

December 16, 2015

VIA ELECTRONIC FILING

Mr. Daniel P. Wolf
Minnesota Public Utilities Commission
121 Seventh Place East, Suite 350
St. Paul MN 55101-2147

Re: **2015 Minnesota Biennial Transmission Projects Report**
PUC Docket No. E9099/M-15-439

Dear Mr. Wolf:

On December 7, 2015, in response to the request of the Department of Commerce, the Minnesota Transmission Owners (MTO) filed a copy of the Midwest Reliability Organization's (MRO) load and capability report for the Mid-Continent Area Power Pool (MAPP) utilities found in the North American Electric Reliability Corporation's (NERC) 2014 Long-Term Reliability Assessment.

On December 15, 2015, the NERC 2015 Long-Term Reliability Assessment became available electronically. Accordingly, the MTO is filing the 2015 MRO-MAPP load and capability report which is found on pages 42 and 43 of the 2015 Assessment. As with the 2014 Assessment, the 2015 Assessment can be found at the following link:

<http://www.nerc.com/pa/RAPA/ra/Pages/default.aspx>

With this submission of the 2015 data, the MTO has provided the available information requested by the Department of Commerce and the 2015 Biennial Transmission Projects Report is complete.

Thank you very much.

Sincerely,

/s/ Alan R. Mitchell

Alan R. Mitchell
Direct Dial: 612.492.7371
Email: amitchell@fredlaw.com

Attorneys & Advisors
main 612.492.7000
fax 612.492.7077
www.fredlaw.com

Fredrikson & Byron, P.A.
200 South Sixth Street, Suite 4000
Minneapolis, Minnesota
55402-1425

NERC

NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

2015 Long-Term Reliability Assessment

December 2015

RELIABILITY | ACCOUNTABILITY



**3353 Peachtree Road NE
Suite 600, North Tower
Atlanta, GA 30326
404-446-2560 | www.nerc.com**

MRO-MAPP

Assessment Area Overview

The Mid-Continent Area Power Pool (MAPP) is an association of electric utilities and other electric industry participants operating in all or parts of Iowa, Minnesota, Montana, North Dakota, and South Dakota. Currently, the MAPP Planning Coordinator includes entities in two BAs and 13 LSEs. MAPP covers an area of approximately 200,000 square miles and serves a population of about 3.5 million. Ames Municipal Electric System (AMES) and Rochester Public Utilities (RPU) have withdrawn from the MAPP Planning Authority. The Integrated System (IS), Western Area Power Administration (WAPA) Upper Great Plains, Basin Electric, and Heartland Consumers Power District (Heartland) will be joining the SPP Planning Authority on October 1, 2015. The integration of these entities, primarily located in North and South Dakota, would add approximately 4,700 MW of load and 9,500 miles of transmission to SPP RTO.

Summary of Methods and Assumptions

Reference Margin Level

MAPP members use a range of Reserve Margin targets depending on each individual member's system. However, MAPP provides a 15% Reference Margin Level.

Load Forecast Method

Coincident; normal weather (50/50)

Peak Season

Summer; however, recent projections indicate higher Total Internal Demand during the winter seasons.

Planning Considerations for Wind Resources

Historical data

Planning Considerations for Solar Resources

No utility-scale solar resources

Footprint Changes

The Minnesota Municipal Utilities Association (MMUA) and Ames Municipal Utilities (AMES) are now reported in the MISO footprint.

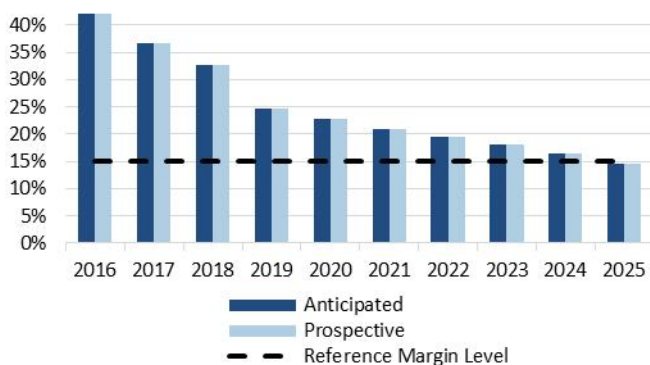
Assessment Area Footprint



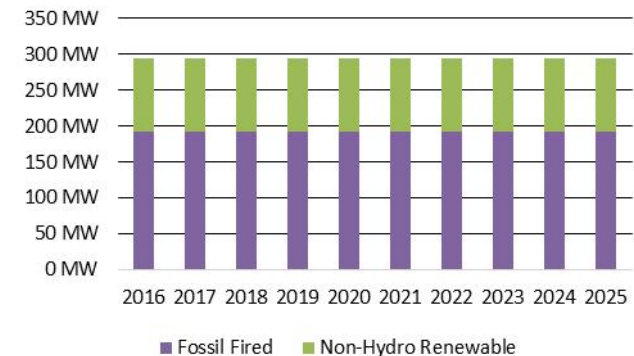
Peak Season Demand, Resources, and Reserve Margins

Demand (MW)	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Total Internal Demand	5,154	5,446	5,549	5,743	5,838	5,925	6,011	6,097	6,210	6,331
Demand Response	98	94	96	98	100	102	104	106	108	110
Net Internal Demand	5,056	5,352	5,453	5,645	5,738	5,823	5,907	5,991	6,102	6,220
Resources (MW)	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Anticipated	7,188	7,318	7,240	7,040	7,040	7,040	7,060	7,080	7,100	7,120
Prospective	7,188	7,318	7,240	7,040	7,040	7,040	7,060	7,080	7,100	7,120
Reserve Margins (%)	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Anticipated	42.18%	36.74%	32.77%	24.71%	22.69%	20.90%	19.52%	18.17%	16.36%	14.46%
Prospective	42.18%	36.74%	32.77%	24.71%	22.69%	20.90%	19.52%	18.17%	16.36%	14.46%
Reference Margin Level	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%
Excess/Shortfall (MW)	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Anticipated	1,374	1,164	969	548	441	343	267	190	83	(34)
Prospective	1,374	1,164	969	548	441	343	267	190	83	(34)

Peak Season Reserve Margins



10-Year Peak Season Cumulative Generation Mix Change



Demand, Resources, and Reserve Margins

MAPP is an association of electric utilities and other electric industry participants operating in all or parts of Iowa, Minnesota, Montana, North Dakota, and South Dakota. MAPP historically has experienced its annual peak demand in summer but recently began projecting higher total internal demand during the winter seasons. The Prospective and Adjusted Potential Planning Reserve Margins for MAPP fall below 15% during the 2023 summer season, reaching 14.5% that year. The Anticipated Reserve Margin for the MAPP area does not fall below the Reference Margin of 15% during the reporting time frame.

There have been some membership changes since the previous LTRA. Ames Municipal Electric System (AMES) and Rochester Public Utilities (RPU) have withdrawn from the MAPP Planning Authority. In addition, the Integrated System (IS), Western Area Power Administration (WAPA) Upper Great Plains, Basin Electric, and Heartland Consumers Power District (Heartland) will be joining the SPP Planning Authority on October 1, 2015. The integration of these entities, primarily located in North and South Dakota, would add approximately 4,700 MW of load and 9,500 miles of transmission to SPP. MAPP will dissolve Effective October 1, 2015.

Basin Electric has recently built six natural gas combustion turbine generators in the northwestern North Dakota area (total of 248 MW of accredited summer capacity) with about another 202 MW coming online in 2016. NorthWestern Energy has added 180 MW of wind since the previous LTRA with the addition of Oak Tree Wind and B&H Wind.

MAPP has 485 MW of firm imports and 1,145 MW of firm exports in summer 2015 and 700 MW of firm imports and 715 MW of firm exports in winter 2015–16. MAPP does not have any expected transfers to report. The duration of firm contracts varies with MAPP reporting 360 MW of firm imports and 750 MW of firm exports in summer 2025 and 666 MW of firm imports and 539 MW of firm exports in winter 2025–26.

Transmission Outlook and System Enhancements

MAPP has 10 miles of transmission line greater than 100 kV under construction and 201 miles of planned transmission line greater than 100 kV expected to be in service by 2017. The installation of a new 230/115 kV transformer at the Rapid City DC tie and construction of a new Rapid City DC tie to Rapid City 115 kV line is scheduled for completion in 2015. These system improvements will allow for the removal of the under-voltage load shedding at Rapid City, South Dakota. A parallel 230/115 kV transformer is scheduled to be installed at Oahe in 2015–16. At the same time, the Oahe 230 kV and 115 kV buses will be converted to double breaker/double bus configurations. Construction of an Ordway South substation and a second Ordway-Groton 115 kV line is scheduled for completion in 2017–18 to alleviate low-voltage concerns at Ordway. The majority of the planned transmission projects in MAPP are to the 345 kV system around Judson. These projects will support load growth in North Dakota.

Long-Term Reliability Issues

In the case of drought, MAPP could see lower expected generation from hydro units as well as base load coal units due to the availability of water for cooling. If there is extended heat, this would also lower the expected generation from the base load coal units due to rising lake temperatures that impact the output of the units.

**STATE OF MINNESOTA
MINNESOTA PUBLIC UTILITIES COMMISSION**

In the Matter of the 2015 Minnesota Biennial
Transmission Projects Report

AFFIDAVIT OF SERVICE

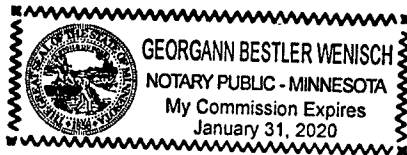
I, Mary Ann Monahan, being first duly sworn on oath say that in the City of Minneapolis, County of Hennepin, in the State of Minnesota, on the 16th day of December, 2015 served by U.S. Mail, pages 42 and 43 of the NERC 2015 Long-Term Assessment, to those persons listed on the attached service list.

Mary Ann Monahan
Mary Ann Monahan

Subscribed and sworn to before me this 16th day of December, 2015.

(SEAL)

Georgann Bestler Wenisch
Notary Public, Hennepin County, Minnesota
My Commission Expires 1-31-2020



Daniel P. Wolf, Executive Secretary
Public Utilities Commission
121 7th Place E., Suite 350
St. Paul, MN 55101-2147

William Grant, Deputy Commissioner
Commerce Department
85 7th Place East Suite 500
St. Paul, MN 55101-2198

Julia Anderson
Office of the Attorney General
1800 BRM Tower
445 Minnesota St.
St. Paul, MN 55101-2134

RUD Division
Attorney General's Office
Suite 1800 Bremer Tower
445 Minnesota Street
St. Paul, MN 55101

Sharon M. Ferguson
Department of Commerce
85 7th Place E., Suite 500
St. Paul, MN 55101-2198