



414 Nicollet Mall
Minneapolis, Minnesota 55401

October 10, 2014

Burl Haar
Executive Secretary
Minnesota Public Utilities Commission
121 7th Place East, Suite 350
St. Paul, MN 55101

—VIA E-MAIL—

RE: RESPONSES TO MPUC INFORMATION REQUEST NOS. 2, 3, 4 AND 5
DRAFT PURCHASE POWER AGREEMENT WITH GERONIMO ENERGY
APPROVAL FOR A COMPETITIVE ACQUISITION PROPOSAL
DOCKET NOS. E002/M-14-788 & E002/CN-12-1240

Dear Dr. Haar:

Enclosed please find our responses to the referenced Minnesota Public Utilities Commission information requests in the above-noted dockets.

Please call me at (612) 337-2268 if you have any questions regarding this submission.

Sincerely,

/s/

AMBER R. HEDLUND
REGULATORY CASE SPECIALIST

Enclosures

- ☐ **Non Public Document – Contains Trade Secret Data**
☐ **Public Document – Trade Secret Data Excised**
☒ **Public Document**

Xcel Energy

Docket No.: E002/M-14-788 & E002/CN-12-1240

Response To: Public Utilities Commission Information Request No. 2

Requestor: Sean Stalpes

Date Received: 09/25/2014

Question:

On Page 5 of Xcel's September 23, 2014 updated resource need assessment, Xcel refers to a previous "reservation" over whether MISO's coincident peak approach "would remain stable." Also, Xcel states that it has since "gained more confidence in the approach."

- a) Please explain what Xcel means by "stable" and please explain whether this refers to future stability in diversity relative to the historical diversity from MISO's system peak, as identified in Table 3 of Xcel Witness Wishart's September 27, 2013 Direct testimony in Docket 12-1240. This table shows Xcel's diversity factor ranging from 0-14 percent from 2006-2012.
- b) Please explain what factors and circumstances have led Xcel to gain more confidence in the average coincident peak adjustment for long-term planning, particularly since the Company's January 31, 2014 Exceptions to the ALJ Report.
- c) What was Xcel's diversity factor in 2013 and 2014?

Response:

- a) The stability we had in mind has more to do with the framework of MISO's reserve and capacity adequacy calculations and not the actual year by year coincident peak values presented in Mr. Wishart's testimony. The construct of applying a reserve margin percentage number to the utility's demand at the time of MISO's peak is widely supported by utilities and seems to have settled in as the framework for capacity resource adequacy determinations. As we describe elsewhere, MISO has examined how the reserve margin percentage number may change in the future and anticipates a declining value which will reduce capacity requirements and make our assessment conservative. MISO has also examined our coincident peak forecast approach and found it acceptable. We provide our coincident peak annually for the coming year. It is based on a regression analysis.

Independent variables used in the model include the NSP system monthly summer coincident peaks not coincident with MISO, the Temperature-Humidity Index (THI) at 3:00 PM on the MISO monthly summer peak days, a binary variable to eliminate one observation that had a large residual (Sept 2005), and a regression constant. We would not expect the result of the regression to change significantly since regression analysis has a smoothing effect on data sets. We also believe it is unlikely that a consistent trend to higher or lower coincidence is likely given the variability demonstrated in Mr. Wishart's table in testimony.

MISO recognizes the need for a stable outcome in its annual determination of planning reserve margin (PRM) to help stakeholders with resource planning. This has been one of the aims of MISO's refinements in their Loss of Load Expectation study work, and the results in the most recent PRM determination (and projections for future years) as reported to the Loss of Load Expectation Working Group on August 13, 2014 reflect that.

A copy of the presentation "2015 Planning Reserve Margin Study Results, August 13, 2014" is provided as Attachment A to this response. This documentation represents the work completed through the MISO Stakeholder Loss of Load Expectation Working Group regarding Planning Reserve Margin.

- b) Please see our response to a.
- c) The NSP System diversity factor reported to MISO for the 2013/2014 planning year was .9493. The NSP System diversity factor reported to MSIO for the 2014/2015 planning year was .9549.

Preparer:	Mary Morrison
Title:	Resource Planning Analyst
Department:	Resource Planning and Bidding
Telephone:	612.330.5862
Date:	October 10, 2014



2015 Planning Reserve Margin Study Results

August 13th, 2014



Highlights

- 2015-2016 MISO Planning Reserve Margin (PRM)
 - 7.1% on Unforced Capacity (UCAP)
 - PRM UCAP decreased by 0.2% from the 2014-2015 Planning Year
 - Decrease of PRM UCAP is the net effect of the changes to:
 - Load forecast uncertainty
 - Internal load and generation
 - External support

2015-2016 Local Resource Zone (LRZ) Local Reliability Requirement (LRR) & Local Clearing Requirement (LCR) Calculations

2015 Local Resource Zone (LRZ)	LRZ-1	LRZ-2	LRZ-3	LRZ-4	LRZ-5	LRZ-6	LRZ-7	LRZ-8	LRZ-9
2015-2016 Planning Reserve Margin (PRM) Study									
Installed Capacity (ICAP)	19,522	15,913	9,906	12,586	8,720	20,347	23,512	10,650	31,495
Unforced Capacity (UCAP)	18,345	14,868	9,195	11,255	7,935	19,158	21,921	10,166	29,195
Adjustment to UCAP	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
LRR (UCAP)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Peak Demand	17,974	12,441	9,527	10,048	8,576	18,067	21,632	7,532	25,512
Peak Demand Month	Jul	Jul	Jul	Aug	Aug	Jul	Jul	Jul	Aug
LRR UCAP per-unit of LRZ Peak Demand	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

- **Zonal LOLE studies on going**
 - Internal review
 - Net impact undetermined until Capacity Import Limit calculations are complete

LRZ Load Summary – Years 1, 2, 3 & 10

Zone	2015PY	2016PY	2017PY	2024PY	9-Year AAGR ¹
MISO	127,586	129,367	130,690	138,091	0.91%
LRZ-1 (DPC, GRE, MP, MDU, NSP, OTP, SMP)	17,974	18,236	18,479	19,527	0.96%
LRZ-2 (ALTE, MGE, UPPC, WEC, WPS)	12,441	12,582	12,950	13,519	0.96%
LRZ-3 (ALTW, MEC, MPW)	9,527	9,634	9,727	10,445	1.07%
LRZ-4 (AMIL, SIPC, CWLP)	10,048	10,140	10,195	10,530	0.53%
LRZ-5 (AMMO, CWLD)	8,576	8,672	8,561	8,893	0.41%
LRZ-6 (BREC, DUK-IN, HE, IPL, NIPSCO, SIGE)	18,067	18,298	18,506	19,747	1.03%
LRZ-7 (CONS, DECO)	21,632	21,775	21,868	22,254	0.32%
LRZ-8 (EAI)	7,532	7,972	8,113	8,702	1.73%
LRZ-9 (CLECO, EES, LAFA, LAGN, LEPA, SME)	25,512	25,806	26,193	28,041	1.10%
¹ AAGR = Average Annual Growth Rate					

PRM Results for Years 1, 2, 3 & 10

MISO Planning Reserve Margin (PRM)	2015/2016 PY	2016/2017 PY	2017/2018 PY	2024/2025 PY	Formula Key
MISO System Peak Demand (MW)	127,586	129,367	130,690	138,091	[A]
Time of System Peak (EST)	8/5/2015 16:00	8/3/2016 16:00	8/2/2017 16:00	7/31/2024 16:00	
Installed Capacity (ICAP) (MW)	152,616	149,958	151,447	152,743	[B]
Unforced Capacity (UCAP) (MW)	142,006	139,596	141,059	142,249	[C]
Firm External Support (MW)	3,155	3,155	3,155	3,155	[D]
Adjustment to ICAP (MW)	-9,995	-5,333	-5,253	1,820	[E]
Adjustment to UCAP (MW)	-8,532	-4,339	-4,278	1,718	[F]
ICAP PRM Requirement (PRMR) (MW)	145,775	147,780	149,348	157,718	[G] = [B] + [D] + [E]
UCAP PRM Requirement (PRMR) (MW)	136,628	138,412	139,935	147,122	[H] = [C] + [D] + [F]
MISO PRM ICAP	14.3%	14.2%	14.3%	14.2%	[I] = ([G] - [A]) / [A]
MISO PRM UCAP	7.1%	7.0%	7.1%	6.5%	[J] = ([H] - [A]) / [A]

- Behind-the-Meter Generation (BTMG), Demand Response (DR), Wind, Run-of-River/Biomass and Firm Purchases were held constant, while Firm Sales varied depending on the year

MISO Resources	ICAP (MW)	UCAP (MW)
Demand Response	5,747	5,747
Behind-the-Meter	4,238	3,569
Wind	1,176	1,176
ROR/Biomass	832	832
Purchases	3,155	3,155

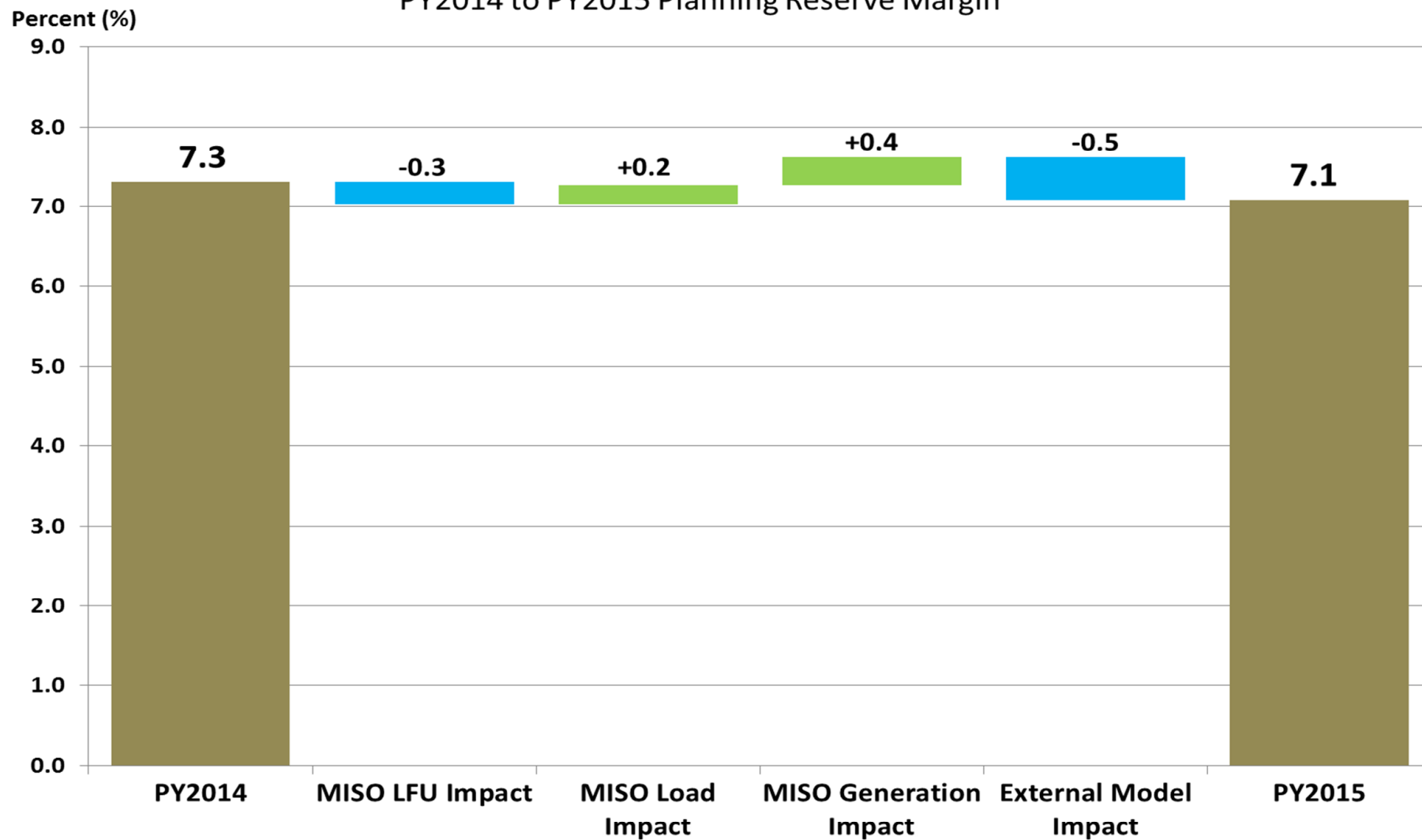
MISO Capacity sold into PJM Reliability Pricing Model (RPM)				
Firm Sales (UCAP)	15/16 PY	16/17PY	17/18 PY	24/25 PY*
Capacity Cleared in PJM RPM [MW]	2,044	4,135	3,368	3,368

* PY 24/25 utilized Capacity Cleared in PJM for the 17/18 PY



MISO System Planning Reserve Margin (PRM) UCAP - WaterFall Chart

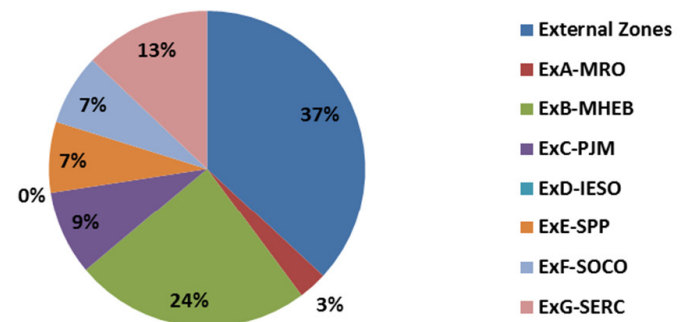
PY2014 to PY2015 Planning Reserve Margin



PRM Study Input Changes

- MISO LFU
 - LFU decreased by 0.1%
 - 0.3% decrease of PRM UCAP
- Internal Load
 - MISO peak load increased 1.7%, zone 8 and 9 load forecast coming from Module E Capacity Tracking (MECT) tool
 - Load shape increase in days with peak load greater than .95 pu.
 - 0.2% increase of PRM UCAP
- Internal Generation
 - Modeled generation that is eligible as a Planning Resource only, consistent with 2014 Planning Resource Auction (PRA).
 - Average EFORd increased by 0.4%
 - Behind-the-Meter Generation (BTMG) modeled with a forced outage rate rather than as a perfect unit
 - 0.4% increase of PRM UCAP
- External Support
 - Firm external support increased by 52 MW
 - Non-firm external support increased by 431 MW
 - Demand-Side Management reduced
 - PJM PRM target adjusted
 - 0.5% decrease of PRM UCAP

External Non-Firm Support Breakdown



MISO LFU

Local Resource Zone (LRZ)	2014 PY LFU	2015 PY LFU	Delta
LRZ-1	2.9%	2.8%	-0.1%
LRZ-2	4.5%	4.5%	0.0%
LRZ-3	3.0%	2.9%	-0.1%
LRZ-4	4.7%	4.5%	-0.2%
LRZ-5	4.4%	4.2%	-0.2%
LRZ-6	3.5%	3.3%	-0.2%
LRZ-7	5.3%	5.2%	-0.1%
LRZ-8	5.0%	4.9%	-0.1%
LRZ-9	3.2%	2.9%	-0.3%
MISO	3.9%	3.8%	-0.1%

Internal Generation

- Modeled generation that is eligible as a Planning Resource only
 - Consistent with 2014 PRA
 - PY 2014-2015 PRM study modeled all Network and Energy Resources
- Behind-the-Meter Generation (BTMG) modeled with a forced outage rate
 - Modeled as an Energy-Limited resource in the 2014-2015 PRM study
- Average EFORd increased

External Support

- DSM (MW)
Comparisons

External Area	PY 2014	PY 2015
ExA-MRO	135	106
ExB-MHEB	382	308
ExC-PJM	14,004	14,833
ExD-IESO	2,950	567
ExE-SPP	1,672	1,275
ExF-SOCO	2,100	2,249
ExG-SERC	2,354	2,006
Total	23,597	21,344

- PRM Target (%)
Comparisons

External Area	PY 2014	PY 2015
ExA-MRO	15.0%	15.0%
ExB-MHEB	12.0%	12.0%
ExC-PJM	15.9%	19.3%
ExD-IESO	18.6%	18.7%
ExE-SPP	13.6%	13.6%
ExF-SOCO	15.0%	15.0%
ExG-TVA	15.0%	15.0%



- External Support vs No
External Support

MISO PRM UCAP	2015/2016 PY Base Case w/ External	2015/2016 PY Base Case No External
MISO PRM UCAP (%)	7.1%	8.9%

*2015 PJM PRM Target set to actual reserves cleared in the 2015/2016 RPM

Perfect Unit Adjustment vs Current Method

- **68A.5 Establishment of Local Reliability Requirement** “The LRR will be established using the following iterative process:
 - a. The initial iteration of the LOLE model will assume 0 MW of Planning Resources within the LRZ, and then, starting with the largest Unforced Capacity rated resource located in the LRZ, the Transmission Provider will sequentially add additional resources (or fractions thereof) in descending order of MW of Unforced Capacity located in the LRZ until the LOLE is 0.1 day per year for the LRZ.
- Current method effectively removes lowest UCAP units characteristics from generator stack in model
- Current method is much more labor intensive than perfect unit adjustment methodology
- Perfect unit adjustment is industry standard

MISO PRM UCAP	2015/2016 PY Tariff Adjustment	2015/2016 PY Perfect Unit Adjustment	2016/2017 PY Tariff Adjustment	2016/2017 PY Perfect Unit Adjustment
MISO PRM UCAP	7.1%	7.3%	7.0%	7.1%

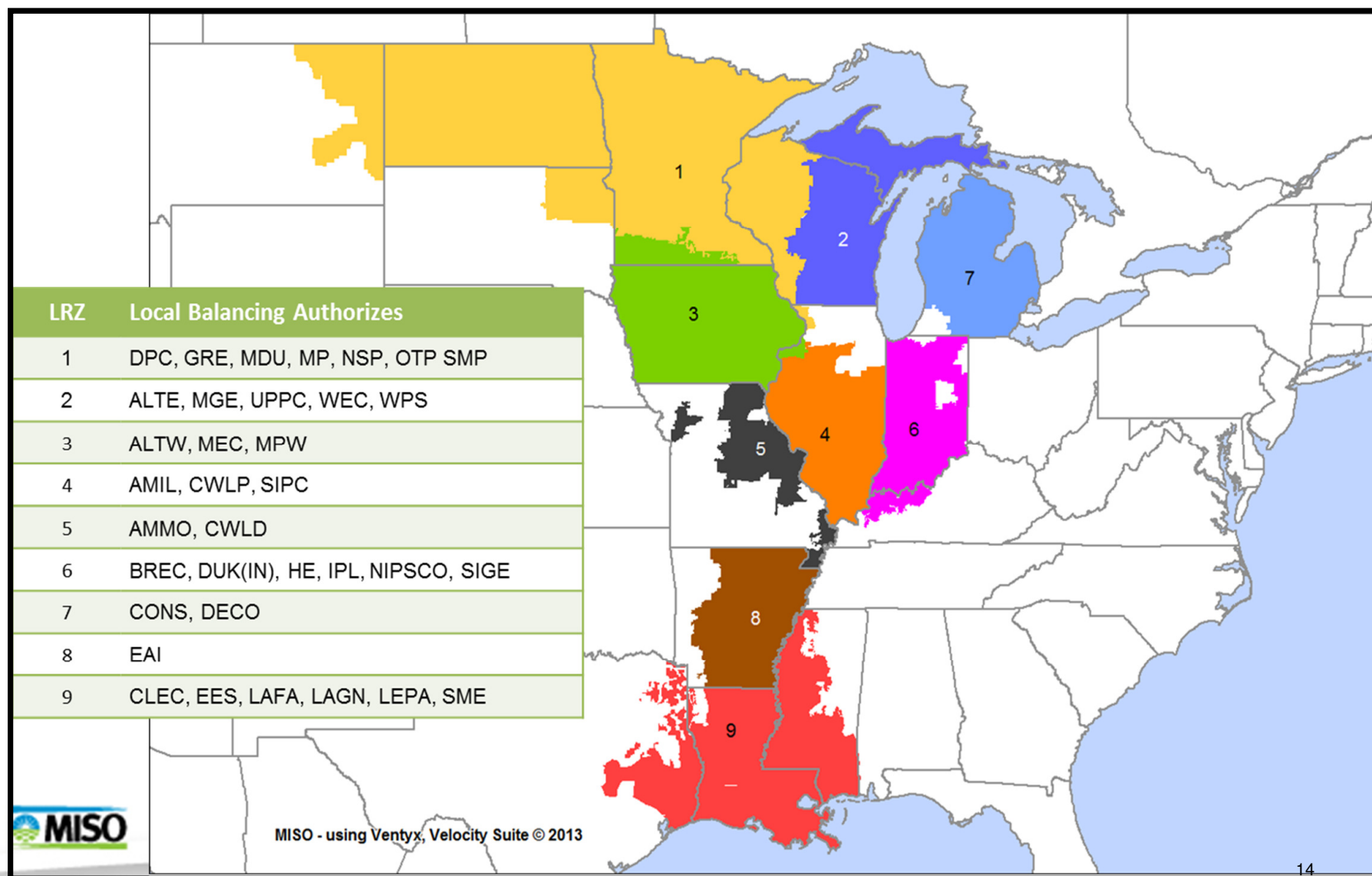


Future Process Improvement Evaluations

- Understanding of reasonable adjustment methodology
- External resources treatment and the establishment of the external zone in PRA
- Guiding principles for re-evaluation of the Local Resource Zone (LRZ) Boundaries

Appendix

MISO Local Resource Zones



- ☐ Non Public Document – Contains Trade Secret Data
☐ Public Document – Trade Secret Data Excised
☒ Public Document

Xcel Energy

Docket No.: E002/M-14-788 & E002/CN-12-1240

Response To: Public Utilities Commission Information Request No. 3

Requestor: Sean Stalpes

Date Received: 09/25/2014

Question:

On Page 6 of Xcel's September 23, 2014 updated resource need assessment, Xcel states "MISO has since accepted our 5 percent coincidence factor."

- a) Please explain what Xcel means that MISO has "accepted" Xcel's coincidence factor.
- b) Has MISO accepted Xcel's coincidence factor for years 2017-2019?
- c) Please e-file all relevant documentation demonstrating that MISO has "accepted" Xcel's 5 percent coincidence factor.

Response:

- a) MISO has established a process to formally review the annual forecast and coincident factor calculations of each Load Serving Entity (LSE). Additionally, MISO's Supply Adequacy staff annually selects 20 percent of LSE's for a thorough review of their forecasting methods and coincident peak determination. MISO conducted this review for the NSP System in Winter 2013 (January-February). Through a dialogue between MISO and the Company, MISO reviewed and accepted the methodology, forecast, and peak coincident demand calculation. We believe our participation in this process and the subsequent affirmative dialogue indicates MISO's acceptance of NSP's processes and data.

We provide the February 7, 2013 *Forecast Review Progress Report* presentation to the Supply Adequacy Working Group as Attachment A to this response. This presentation identified the forecast review components, summary of the results, and the utilities that were reviewed; NSP is on this list.

- b) We have not yet submitted coincident and non-coincident peak forecasts for the years 2017-2019. MISO requires LSEs to submit these forecasts for the next planning period. We therefore provided a forecast and coincidence factor

for the current 2014/2015 planning year on November 1, 2013. On November 1, 2014, we will submit the coincident factor for 2015/2016, in accordance with the methodologies approved by MISO.

c) Please see Attachment A to this response.

Preparer: Mary Morrison
Title: Resource Planning Analyst
Department: Resource Planning and Bidding
Telephone: 612.330.5862
Date: October 10, 2014

Forecast Review Progress Report

Supply Adequacy Working Group

February 7, 2013

topics

- **forecast review**
- **summary of review**
- **list of LSEs reviewed**

forecast review

- **focus on coincident demand methodology & inputs**
- **review of non-coincident peak & energy methodologies**
- **reviewed LSEs whose forecasted coincident demands represent 60% of MISO's annual peak demand**

• System Σ NCP*... ~	97,900	}	Approximate totals, still subject to review.
System CP ... ~	92,650		
System CF ...	94.6%		
System DF ...	5.4%		

* July

summary of review

- **Seven (7) instances where minor revisions were requested**
 - Coincident demand not determined from causal factors, failure to use 50/50 inputs, non-coincident peaks and/or energy not determined from causal factors, unexpected signs on an included independent variable, math errors
 - All requests were responded to in a timely fashion and in compliance with requested changes
 - None of the revisions resulted in substantial changes to any forecasted values
- **Overwhelming use of econometric analysis**
- **A few instances of hybrid models**
 - Residential (primarily) and certain commercial customer class equations estimated using end-use equations, typically containing terms estimated by econometric techniques
 - Most other customer classes estimated by econometrics or advanced time-series (ARIMA) models.

list of LSEs reviewed

“Large” LSEs

1. Mid-American Energy
2. Northern Indiana Public Service
3. Consumers Energy
4. Detroit Edison
5. Duke Energy – Indiana
6. NSP Energy
7. Indianapolis Power & Light
8. Wisconsin Public Service
9. AMEREN Illinois
10. Union Electric
(AMEREN Missouri)

“Small” LSEs

1. City of Geneseo (IL)
2. New Ulm Public Utilities
3. Northwestern Wisconsin Electric
4. Manitowoc Public Utilities
5. Wilmar Municipal Utilities
6. Blue Earth Light & Water
7. Indiana Municipal Power Agency
8. American Electric Power Service
9. Resale Power Group of Iowa
10. Lake View Electric Dept.

questions?

- contact

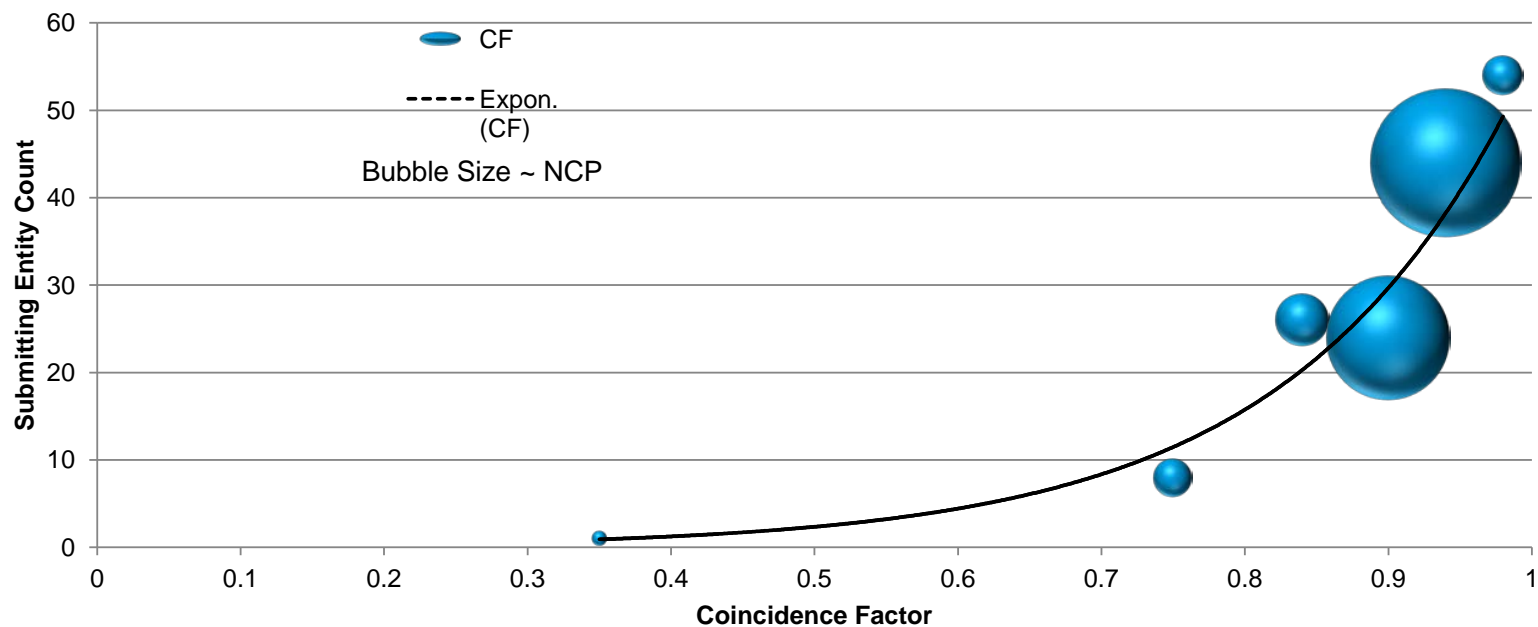
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appendix



- ☐ Non Public Document – Contains Trade Secret Data
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Xcel Energy

Docket No.: E002/M-14-788 & E002/CN-12-1240

Response To: Public Utilities Commission Information Request No. 4

Requestor: Sean Stalpes

Date Received: 09/25/2014

Question:

On page 10 of Xcel Witness Wishart's September 27, 2013 Direct Testimony (Public Version) in Docket 12-1240, Xcel answered "No" to the question of whether MISO has "settled on a long-term planning criteria."

Also on page 10 of Mr. Wishart's September 27, 2013 Direct Testimony, Xcel states, "Reserve requirements 5-10 years from now are not very predictable."

- a) Has MISO settled on long-term planning criteria since Mr. Wishart's September 27, 2013 testimony? If so, please explain.
- b) Does Xcel still agree with its statement that reserve requirements are not predictable five or more years into the future?
- c) Please explain in detail why a 5% average coincidence factor is appropriate for long-term planning.
- d) Does Xcel still agree with the Company's Proposed Finding of Fact #124 in Docket 12-1240, as it applies to the September 2014 updated need assessment, that the coincident peak adjustment "not be used to adjust the outcome of the resource need? If not, does Xcel now oppose the Commission's finding of need?

Response:

- a) MISO continues to make capacity adequacy determinations annually. However, MISO's capacity adequacy framework seems to have settled in.

In September 2013, as Testimony was being developed, MISO had commenced a Module E Resource Adequacy evaluation of the MISO LSEs, which was conducted from September 2013 through May 2014. It evaluated the load and resource forecasts of each LSE, to provide a longer range perspective on load growth, resource retirements and additions, with a target of assessing resource and Planning Reserve Margin (PRM) needs for the future. The results of this

valuation are available in the *2015 Planning Reserve Margin Study Results* presentation provided as Attachment A to our response to MPUC-2. The key take-aways are:

- 2015-2016 MISO PRM = 7.1% on Unforced Capacity (UCAP)
- Decreased PRM due to:
 - reduced load forecast uncertainty
 - increased internal load and generation (Entergy membership to MISO)
 - increased external support (PJM agreement)
- Forecasted PRM
 - 2015-2016 – 7.1%
 - 2016-2017 – 7.0%
 - 2017-2018 – 7.1%
 - 2024-2025 – 6.5%

b) No. We believe the current efforts undertaken by MISO have improved the reliability of the overall planning resources LSEs need from MISO. These efforts include:

- Perspective around the Resource Adequacy of the organization, as well as the individual zones, with a survey of LSE load and resource forecasts for 10 years.
- Implementation of a forecast and coincident factor review process to ensure consistent inputs from the LSE's.
- LSE accountability for individually maintaining appropriate resources, through the process of applying an LSE appropriate coincident factor, as opposed to the former method of integrating an coincident factor to all LSE's.

c) MISO's Resource Adequacy process has required LSEs to submit forecasts of both its Non-Coincident Peak Demand (NCP) and its Coincident Peak Demand (demand at the time of the MISO footprint's peak demand) (CP) beginning with the June 2013 – May 2014 planning year. As we discuss below, the NSP System Coincidence Factors for the first three planning years during which MISO has required a forecast of both NCP and CP, has centered very closely around 95 percent, which we believe is a reasonable basis upon which to assume our Coincidence Factor.

In the first, 2013-2014 planning year, our forecast for the NSP System was an NCP of 9,215 MW, and a CP of 8,748 MW, which calculates to 0.9493 (*note: CP / NCP = Coincidence Factor*). A year later, the NSP System forecast submitted to MISO for the 2014-2015 planning year was an NCP of 9,211 MW, and a CP of 8,796 MW, which yields a result of 0.9549. Now, for the upcoming 2015-2016 planning year, the NSP System forecast that will be

submitted to MISO will be an NCP of 9,301 MW, and a CP of 8,813 MW, resulting in 0.9475.

As noted previously, the NSP System's Coincidence Factors for the first three planning years during which MISO has required a forecast of both NCP and CP, has been near 0.95, which we believe forms a solid basis to use 0.95 as our assumed Coincidence Factor.

- d) No. Since the record closed in the contested case phase of this proceeding, the following have occurred that have caused us to believe that the coincident peak adjustment should be used in determining our resource need:
- MISO's application of Diversity or Coincident Factor (new for PY 2013/14)
 - MISO's Planning Reserve Margin changes (change in methodology in PY 2013/14)
 - Solar Resource Forecast (SES, REC shelf-life)
 - Load Forecast Changes
 - Unit Retirements

We provide for reference Finding of Fact #124:

"Xcel Energy did not use the new MISO coincident peak reduction factor in its 2011 forecast and need assessment and recommends that it not be used to adjust the outcome of the September 2013 update."

When we submitted our December 2013 Proposed Findings of Fact as part of the contested case phase of this proceeding, we generally tried to limit the factual nature of our Proposed Findings of Fact to pertinent material in the evidentiary record in the proceeding per Minn. R. 14.60, Subd. 2.

The Commission's May 23, 2014 Order in this proceeding addressed the Need at pages 26-31. This Order (at page 26) noted that the Commission's March 2013 resource plan Order found that Xcel Energy had demonstrated the need for at least 150 MW by 2017, potentially increasing to 500 MW by 2019, but stated that since then a variety of circumstances have changed pertaining to energy resources on the Company's system and potentially changes in need estimated by Xcel Energy. The Commission noted that it must proceed to make the necessary choices on the basis of a rigorous analysis of the data that is in the record. The Order at pages 30-31 rejected the ALJ's view that changed circumstances justify reducing Xcel Energy's acquisitions to no more than 26 MW by 2019. The Order stated that the level of demand was more than sufficient to justify selecting a new combustion turbine or combined cycle generator. This finding, based on the evidentiary record at that time, was consistent with the position of Xcel Energy.

However, as we have discussed in our responses to MPUC-2 and MPUC-3, a number of factors have changed, which have caused us to gain confidence in MISO's resource adequacy calculations for long-term planning. Therefore, we now believe the Commission can reasonably rely on the coincident peak adjustment in determining the Company's need.

Preparer: Mary Morrison
Title: Resource Planning Analyst
Department: Resource Planning and Bidding
Telephone: 612.330.5862
Date: October 10, 2014

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Xcel Energy

Docket No.: E002/M-14-788 & CN-12-1240

Response To: Public Utilities Commission Information Request No. 5

Requestor: Sean Stalpes

Date Received: 09/25/2014

Question:

The September 2014 Need Assessment Summary table on page 9 includes 109 MW of solar in 2017, escalating to 121 MW in 2019.

- a) Are these 109-121 MW of solar listed in the updated need assessment MW already procured or assumed to be procured to meet the SES? If it is the latter, why didn't Xcel remove that assumption if Xcel's recommendation is for the Commission to consider the competitive bidding process and the Solar RFP as a single public interest determination?
- b) If the solar projects proposed in the competitive bidding process and the Solar RFP would meet the capacity obligation in the table on page 9, would those resources replace or be in addition to the solar listed in the available resources portion of the table?
- c) Please provide a revised September 2014 Need Assessment Summary table which includes only the MW of solar resources currently available to serve NSP's load.

Response:

- a) The solar resources identified in the updated Resource Need Assessment Summary table represents the current Company forecast of resources needed to meet the Solar Energy Standard (SES) mandate. The previous needs assessment, filed in Xcel Energy Witness Wishart's September 27, 2013 Direct Testimony in Docket No. E002/CN-12-1240 also identified the Company's forecast of solar resources necessary to meet the SES mandate.

Our estimate anticipates that approximately 100 MW of customer-sponsored and Community Garden generation over the next 5-6 years; it also assumes up to approximately 150 MW of utility-scale solar generation will be added in 2016. Our estimate further assumes 50 percent of solar nameplate generation will be accredited.

Regardless of how the Commission organizes its public interest determinations for the solar bid in the Competitive Acquisition Process (CAP) and the PPAs resulting from our Solar RFP, our need assessment assumes approximately 110-130 MW of accredited solar capacity will be available by 2020 to meet MISO resource adequacy requirements.

- b) We have embedded approximately 150 MW of utility-scale solar generation into Table 9, based on our assumption that the Commission will authorize that level of solar resources from the CAP docket and/or the Solar RFP docket.
- c) We provide below, the Need Assessment Summary that was included in our September 23, 2014 filing, and the requested table that includes only the MW of solar resources currently available to serve NSP's load:

As provided in our September 23, 2014 filing:

Table A – Resource Need Assessment - Summary
September 2014
With Solar Resource Forecast

	2017	2018	2019	2020	2021	2022	2023	2024
Peak	9,478	9,552	9,608	9,639	9,669	9,726	9,720	9,712
Coincident Peak adjustment	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Reserve Margin	7.1%	7.1%	7.1%	7.1%	7.1%	7.1%	7.1%	7.1%
Capacity Obligation	9,643	9,719	9,776	9,807	9,838	9,896	9,890	9,881
Coal	2,414	2,414	2,414	2,414	2,414	2,414	2,414	2,395
Nuclear	1,643	1,643	1,643	1,643	1,643	1,643	1,643	1,643
Gas	3,457	3,457	3,446	3,293	3,293	3,293	3,293	3,137
Wind, Hydro, Bio	1,253	1,230	1,204	1,203	1,433	1,425	1,385	1,317
Solar	109	115	121	127	129	128	128	127
Load Management	1,021	1,033	1,044	1,056	1,067	1,078	1,090	1,101
Resources	9,897	9,892	9,872	9,736	9,979	9,981	9,953	9,720
<i>Net Resource Surplus (Deficit)</i>	254	173	96	(71)	141	85	63	(161)

Note: Load Management values are grossed-up for MISO reserve margin impacts.

Revised to exclude our current solar resource forecast:

Table B – Resource Need Assessment – Summary
September 2014
Without Solar Resource Forecast

	2017	2018	2019	2020	2021	2022	2023	2024
Peak	9,478	9,552	9,608	9,639	9,669	9,726	9,720	9,712
Coincident Peak adjustment	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Reserve Margin	7.1%	7.1%	7.1%	7.1%	7.1%	7.1%	7.1%	7.1%
Capacity Obligation	9,643	9,719	9,776	9,807	9,838	9,896	9,890	9,881
Coal	2,414	2,414	2,414	2,414	2,414	2,413	2,414	2,395
Nuclear	1,643	1,643	1,643	1,643	1,643	1,643	1,643	1,643
Gas	3,457	3,457	3,446	3,293	3,293	3,293	3,293	3,137
Wind, Hydro, Bio	1,253	1,230	1,204	1,203	1,433	1,425	1,385	1,317
Solar	4	4	3	3	3	3	3	3
Load Management	1,021	1,033	1,044	1,056	1,067	1,078	1,090	1,101
Resources	9,791	9,780	9,755	9,612	9,853	9,856	9,828	9,596
<i>Net Resource Surplus (Deficit)</i>	148	61	(21)	(195)	15	(40)	(62)	(285)

Note: Load Management values are grossed-up for MISO reserve margin impacts.

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CERTIFICATE OF SERVICE

I, SaGonna Thompson, hereby certify that I have this day served copies of the foregoing document or a summary thereof on the attached list of persons.

xx by depositing a true and correct copy or summary thereof,
properly enveloped with postage paid in the United States
mail at Minneapolis, Minnesota; or

xx via electronic filing

Docket Nos. E002/CN-12-1240
E002/M-14-788

Dated this 10th day of October 2014

/s/

SaGonna Thompson
Regulatory Administrator

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