	0.6%	-0.3%
Farm	228,097	228,256	224,456	-2.4%	0.1%	-1.7%
General Secondary	9,023,733	8,405,254	8,321,808	-1.8%	-6.9%	-1.0%
General Primary	10,691,694	9,239,088	9,257,018	-3.1%	-13.6%	0.2%
Other Retail	161,447	163,420	163,420	-0.6%	1.2%	0.0%
Total Retail (Ultimate)	28,153,958	26,135,092	26,037,495	-2.2%	-7.2%	-0.4%
Wholesale (Municipal) (1)	2,620,728	2,684,034	2,525,706	8.0%	2.4%	-5.9%
Total Retail plus Wholesale	30,774,686	28,819,126	28,563,201	-1.4%	-6.4%	-0.9%

(1) WE sales to Edison Sault included in 2007 data for comparability with 2008 data.

Wisconsin Electric Power Company and
Wisconsin Gas LLC
Docket No. 05-UR-104
Exhibit 9r (JRG)
Schedule 2 of 2
Joel R. Gaughan
July, 2009

WISCONSIN ELECTRIC POWER Co.
Electric Utility - Calendar Sales
Wisconsin Only

Rate Class	2008 Actual (MWH)	2009 Forecast (MWH)	2010 Test Year (MWH)	2008/07 Actual Growth	2009/08 Forecast Growth	2010/09 Test Year Growth
Residential	7,879,095	7,922,464	7,893,330	-1.7%	0.6%	-0.4%
Farm	228,097	228,256	224,456	-2.4%	0.1%	-1.7%
General Secondary	8,866,583	8,251,838	8,168,199	-1.8%	-6.9%	-1.0%
General Primary	8,190,966	7,430,936	7,456,992	-3.9%	-9.3%	0.4%
Other Retail	158,941	161,060	161,060	-0.6%	1.3%	0.0%
Total Retail (Ultimate)	25,323,682	23,994,554	23,904,037	-2.4%	-5.2%	-0.4%
Wholesale (Municipal)	2,002,791	2,058,648	1,900,056	5.8%	2.8%	-7.7%
Total Retail plus Wholesale	27,326,473	26,053,202	25,804,093	-1.9%	-4.7%	-1.0%

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Exhibit MIN-154
February, 2010
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Wisconsin Electric Power Company and
Wisconsin Gas LLC
Docket No. 05-UR-???
Exhibit _____(EAR-6)
Page 1 of 1
Witness: E. A. Rogers
Date: March, 2008

Equivalent Peaker Method for WEPCo-Owned Production Plant

Unit Type	Capacity MW	Inflated Plant-in-Service $1000	Plant $ per KW	Real fixed Charged Rate	Levelized Annual Costs	% Class Demand Related (Using $67.32/kW)	Demand Related Plant $1000	Energy Related Plant $1000
Peaker	1,148	$543,183	$473.16	9.57%	$45.28	100.0%	$543,183	$0
Intermediate Coal	1,220	$1,936,078	$1,586.95	8.52%	$135.21	49.8%	$963,972	$972,106
Base Coal	1,935	$2,252,713	$1,164.19	8.52%	$99.19	67.9%	$1,528,923	$723,790
Hydro	59	$207,446	$3,516.03	7.85%	$276.01	24.4%	$50,597	$156,849
Wind	29	$307,784	$5,878.00	8.11%	$476.71	14.1%	$43,465	$264,319
Total	4,391	$5,247,204					$3,130,140	$2,117,064
Total %							59.65%	40.35%

Construction cost of Peaker from Marginal Cost Exhibit Schedule 1 (average of 2010 and 2011).
Rate Base values from Plant Accounting as of Aug 31, 2008
Capacity Values Are MAIN Ratings 12-Month Average for 2010 Forecast.
Peakers include: Paris, Concord, Germantown and OC9.
PB5 and VA3 are not included in peakers because their costs are not identified.

Equivalent Peaker Method for Power-the-Future Lease Payments

Unit Type	Capacity MW	Annual Lease Payments $1000	Levelized Annual Cost $/ kW	% Class Demand Related	Demand Related Lease Payments $1000	Energy Related Lease Payments $1000
Peaker			$67.32	100.0%		
Intermediate Gas (PWGS)	1,153	$97,485	$108.33	62.1%	$60,578	$36,907
Base Coal (ERGS)	1,030	$265,791	$241.95	27.8%	$73,954	$191,837
Total	2,183	$363,276			$134,532	$228,744
Total %					37.03%	62.97%

Capacity estimates from Commodity Resources
Annual lease payments from Filiing Requirement #8.
Annual cost of peaker from Marginal Cost Exhibit Schedule 1 average of 2010 and 2011.