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April 12, 2019

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

Re: In the Matter of Commission Inquiry Into the Impact of Severe Weather
in January and February 2019
Docket No. E,G999/CI-19-160

Dear Mr. Wolf:

Minnesota Power hereby electronically files its response to the Minnesota Public Utilities Commission's inquiry issued on March 18, 2019 in the above-referenced Docket. Minnesota Power is pleased with the performance of its generating fleet, employees and dispatchable customers during this period of extreme cold weather in early 2019. Minnesota Power leveraged its diverse generating fleet to include coal, natural gas, wind and solar resources while also working with both residential and industrial customers to capture the value of Demand Response resources to maintain system reliability.

If you have any questions regarding this filing, please do not hesitate to contact me at the number above.

Respectfully,

Jennifer J. Peterson

JJP:sr
Attach.

STATE OF MINNESOTA
BEFORE THE
MINNESOTA PUBLIC UTILITIES COMMISSION

Docket No. E,G-999/CI-19-160

In the Matter of a Commission Inquiry into
the Impact of Severe Weather in January
and February 2019 on Utility Operations
and Service

**MINNESOTA POWER
COMPLIANCE FILING**

I. INTRODUCTION

On March 18, 2019, the Minnesota Public Utilities Commission (“Commission”) issued a Notice of Comment Period (“Notice”), requesting that Minnesota utilities submit comments by April 12, 2019 addressing the following issues:

What impact did the cold weather in January and February 2019 have on utility operations and service? Were there lessons learned from this severe weather event that can be used to keep utility systems operating reliably and safely under extreme, challenging circumstances in the future?

The Notice is addressed by Minnesota Power (or, “the Company”) in the following comments and attachments. Minnesota Power participated in the Commission’s February 28, 2019 Planning Meeting and has provided an additional update as part of the Midcontinent Independent System Operator (“MISO”) Quarterly Meeting at the Commission on March 29, 2019.

Minnesota Power serves approximately 145,000 customers in northeastern Minnesota and its system experienced a winter peak load of nearly 1720 MW at 6:00 PM on January 29, 2019. During this period of extreme cold weather, some of the coldest temperatures in the state were in Minnesota Power’s service territory, with -56 degrees Fahrenheit recorded in Cotton, Minnesota on January 28, 2019.¹ The Company is extremely proud of its performance during this extreme weather event, as it maintained safety and reliability for both customers and employees while executing its shared purpose of providing security, comfort and quality of life in northeastern Minnesota.

¹ “Cold Outbreak: January 27-31, 2019.” Minnesota Department of Natural Resources.
<https://www.dnr.state.mn.us/climate/journal/cold-outbreak-january-27-31-2019.html>

STATEMENT REGARDING JUSTIFICATION FOR EXCISING TRADE SECRET DATA

Minnesota Power has excised material from this report because of the power supply and resource planning data information. This is highly confidential information relating to Company financial and planning information; Minnesota Power's competitors and vendors would acquire highly confidential commercial information about Minnesota Power if this information were publicly available. In addition, unauthorized disclosure of this information may violate certain federal securities regulations. Minnesota Power follows strict internal procedures to maintain the secrecy of this information. Minnesota Power believes that this statement justifies why the information excised from the attached report and attachments should remain a trade secret under Minn. Stat. § 13.37. Minnesota Power respectfully requests the opportunity to provide additional justification in the event of a challenge to the trade secret designation provided herein.

II. INFORMATION REQUESTED FROM UTILITIES

In the Notice, the Commission requested information from electric utilities on the following topics:

- ***Electric utilities shall provide status of all their generation units, Demand Resources and purchased power agreements from January 28, 2019 to January 31, 2019. The status includes hourly MISO offer price, Economic Maximum MW, Emergency Maximum MW, offered MW, deployed MW, commitment status (FRAC, IRAC, Day Ahead or Real Time), and dispatch status. Also, the status includes unit level fuel availability of primary and secondary source, fuel contract status (firm, non-firm, or on site) of primary and secondary source, and Generating Availability Data System report data.***

During this period of extreme weather, the Company utilized the many diverse resources on its system to maintain reliability, to include both supply side and demand side resources. The response below will outline how Minnesota Power's generators and customers performed. Attachment A provides the detail requested on hourly MISO offer price, economic maximum MW, emergency maximum MW, offered MW, deployed MW, commitment status and dispatch status. Attachment B provides the Generating Availability Data System report for January 28 through January 31, 2019. Attachment C provides information on the Company's Large Power Interruptible Load Modifying Resource – Demand Response ("LMR-DR") capability. Minnesota Power's Dual Fuel demand response is not shown in Attachment C as this is difficult to estimate on an hour-by-hour basis. However, the Company estimates system load was reduced by about 30-35 MW during Dual Fuel curtailments. Finally, all of the Company's purchased power performed as expected. One wind facility did experience cold weather cutouts; however, due to limited wind availability, the impact was not material (see Attachment A for generation details on the performance of Minnesota Power's purchased power contracts).

Boswell Energy Center

The largest portion of Minnesota Power's thermal generating fleet, and only remaining two coal assets, are Boswell Energy Center Units 3 and 4 in Cohasset, Minnesota. Boswell Units 3 and 4 together represent approximately 940 MW of generating capacity, with Minnesota Power's share of the station being 830 MW, and performed well in this time period.² During the extreme weather period, Boswell Units 3 and 4 did not experience any issues related to fuel availability and burned an average of 13,762 tons of coal (primary fuel) per day. Boswell Energy Center's fuel program

² WPPI Energy owns a 20 percent share of Boswell Unit 4.

ensures adequate supplies are delivered to Boswell to meet burn requirements via contracts with minimum and maximum deliveries required on an annual basis. In addition, Boswell Energy Center carries several weeks supply of coal in its main stockpile should deliveries be interrupted, and had a 23 day coal supply during this event.

Natural gas is a secondary fuel for Boswell Units 3 and 4, as it is used for start-up and occasional flame stabilization. Boswell has a firm natural gas pipeline capacity and its gas supply is delivered via the Great Lakes pipeline and Great Lakes did have natural gas available for Boswell during this time period. However, natural gas was not needed for operations. While fuel availability was not an issue of concern in the performance of Boswell Units 3 and 4, this period of extreme weather was the first test of new auxiliary steam systems installed since the early retirement of Boswell Units 1 and 2, co-located in Cohasset, at the end of 2018.³ The new auxiliary steam systems worked as intended, allowing for the strong performance of Boswell Units 3 and 4, the workhorses of Minnesota Power's generating fleet.

Hibbard Renewable Energy Center

The Hibbard Renewable Energy Center ("Hibbard") is a 48 MW, predominantly biomass, generating station in West Duluth. Hibbard provides steam for the nearby Verso Paper Mill, burns approximately 95 percent biomass, allowing nearly all ash produced at Hibbard to be used as a soil amendment on area farmlands. From January 28 to January 31, 2019, Hibbard was unavailable for electric generation as it required natural gas to begin electric operations. From a natural gas perspective, Hibbard is an [TRADE SECRET DATA EXCISED] with the City of Duluth Comfort Systems, the local natural gas utility which serves Hibbard. During the week of the extreme weather, natural gas was not available for Hibbard from the City of Duluth. Because of the lack of fuel availability, Hibbard did not generate electricity during this period.

Laskin Energy Center

Minnesota Power's Laskin Energy Center is located between Aurora and Hoyt Lakes, Minnesota, and represents 110 MW of natural gas generating capacity. Laskin was initially built to power the earliest taconite processing facilities on the Iron Range, and transitioned from burning coal to burning natural gas in 2015. Laskin receives its natural gas supply from the Northern Natural Gas's ("NNG") pipeline system. Laskin does [TRADE SECRET DATA EXCISED]; rather, natural gas is purchased on a [TRADE SECRET DATA EXCISED]. Between January 29 and January 31, 2019, MISO called on both Laskin Units 1 and 2 to generate. Natural gas was available for both units; however Unit 2 did not come on-line as a result of mechanical freeze-up issues unrelated to natural

³ Compliance Filing Regarding the Early Retirement of Boswell Units 1 and 2, Minnesota Power's Integrated Resource Plan, Dated February 20, 2019. Docket No. E015/RP-15-690.

gas availability. Unit 1 generated [TRADE SECRET DATA EXCISED] of natural gas during this period.

Bison Wind Energy Center

The Bison Wind Energy Center consists of 165 wind turbines which total approximately 500 MW of capacity in south-central North Dakota. During the period of extreme weather, as is a normal course of operations for intermittent resources, the lack of wind resource was the prevailing limiter for Bison and not the impact of the weather on the turbines. The energy output at Bison varied from 0 MW up to 472 MW during this period. Notably, on January 29 starting at 2:00 PM, while Minnesota Power's demand was increasing, Bison generation started to decrease from the max generation of the day at around 450 MW. Within a 10 hour period Bison generation decreased from 450 MW down to zero output. Across the MISO footprint there was also a decrease in wind generation during this period; within a 24 hour period wind generation decreased by 10,000 MW across MISO. However, it was not as drastic as what was experienced on Minnesota Power's system. The reality that intermittent generation, such as wind, can fluctuate significantly during critical periods on the system demonstrates that flexible energy resources must be available to maintain reliability.

Taconite Ridge Wind Energy Center

Minnesota Power's Taconite Ridge is located near the Minntac Mine in Mountain Iron, Minnesota and consists of 25 MW of generating capacity. Unlike Bison in North Dakota, the Taconite Ridge wind turbines were adversely affected by the weather. Each of the ten turbines have cold weather packages, but the temperatures were so low that the turbines were in lock out mode. The output at Taconite Ridge varied from 0 MW up to 12 MW during this period.

Hydroelectric Resources

As the state's largest producer of hydroelectric power with federally licensed facilities along five rivers in northern Minnesota, Minnesota Power has a hydro generating capacity of approximately 115 MW. The Company's hydro resources were available during this period. The 70 MW Thomson and 12 MW Fond du Lac hydro facilities used their ponding capability to generate energy during the critical periods. The remaining hydro facilities, which are mostly located behind the meter, are "run of river" and were dependent on water availability.

Camp Ripley Solar Array

Minnesota Power owns and operates a 10 MW utility scale solar array at Camp Ripley, near Little Falls, Minnesota. The Company does have cold weather packages for the DC inverters at the project and the solar generation equipment was not limited by cold weather. However, like Bison, the Camp Ripley Solar Project was limited during this time period by snow and cloud cover, as is

normal during winter weather patterns. On January 28, 2019, Camp Ripley's capacity factor was 15 percent, and there was no generation available on January 29 when Minnesota Power's system peaked at 6:00 PM.

Load Modifying Resources – Demand Response

During the period of extreme weather, Minnesota Power effectively deployed approximately 235 MW of demand response to support reliability on its system. In this large amount of demand response, 200 MW came from industrial customers curtailing their operations and 35 MW came from residential and commercial customers who participate in the Company's Dual Fuel program. Minnesota Power realizes calling on this customer resource has implications for participants, but the Company is proud of how all participating customers performed to help maintain overall system reliability. Minnesota Power is also proposing enhancements to its large power demand response offerings in Docket No. E015/M-18-735 to lengthen the customer contract period and ensure the Company can continue to count on this significant resource in future years.

In Attachment C, the "LMR-DR Load" column is the aggregate electric load of Minnesota Power's five LMR-DR customers. The "Deployed LMR-DR" column is the amount of Minnesota Power's MISO accredited LMR-DR resources that were given and responded to emergency scheduling instructions provided by MISO on only January 30, 2019. The "DR Available" column includes the level of LMR-DR resources Minnesota Power had available to MISO.

- ***Electric utilities shall provide hourly day ahead Wind and Solar energy production forecast and forecast parameters used to produce the forecast.***

Please see Attachment A for a detailed hourly day ahead wind and solar production forecast and the parameters used to produce the forecast. The parameters used to generate the forecast are either purchased from a third party (for Bison), produced by the operator of the facility (as is the case for Oliver Wind PPAs), or developed in-house (for Camp Ripley).

- ***Electric utilities shall provide wind and solar temperature cutoff thresholds for each MISO EP Node.***

Minnesota Power's Bison and Taconite Ridge wind generation facilities use Siemens and Clipper manufactured wind turbines, respectively, and both of these technologies have cold weather packages installed. The packages are defined as "stand still survivability" and "operational survivability". Effectively, the cold weather package allows the units to operate at temperatures down to -30 C (-22 F). At temperatures below -22 F the wind turbines are curtailed to protect the equipment.

The Company's utility scale solar system, the Camp Ripley Solar Array, cold weather packages are installed on the DC inverters. The equipment for the solar system is able to operate in cold weather, though the original equipment manufacturer does not guarantee performance below -30 C (-22 F).

From all utilities, the Commission requested information on the following topics:

- ***The utilities shall provide details of how the Commission could help convey messages to the public during such an event.***

Minnesota Power does not have a specific proposal for the Commission to convey messages to the public but very much appreciates the discussion of how the Commission could help in communicating to the public. This is a topic that could warrant a technical conference to have the appropriate communications and operations personnel addressing the best available approaches. During the severe weather event, Minnesota Power did not make a specific plea to its customers to reduce load. However, there was media coverage of Dual Fuel Program customer interruptions. Minnesota Power does utilize social media platforms and an app to notify customers regarding outages, which may be a way to convey messages to the public during future similar events.

- ***Utilities shall provide an account of lessons learned and steps to be taken to help prepare for the next severe weather event. Example: Was there anything learned about the functioning of Excess Flow Valves and Regulators that can be used to prevent natural gas outages in the future?***

Since MISO has not declared a Max Gen Event Step 2 a-b and NERC EEA 2 emergency event in MISO North in over a decade, there were several lessons learned related to Demand Response. On January 30, 2019 MISO sent several electronic communications to Minnesota Power that contained different interruptible levels. The Company learned how MISO utilizes their Communication System (MCS) to call for load modifying resources and to provide updated training for the System Operators during emergency events. Other steps that are being taken to prepare for the next severe weather event include updating internal procedures and providing customer education on MISO emergency steps and what communication they will receive from Minnesota Power.

Minnesota Power also strives to utilize effective emergency management principles and protocols that enhance the ability to provide safe and reliable energy service. The Company has developed and maintains a comprehensive set of risk mitigation plans to prepare for, respond to and

recover from emergencies while informing stakeholders of all types of business interruption incidents that might occur. Minnesota Power has established an Emergency Response Plan (“ERP”) for the purpose of managing outages caused by storms and other weather related events, natural disasters, civil unrest, major equipment failure, or other emergency events - and to recover from them expeditiously. The ERP is intended to be simple, flexible and readily adaptable to any type of Emergency Event. It also provides the framework for the orderly response and concise role definition for company resources during emergency events. The plan is focused on public safety, workforce safety and the safety of outside aid. The ERP has a structure that is both scalable and malleable to a variety of emergency situations and can fit in with local, county, state, and national response efforts. This scalable approach to emergency events allows MP to manage them at the strategic, tactical or operational level based upon their type, severity and impact.

In preparation for the extreme weather event, Minnesota Power did have substation technicians perform their fall preventative maintenance, which included inspecting heaters, breaker tanks and building heaters, in addition to checking oil levels in transformers. This also included installing over 40 new transmission breaker heating blankets. The preventative maintenances helped limit the number of low oil and gas alarms on equipment and reduced the number of call outs. System Operations also utilized both MISO’s and its own real-time analysis tool (State Estimator and Contingency Analysis) to help proactively identify any issues that would occur because of transmission equipment outages that occurred from the cold. However, despite the preventative work, field personnel did still respond to numerous alarms from transmission and substation equipment.

Although System Operators are trained each year on emergency procedures, a real time response yields productive lessons learned. Minnesota Power is reviewing its emergency procedures to make them easier for System Operators to follow when they are needed.

Within the Company’s Transmission and Distribution Line Operations department, the following procedures and best practices were either reviewed or implemented prior to and during the extreme weather event in early 2019:

- 1) Reviewed response and recovery plans, including previous lessons learned;
- 2) Ensured supply chain availability for critical spare parts;
- 3) Reviewed communication plan to line workers about prioritizing restoration to critical infrastructure (to include hospitals, nursing homes, police, fire, ambulance, water pumping stations, media outlets, etc.);
- 4) Ensure the safety of employees by deploying pairs of employees who would normally work alone;

- 5) If a larger crew response is needed, Minnesota Power deploys additional employees so the crew can rotate out of extreme weather and limit exposure time;
- 6) Monitor current and future weather conditions to determine what level of talent and response may be needed and proactively contact employees;
- 7) Monitor future weather conditions to return the electric grid back to its normal configuration, if possible, in situations where it has been re-configured for construction or maintenance purposed prior to an incoming weather event
- 8) Request Fleet Maintenance personnel prepare the fleet for operating in extreme cold prior to incoming weather.

▪ ***Please provide any other information that would be helpful to the Commission's understanding of these issues.***

▪ As stated by Vice President of Generation Josh Skelton during the February 28, 2019 Commission planning meeting, Minnesota Power employees take great pride in their shared purpose of providing security, comfort and quality of life to the people of northeastern Minnesota. Minnesota Power experienced an average number of trouble calls and no extraordinary system outages, a testament to its preventative maintenance program, emergency procedures and talented employees. The photo to the right is an example of these dedicated employees at work, maintaining reliability and literally keeping the lights and heat on for their customers. The photo was taken of a line crew making repairs to a power pole near Hoyt Lakes, Minnesota, shortly after 1:00 AM, after working more than nineteen hours in the bitter cold.



III. CONCLUSION

Minnesota Power is pleased with the performance of its generating fleet, employees and dispatchable customers during this period of extreme cold weather in early 2019. As outlined throughout this filing, Minnesota Power did not experience any extraordinary system outages while reacting to some of the coldest weather in the state, with temperatures below -50 degrees Fahrenheit. The Company leveraged its diverse generating fleet to include coal, natural gas, wind and solar resources while also working with both residential and industrial customers to capture the value of Demand Response resources to maintain system reliability. Minnesota Power is also proud of its talented and dedicated employees, who safely ensured customers in northeastern Minnesota remained warm during this extreme weather.

Dated: April 12, 2019

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Jennifer J. Peterson", with a stylized flourish at the end.

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Attachment A
Page 1 of 30

Modi	Localtime	Localtime Est	Locality	Houring
MP BISON1	1/28/2019 1:00	1/28/2019 2:00	1/28/2019 0:00	
MP BISON1	1/28/2019 2:00	1/28/2019 3:00	1/28/2019 0:00	
MP BISON1	1/28/2019 3:00	1/28/2019 4:00	1/28/2019 0:00	
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Cleared	RT	DA	DA	RT	Actual	Commit	Segment	Segment	Segment	Segment	Segment	Segment	Segment	Segment	Segment	Segment	Segment	Primary Fuel	Fuel Contract	
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PUBLIC DOCUMENT
TRADE SECRET DATA EXCISED

Attachment A
Page 2 of 30

Mmi Nodename	Localtime	Localtime Est	Localday	Hour ending	Cleared																Segment 1 MW	Segment 1 Price	Segment 2 MW	Segment 2 Price	Segment 3 MW	Segment 3 Price	Segment 4 MW	Segment 4 Price	Segment 5 MW	Segment 5 Price	Segment 6 MW	Segment 6 Price	Primary Fuel Availability	Fuel Contract Status
					Mwh	Dispmx	Dispmx	Emmax	Emmax	Mwh	Status	1 MW	1 Price	2 MW	2 Price	3 MW	3 Price	4 MW	4 Price	5 MW														
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MP.BLNCHRI23	1/28/2019 15:00	1/28/2019 16:00	1/28/2019 0:00	15																													Water	Water Dependant
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MP.BLNCHRI23	1/28/2019 17:00	1/28/2019 18:00	1/28/2019 0:00	17																													Water	Water Dependant
MP.BLNCHRI23	1/28/2019 18:00	1/28/2019 19:00	1/28/2019 0:00	18																													Water	Water Dependant
MP.BLNCHRI23	1/28/2019 19:00	1/28/2019 20:00	1/28/2019 0:00	19																													Water	Water Dependant
MP.BLNCHRI23	1/28/2019 20:00	1/28/2019 21:00	1/28/2019 0:00	20																													Water	Water Dependant
MP.BLNCHRI23	1/28/2019 21:00	1/28/2019 22:00	1/28/2019 0:00	21																													Water	Water Dependant
MP.BLNCHRI23	1/28/2019 22:00	1/28/2019 23:00	1/28/2019 0:00	22																													Water	Water Dependant
MP.BLNCHRI23	1/28/2019 23:00	1/29/2019 0:00	1/29/2019 0:00	23																													Water	Water Dependant
MP.BLNCHRI23	1/29/2019 0:00	1/29/2019 1:00	1/29/2019 0:00	24																													Water	Water Dependant
MP.BLNCHRI23	1/29/2019 1:00	1/29/2019 2:00	1/29/2019 0:00	1																													Water	Water Dependant
MP.BLNCHRI23	1/29/2019 2:00	1/29/2019 3:00	1/29/2019 0:00	2																													Water	Water Dependant
MP.BLNCHRI23	1/29/2019 3:00	1/29/2019 4:00	1/29/2019 0:00	3																													Water	Water Dependant
MP.BLNCHRI23	1/29/2019 4:00	1/29/2019 5:00	1/29/2019 0:00	4																													Water	Water Dependant
MP.BLNCHRI23	1/29/2019 5:00	1/29/2019 6:00	1/29/2019 0:00	5																													Water	Water Dependant
MP.BLNCHRI23	1/29/2019 6:00	1/29/2019 7:00	1/29/2019 0:00	6																													Water	Water Dependant
MP.BLNCHRI23	1/29/2019 7:00	1/29/2019 8:00	1/29/2019 0:00	7																													Water	Water Dependant
MP.BLNCHRI23	1/29/2019 8:00	1/29/2019 9:00	1/29/2019 0:00	8																													Water	Water Dependant
MP.BLNCHRI23	1/29/2019 9:00	1/29/2019 10:00	1/29/2019 0:00	9																													Water	Water Dependant
MP.BLNCHRI23	1/29/2019 10:00	1/29/2019 11:00	1/29/2019 0:00	10																													Water	Water Dependant
MP.BLNCHRI23	1/29/2019 11:00	1/29/2019 12:00	1/29/2019 0:00	11																													Water	Water Dependant
MP.BLNCHRI23	1/29/2019 12:00	1/29/2019 13:00	1/29/2019 0:00	12																													Water	Water Dependant
MP.BLNCHRI23	1/29/2019 13:00	1/29/2019 14:00	1/29/2019 0:00	13																													Water	Water Dependant
MP.BLNCHRI23	1/29/2019 14:00	1/29/2019 15:00	1/29/2019 0:00	14																													Water	Water Dependant
MP.BLNCHRI23	1/29/2019 15:00	1/29/2019 16:00	1/29/2019 0:00	15																													Water	Water Dependant
MP.BLNCHRI23	1/29/2019 16:00	1/29/2019 17:00	1/29/2019 0:00	16																													Water	Water Dependant
MP.BLNCHRI23	1/29/2019 17:00	1/29/2019 18:00	1/29/2019 0:00	17																													Water	Water Dependant
MP.BLNCHRI23	1/29/2019 18:00	1/29/2019 19:00	1/29/2019 0:00	18																													Water	Water Dependant
MP.BLNCHRI23	1/29/2019 19:00	1/29/2019 20:00	1/29/2019 0:00	19																													Water	Water Dependant
MP.BLNCHRI23	1/29/2019 20:00	1/29/2019 21:00	1/29/2019 0:00	20																													Water	Water Dependant
MP.BLNCHRI23	1/29/2019 21:00	1/29/2019 22:00	1/29/2019 0:00	21																													Water	Water Dependant
MP.BLNCHRI23	1/29/2019 22:00	1/29/2019 23:00	1/29/2019 0:00	22																													Water	Water Dependant
MP.BLNCHRI23	1/29/2019 23:00	1/31/2019 0:00	1/30/2019 0:00	23																													Water	Water Dependant
MP.BLNCHRI23	1/31/2019 0:00	1/31/2019 1:00	1/30/2019 0:00	24																													Water	Water Dependant
MP.BLNCHRI23	1/31/2019 1:00	1/31/2019 2:00	1/31/2019 0:00	1																													Water	Water Dependant
MP.BLNCHRI23	1/31/2019 2:00	1/31/2019 3:00	1/31/2019 0:00	2																													Water	Water Dependant
MP.BLNCHRI23	1/31/2019 3:00	1/31/2019 4:00	1/31/2019 0:00	3																													Water	Water Dependant
MP.BLNCHRI23	1/31/2019 4:00	1/31/2019 5:00	1/31/2019 0:00	4																													Water	Water Dependant
MP.BLNCHRI23	1/31/2019 5:00	1/31/2019 6:00	1/31/2019 0:00	5																													Water	Water Dependant
MP.BLNCHRI23	1/31/2019 6:00	1/31/2019 7:00	1/31/2019 0:00	6																													Water	Water Dependant
MP.BLNCHRI23	1/31/2019 7:00	1/31/2019 8:00	1/31/2019 0:00	7																													Water	Water Dependant
MP.BLNCHRI23	1/31/2019 8:00	1/31/2019 9:00	1/31/2019 0:00	8																													Water	Water Dependant
MP.BLNCHRI23	1/31/2019 9:00	1/31/2019 10:00	1/31/2019 0:00	9																													Water	Water Dependant
MP.BLNCHRI23	1/31/2019 10:00	1/31/2019 11:00	1/31/2019 0:00	10																													Water	Water Dependant
MP.BLNCHRI23	1/31/2019 11:00	1/31/2019 12:00	1/31/2019 0:00	11																													Water	Water Dependant
MP.BLNCHRI23	1/31/2019 12:00	1/31/2019 13:00	1/31/2019 0:00	12																													Water	Water Dependant
MP.BLNCHRI23	1/31/2019 13:00	1/31/2019 14:00	1/31/2019 0:00	13																													Water	Water Dependant
MP.BLNCHRI23	1/31/2019 14:00	1/31/2019 15:00	1/31/2019 0:00	14																													Water	Water Dependant
MP.BLNCHRI23	1/31/2019 15:00	1/31/2019 16:00	1/31/2019 0:00	15																													Water	Water Dependant
MP.BLNCHRI23	1/31/2019 16:00	1/31/2019 17:00	1/31/2019 0:00	16																													Water	Water Dependant
MP.BLNCHRI23	1/31/2019 17:00	1/31/2019 18:00	1/31/2019 0:00	17																													Water	Water Dependant
MP.BLNCHRI23	1/31/2019 18:00	1/31/2019 19:00	1/31/2019 0:00	18																													Water	Water Dependant
MP.BLNCHRI23	1/31/2019 19:00	1/31/2019 20:00	1/31/2019 0:00	19																													Water	Water Dependant
MP.BLNCHRI23	1/31/2019 20:00	1/31/2019 21:00	1/31/2019 0:00	20																													Water	Water Dependant
MP.BLNCHRI23	1/31/2019 21:00	1/31/2019 22:00	1/31/2019 0:00	21																													Water	Water Dependant
MP.BLNCHRI23	1/31/2019 22:00	1/31/2019 23:00	1/31/2019 0:00	22																													Water	Water Dependant
MP.BLNCHRI23	1/31/2019 23:00	2/1/2019 0:00	1/31/2019 0:00	23																													Water	Water Dependant
MP.BLNCHRI23	2/1/2019 0:00	2/1/2019 1:00	1/31/2019 0:00	24																													Water	Water Dependant

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NodeName	Localtime	Localtime Est	Localday	Hour	nd	Cleared Mwh	RT Dispmx	DA Dispmx	DA Emmax	RT Emmax	Actual Mwh	Commit Status	Segment 1 MW	Segment 1 Price	Segment 2 MW	Segment 2 Price	Segment 3 MW	Segment 3 Price	Segment 4 MW	Segment 4 Price	Segment 5 MW	Segment 5 Price	Segment 6 MW	Segment 6 Price	Primary Fuel Availability	Contract Status	
[TRADE SECRET DATA EXCISED]																											
MP.B05233	1/28/2019 1:00		1/28/2019 2:00	1/28/2019 0:00	1																					Coal Available	On Site
MP.B05233	1/28/2019 2:00	1/28/2019 3:00	1/28/2019 0:00	2																						Coal Available	On Site
MP.B05233	1/28/2019 3:00	1/28/2019 4:00	1/28/2019 0:00	3																						Coal Available	On Site
MP.B05233	1/28/2019 4:00	1/28/2019 5:00	1/28/2019 0:00	4																						Coal Available	On Site
MP.B05233	1/28/2019 5:00	1/28/2019 6:00	1/28/2019 0:00	5																						Coal Available	On Site
MP.B05233	1/28/2019 6:00	1/28/2019 7:00	1/28/2019 0:00	6																						Coal Available	On Site
MP.B05233	1/28/2019 7:00	1/28/2019 8:00	1/28/2019 0:00	7																						Coal Available	On Site
MP.B05233	1/28/2019 8:00	1/28/2019 9:00	1/28/2019 0:00	8																						Coal Available	On Site
MP.B05233	1/28/2019 9:00	1/28/2019 10:00	1/28/2019 0:00	9																						Coal Available	On Site
MP.B05233	1/28/2019 10:00	1/28/2019 11:00	1/28/2019 0:00	10																						Coal Available	On Site
MP.B05233	1/28/2019 11:00	1/28/2019 12:00	1/28/2019 0:00	11																						Coal Available	On Site
MP.B05233	1/28/2019 12:00	1/28/2019 13:00	1/28/2019 0:00	12																						Coal Available	On Site
MP.B05233	1/28/2019 13:00	1/28/2019 14:00	1/28/2019 0:00	13																						Coal Available	On Site
MP.B05233	1/28/2019 14:00	1/28/2019 15:00	1/28/2019 0:00	14																						Coal Available	On Site
MP.B05233	1/28/2019 15:00	1/28/2019 16:00	1/28/2019 0:00	15																						Coal Available	On Site
MP.B05233	1/28/2019 16:00	1/28/2019 17:00	1/28/2019 0:00	16																						Coal Available	On Site
MP.B05233	1/28/2019 17:00	1/28/2019 18:00	1/28/2019 0:00	17																						Coal Available	On Site
MP.B05233	1/28/2019 18:00	1/28/2019 19:00	1/28/2019 0:00	18																						Coal Available	On Site
MP.B05233	1/28/2019 19:00	1/28/2019 20:00	1/28/2019 0:00	19																						Coal Available	On Site
MP.B05233	1/28/2019 20:00	1/28/2019 21:00	1/28/2019 0:00	20																						Coal Available	On Site
MP.B05233	1/28/2019 21:00	1/28/2019 22:00	1/28/2019 0:00	21																						Coal Available	On Site
MP.B05233	1/28/2019 22:00	1/28/2019 23:00	1/28/2019 0:00	22																						Coal Available	On Site
MP.B05233	1/29/2019 0:00	1/29/2019 1:00	1/29/2019 0:00	24																						Coal Available	On Site
MP.B05233	1/29/2019 1:00	1/29/2019 2:00	1/29/2019 0:00	1																						Coal Available	On Site
MP.B05233	1/29/2019 2:00	1/29/2019 3:00	1/29/2019 0:00	2																						Coal Available	On Site
MP.B05233	1/29/2019 3:00	1/29/2019 4:00	1/29/2019 0:00	3																						Coal Available	On Site
MP.B05233	1/29/2019 4:00	1/29/2019 5:00	1/29/2019 0:00	4																						Coal Available	On Site
MP.B05233	1/29/2019 5:00	1/29/2019 6:00	1/29/2019 0:00	5																						Coal Available	On Site
MP.B05233	1/29/2019 6:00	1/29/2019 7:00	1/29/2019 0:00	6																						Coal Available	On Site
MP.B05233	1/29/2019 7:00	1/29/2019 8:00	1/29/2019 0:00	7																						Coal Available	On Site
MP.B05233	1/29/2019 8:00	1/29/2019 9:00	1/29/2019 0:00	8																						Coal Available	On Site
MP.B05233	1/29/2019 9:00	1/29/2019 10:00	1/29/2019 0:00	9																						Coal Available	On Site
MP.B05233	1/29/2019 10:00	1/29/2019 11:00	1/29/2019 0:00	10																						Coal Available	On Site
MP.B05233	1/29/2019 11:00	1/29/2019 12:00	1/29/2019 0:00	11																						Coal Available	On Site
MP.B05233	1/29/2019 12:00	1/29/2019 13:00	1/29/2019 0:00	12																						Coal Available	On Site
MP.B05233	1/29/2019 13:00	1/29/2019 14:00	1/29/2019 0:00	13																						Coal Available	On Site
MP.B05233	1/29/2019 14:00	1/29/2019 15:00	1/29/2019 0:00	14																						Coal Available	On Site
MP.B05233	1/29/2019 15:00	1/29/2019 16:00	1/29/2019 0:00	15																						Coal Available	On Site
MP.B05233	1/29/2019 16:00	1/29/2019 17:00	1/29/2019 0:00	16																						Coal Available	On Site
MP.B05233	1/29/2019 17:00	1/29/2019 18:00	1/29/2019 0:00	17																						Coal Available	On Site
MP.B05233	1/29/2019 18:00	1/29/2019 19:00	1/29/2019 0:00	18																						Coal Available	On Site
MP.B05233	1/29/2019 19:00	1/29/2019 20:00	1/29/2019 0:00	19																						Coal Available	On Site
MP.B05233	1/29/2019 20:00	1/29/2019 21:00	1/29/2019 0:00	20																						Coal Available	On Site
MP.B05233	1/29/2019 21:00	1/29/2019 22:00	1/29/2019 0:00	21																						Coal Available	On Site
MP.B05233	1/29/2019 22:00	1/29/2019 23:00	1/29/2019 0:00	22																						Coal Available	On Site
MP.B05233	1/30/2019 0:00	1/30/2019 1:00	1/30/2019 0:00	23																						Coal Available	On Site
MP.B05233	1/30/2019 1:00	1/31/2019 2:00	1/31/2019 0:00	1																						Coal Available	On Site
MP.B05233	1/31/2019 2:00	1/31/2019 3:00	1/31/2019 0:00	2																						Coal Available	On Site
MP.B05233	1/31/2019 3:00	1/31/2019 4:00	1/31/2019 0:00	3																						Coal Available	On Site
MP.B05233	1/31/2019 4:00	1/31/2019 5:00	1/31/2019 0:00	4																						Coal Available	On Site
MP.B05233	1/31/2019 5:00	1/31/2019 6:00	1/31/2019 0:00	5																						Coal Available	On Site
MP.B05233	1/31/2019 6:00	1/31/2019 7:00	1/31/2019 0:00	6																						Coal Available	On Site
MP.B05233	1/31/2019 7:00	1/31/2019 8:00	1/31/2019 0:00	7																						Coal Available	On Site
MP.B05233	1/31/2019 8:00	1/31/2019 9:00	1/31/2019 0:00	8																						Coal Available	On Site
MP.B05233	1/31/2019 9:00	1/31/2019 10:00	1/31/2019 0:00	9																						Coal Available	On Site
MP.B05233	1/31/2019 10:00	1/31/2019 11:00	1/31/2019 0:00	10																						Coal Available	On Site
MP.B05233	1/31/2019 11:00	1/31/2019 12:00	1/31/2019 0:00	11																						Coal Available	On Site
MP.B05233	1/31/2019 12:00	1/31/2019 13:00	1/31/2019 0:00	12																						Coal Available	On Site
MP.B05233	1/31/2019 13:00	1/31/2019 14:00	1/31/2019 0:00	13																						Coal Available	On Site
MP.B05233	1/31/2019 14:00	1/31/2019 15:00	1/31/2019 0:00	14																						Coal Available	On Site
MP.B05233	1/31/2019 15:00	1/31/2019 16:00	1/31/2019 0:00	15																						Coal Available	On Site
MP.B05233	1/31/2019 16:00	1/31/2019 17:00	1/31/2019 0:00	16																						Coal Available	On Site
MP.B05233	1/31/2019 17:00	1/31/2019 18:00	1/31/2019 0:00	17																						Coal Available	On Site
MP.B05233	1/31/2019 18:00	1/31/2019 19:00	1/31/2019 0:00	18																						Coal Available	On Site
MP.B05233	1/31/2019 19:00	1/31/2019 20:00	1/31/2019 0:00	19																						Coal Available	On Site
MP.B05233	1/31/2019 20:00	1/31/2019 21:00	1/31/2019 0:00	20																						Coal Available	On Site
MP.B05233	1/31/2019 21:00	1/31/2019 22:00	1/31/2019 0:00	21																						Coal Available	On Site
MP.B05233	1/31/2019 22:00	1/31/2019 23:00	1/31/2019 0:00																								

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Mmi	Locatime	Locatime Est	Locaday	Hourse ng	Cleared Mwh	RT Dispmx	DA Dispmx	DA Emmax	RT Emmax	Actual Mwh	Commit Status	Segment 1 MW	Segment 1 Price	Segment 2 MW	Segment 2 Price	Segment 3 MW	Segment 3 Price	Segment 4 MW	Segment 4 Price	Segment 5 MW	Segment 5 Price	Segment 6 MW	Segment 6 Price	Primary Fuel Availability	Fuel Contract Status
TRADE SECRET DATA EXCISED																									
MP_MP_B054	1/28/2019 1:00	1/28/2019 2:00	1/28/2019 0:00	1																				Coal - Available	On Site
MP_MP_B054	1/28/2019 2:00	1/28/2019 3:00	1/28/2019 0:00	2																				Coal - Available	On Site
MP_MP_B054	1/28/2019 3:00	1/28/2019 4:00	1/28/2019 0:00	3																				Coal - Available	On Site
MP_MP_B054	1/28/2019 4:00	1/28/2019 5:00	1/28/2019 0:00	4																				Coal - Available	On Site
MP_MP_B054	1/28/2019 5:00	1/28/2019 6:00	1/28/2019 0:00	5																				Coal - Available	On Site
MP_MP_B054	1/28/2019 6:00	1/28/2019 7:00	1/28/2019 0:00	6																				Coal - Available	On Site
MP_MP_B054	1/28/2019 7:00	1/28/2019 8:00	1/28/2019 0:00	7																				Coal - Available	On Site
MP_MP_B054	1/28/2019 8:00	1/28/2019 9:00	1/28/2019 0:00	8																				Coal - Available	On Site
MP_MP_B054	1/28/2019 9:00	1/28/2019 10:00	1/28/2019 0:00	9																				Coal - Available	On Site
MP_MP_B054	1/28/2019 10:00	1/28/2019 11:00	1/28/2019 0:00	10																				Coal - Available	On Site
MP_MP_B054	1/28/2019 11:00	1/28/2019 12:00	1/28/2019 0:00	11																				Coal - Available	On Site
MP_MP_B054	1/28/2019 12:00	1/28/2019 13:00	1/28/2019 0:00	12																				Coal - Available	On Site
MP_MP_B054	1/28/2019 13:00	1/28/2019 14:00	1/28/2019 0:00	13																				Coal - Available	On Site
MP_MP_B054	1/28/2019 14:00	1/28/2019 15:00	1/28/2019 0:00	14																				Coal - Available	On Site
MP_MP_B054	1/28/2019 15:00	1/28/2019 16:00	1/28/2019 0:00	15																				Coal - Available	On Site
MP_MP_B054	1/28/2019 16:00	1/28/2019 17:00	1/28/2019 0:00	16																				Coal - Available	On Site
MP_MP_B054	1/28/2019 17:00	1/28/2019 18:00	1/28/2019 0:00	17																				Coal - Available	On Site
MP_MP_B054	1/28/2019 18:00	1/28/2019 19:00	1/28/2019 0:00	18																				Coal - Available	On Site
MP_MP_B054	1/28/2019 19:00	1/28/2019 20:00	1/28/2019 0:00	19																				Coal - Available	On Site
MP_MP_B054	1/28/2019 20:00	1/28/2019 21:00	1/28/2019 0:00	20																				Coal - Available	On Site
MP_MP_B054	1/28/2019 21:00	1/28/2019 22:00	1/28/2019 0:00	21																				Coal - Available	On Site
MP_MP_B054	1/28/2019 22:00	1/28/2019 23:00	1/28/2019 0:00	22																				Coal - Available	On Site
MP_MP_B054	1/28/2019 23:00	1/29/2019 0:00	1/28/2019 0:00	23																				Coal - Available	On Site
MP_MP_B054	1/29/2019 0:00	1/29/2019 1:00	1/29/2019 0:00	1																				Coal - Available	On Site
MP_MP_B054	1/29/2019 1:00	1/29/2019 2:00	1/29/2019 0:00	2																				Coal - Available	On Site
MP_MP_B054	1/29/2019 2:00	1/29/2019 3:00	1/29/2019 0:00	3																				Coal - Available	On Site
MP_MP_B054	1/29/2019 3:00	1/29/2019 4:00	1/29/2019 0:00	4																				Coal - Available	On Site
MP_MP_B054	1/29/2019 4:00	1/29/2019 5:00	1/29/2019 0:00	5																				Coal - Available	On Site
MP_MP_B054	1/29/2019 5:00	1/29/2019 6:00	1/29/2019 0:00	6																				Coal - Available	On Site
MP_MP_B054	1/29/2019 6:00	1/29/2019 7:00	1/29/2019 0:00	7																				Coal - Available	On Site
MP_MP_B054	1/29/2019 7:00	1/29/2019 8:00	1/29/2019 0:00	8																				Coal - Available	On Site
MP_MP_B054	1/29/2019 8:00	1/29/2019 9:00	1/29/2019 0:00	9																				Coal - Available	On Site
MP_MP_B054	1/29/2019 9:00	1/29/2019 10:00	1/29/2019 0:00	10																				Coal - Available	On Site
MP_MP_B054	1/29/2019 10:00	1/29/2019 11:00	1/29/2019 0:00	11																				Coal - Available	On Site
MP_MP_B054	1/29/2019 11:00	1/29/2019 12:00	1/29/2019 0:00	12																				Coal - Available	On Site
MP_MP_B054	1/29/2019 12:00	1/29/2019 13:00	1/29/2019 0:00	13																				Coal - Available	On Site
MP_MP_B054	1/29/2019 13:00	1/29/2019 14:00	1/29/2019 0:00	14																				Coal - Available	On Site
MP_MP_B054	1/29/2019 14:00	1/29/2019 15:00	1/29/2019 0:00	15																				Coal - Available	On Site
MP_MP_B054	1/29/2019 15:00	1/29/2019 16:00	1/29/2019 0:00	16																				Coal - Available	On Site
MP_MP_B054	1/29/2019 16:00	1/29/2019 17:00	1/29/2019 0:00	17																				Coal - Available	On Site
MP_MP_B054	1/29/2019 17:00	1/29/2019 18:00	1/29/2019 0:00	18																				Coal - Available	On Site
MP_MP_B054	1/29/2019 18:00	1/29/2019 19:00	1/29/2019 0:00	19																				Coal - Available	On Site
MP_MP_B054	1/29/2019 19:00	1/29/2019 20:00	1/29/2019 0:00	20																				Coal - Available	On Site
MP_MP_B054	1/29/2019 20:00	1/29/2019 21:00	1/29/2019 0:00	21																				Coal - Available	On Site
MP_MP_B054	1/29/2019 21:00	1/29/2019 22:00	1/29/2019 0:00	22																				Coal - Available	On Site
MP_MP_B054	1/29/2019 22:00	1/29/2019 23:00	1/29/2019 0:00	23																				Coal - Available	On Site
MP_MP_B054	1/30/2019 0:00	1/30/2019 1:00	1/30/2019 0:00	24																				Coal - Available	On Site
MP_MP_B054	1/30/2019 1:00	1/30/2019 2:00	1/30/2019 0:00	1																				Coal - Available	On Site
MP_MP_B054	1/30/2019 2:00	1/30/2019 3:00	1/30/2019 0:00	2																				Coal - Available	On Site
MP_MP_B054	1/30/2019 3:00	1/30/2019 4:00	1/30/2019 0:00	3																				Coal - Available	On Site
MP_MP_B054	1/30/2019 4:00	1/30/2019 5:00	1/30/2019 0:00	4																				Coal - Available	On Site
MP_MP_B054	1/30/2019 5:00	1/30/2019 6:00	1/30/2019 0:00	5																				Coal - Available	On Site
MP_MP_B054	1/30/2019 6:00	1/30/2019 7:00	1/30/2019 0:00	6																				Coal - Available	On Site
MP_MP_B054	1/30/2019 7:00	1/30/2019 8:00	1/30/2019 0:00	7																				Coal - Available	On Site
MP_MP_B054	1/30/2019 8:00	1/30/2019 9:00	1/30/2019 0:00	8																				Coal - Available	On Site
MP_MP_B054	1/30/2019 9:00	1/30/2019 10:00	1/30/2019 0:00	9																				Coal - Available	On Site
MP_MP_B054	1/30/2019 10:00	1/30/2019 11:00	1/30/2019 0:00	10																				Coal - Available	On Site
MP_MP_B054	1/30/2019 11:00	1/30/2019 12:00	1/30/2019 0:00	11																				Coal - Available	On Site
MP_MP_B054	1/30/2019 12:00	1/30/2019 13:00	1/30/2019 0:00	12																				Coal - Available	On Site
MP_MP_B054	1/30/2019 13:00	1/30/2019 14:00	1/30/2019 0:00	13																				Coal - Available	On Site
MP_MP_B054	1/30/2019 14:00	1/30/2019 15:00	1/30/2019 0:00	14																				Coal - Available	On Site
MP_MP_B054	1/30/2019 15:00	1/30/2019 16:00	1/30/2019 0:00	15																				Coal - Available	On Site
MP_MP_B054	1/30/2019 16:00	1/30/2019 17:00	1/30/2019 0:00	16																				Coal - Available	On Site
MP_MP_B054	1/30/2019 17:00	1/30/2019 18:00	1/30/2019 0:00	17																				Coal - Available	On Site
MP_MP_B054	1/30/2019 18:00	1/30/2019 19:00	1/30/2019 0:00	18																				Coal - Available	On Site
MP_MP_B054	1/30/2019 19:00	1/30/2019 20:00	1/30/2019 0:00	19																				Coal - Available	On Site
MP_MP_B054	1/30/2019 20:00	1/30/2019 21:00	1/30/2019 0:00	20																				Coal - Available	On Site
MP_MP_B054	1/30/2019 21:00	1/30/2019 22:00	1/30/2019 0:00	21																				Coal - Available	On Site
MP_MP_B054	1/30/2019 22:00	1/30/2019 23:00	1/30/2019 0:00	22																				Coal - Available	On Site
MP_MP_B054	1/30/2019 23:00	1/31/2019 0:00	1/30/2019 0:00	23																				Coal - Available	On Site
MP_MP_B054	1/31/2019 0:00	1/31/2019 1:00	1/30/2019 0:00	24																				Coal - Available	On Site
MP_MP_B054																									

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TRADE SECRET DATA EXCLUDED

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(TRADE SECRET DATA EXCLUDED)

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Mini	Localtime	Localtime Est	Locality	Houren	Cleared	RT	DA	DA	RT	Actual	Commit	Segment 1	Segment 1	Segment 2	Segment 2	Segment 3	Segment 3	Segment 4	Segment 5	Segment 5	Segment 6	Segment 6	Primary Fuel Availability	Fuel Contract
Name				ng	Mwh	Dismax	Dismax	Ermx	Ermx	Mwh	Status	MW	Price	MW	Price	MW	Price	MW	Price	MW	Price		Status	
MP.LASKIN1	1/28/2019 1:00	1/28/2019 2:00	1/28/2019 0:00	1	TRADE SECRET DATA EXCISED)																			
MP.LASKIN1	1/28/2019 2:00	1/28/2019 3:00	1/28/2019 0:00	2																				
MP.LASKIN1	1/28/2019 3:00	1/28/2019 4:00	1/28/2019 0:00	3																				
MP.LASKIN1	1/28/2019 4:00	1/28/2019 5:00	1/28/2019 0:00	4																				
MP.LASKIN1	1/28/2019 5:00	1/28/2019 6:00	1/28/2019 0:00	5																				
MP.LASKIN1	1/28/2019 6:00	1/28/2019 7:00	1/28/2019 0:00	6																				
MP.LASKIN1	1/28/2019 7:00	1/28/2019 8:00	1/28/2019 0:00	7																				
MP.LASKIN1	1/28/2019 8:00	1/28/2019 9:00	1/28/2019 0:00	8																				
MP.LASKIN1	1/28/2019 9:00	1/28/2019 10:00	1/28/2019 0:00	9																				
MP.LASKIN1	1/28/2019 10:00	1/28/2019 11:00	1/28/2019 0:00	10																				
MP.LASKIN1	1/28/2019 11:00	1/28/2019 12:00	1/28/2019 0:00	11																				
MP.LASKIN1	1/28/2019 12:00	1/28/2019 13:00	1/28/2019 0:00	12																				
MP.LASKIN1	1/28/2019 13:00	1/28/2019 14:00	1/28/2019 0:00	13																				
MP.LASKIN1	1/28/2019 14:00	1/28/2019 15:00	1/28/2019 0:00	14																				
MP.LASKIN1	1/28/2019 15:00	1/28/2019 16:00	1/28/2019 0:00	15																				
MP.LASKIN1	1/28/2019 16:00	1/28/2019 17:00	1/28/2019 0:00	16																				
MP.LASKIN1	1/28/2019 17:00	1/28/2019 18:00	1/28/2019 0:00	17																				
MP.LASKIN1	1/28/2019 18:00	1/28/2019 19:00	1/28/2019 0:00	18																				
MP.LASKIN1	1/28/2019 19:00	1/28/2019 20:00	1/28/2019 0:00	19																				
MP.LASKIN1	1/28/2019 20:00	1/28/2019 21:00	1/28/2019 0:00	20																				
MP.LASKIN1	1/28/2019 21:00	1/28/2019 22:00	1/28/2019 0:00	21																				
MP.LASKIN1	1/28/2019 22:00	1/28/2019 23:00	1/28/2019 0:00	22																				
MP.LASKIN1	1/28/2019 23:00	1/29/2019 0:00	1/28/2019 0:00	23																				
MP.LASKIN1	1/29/2019 0:00	1/29/2019 1:00	1/28/2019 0:00	24																				
MP.LASKIN1	1/29/2019 1:00	1/29/2019 2:00	1/29/2019 0:00	1																				
MP.LASKIN1	1/29/2019 2:00	1/29/2019 3:00	1/29/2019 0:00	2																				
MP.LASKIN1	1/29/2019 3:00	1/29/2019 4:00	1/29/2019 0:00	3																				
MP.LASKIN1	1/29/2019 4:00	1/29/2019 5:00	1/29/2019 0:00	4																				
MP.LASKIN1	1/29/2019 5:00	1/29/2019 6:00	1/29/2019 0:00	5																				
MP.LASKIN1	1/29/2019 6:00	1/29/2019 7:00	1/29/2019 0:00	6																				
MP.LASKIN1	1/29/2019 7:00	1/29/2019 8:00	1/29/2019 0:00	7																				
MP.LASKIN1	1/29/2019 8:00	1/29/2019 9:00	1/29/2019 0:00	8																				
MP.LASKIN1	1/29/2019 9:00	1/29/2019 10:00	1/29/2019 0:00	9																				
MP.LASKIN1	1/29/2019 10:00	1/29/2019 11:00	1/29/2019 0:00	10																				
MP.LASKIN1	1/29/2019 11:00	1/29/2019 12:00	1/29/2019 0:00	11																				
MP.LASKIN1	1/29/2019 12:00	1/29/2019 13:00	1/29/2019 0:00	12																				
MP.LASKIN1	1/29/2019 13:00	1/29/2019 14:00	1/29/2019 0:00	13																				
MP.LASKIN1	1/29/2019 14:00	1/29/2019 15:00	1/29/2019 0:00	14																				
MP.LASKIN1	1/29/2019 15:00	1/29/2019 16:00	1/29/2019 0:00	15																				
MP.LASKIN1	1/29/2019 16:00	1/29/2019 17:00	1/29/2019 0:00	16																				
MP.LASKIN1	1/29/2019 17:00	1/29/2019 18:00	1/29/2019 0:00	17																				
MP.LASKIN1	1/29/2019 18:00	1/29/2019 19:00	1/29/2019 0:00	18																				
MP.LASKIN1	1/29/2019 19:00	1/29/2019 20:00	1/29/2019 0:00	19																				
MP.LASKIN1	1/29/2019 20:00	1/29/2019 21:00	1/29/2019 0:00	20																				
MP.LASKIN1	1/29/2019 21:00	1/29/2019 22:00	1/29/2019 0:00	21																				
MP.LASKIN1	1/29/2019 22:00	1/29/2019 23:00	1/29/2019 0:00	22																				
MP.LASKIN1	1/30/2019 0:00	1/30/2019 1:00	1/29/2019 0:00	23																				
MP.LASKIN1	1/30/2019 1:00	1/30/2019 2:00	1/30/2019 0:00	24																				
MP.LASKIN1	1/30/2019 2:00	1/30/2019 3:00	1/30/2019 0:00	1																				
MP.LASKIN1	1/30/2019 3:00	1/30/2019 4:00	1/30/2019 0:00	2																				
MP.LASKIN1	1/30/2019 4:00	1/30/2019 5:00	1/30/2019 0:00	3																				
MP.LASKIN1	1/30/2019 5:00	1/30/2019 6:00	1/30/2019 0:00	4																				
MP.LASKIN1	1/30/2019 6:00	1/30/2019 7:00	1/30/2019 0:00	5																				
MP.LASKIN1	1/30/2019 7:00	1/30/2019 8:00	1/30/2019 0:00	6																				
MP.LASKIN1	1/30/2019 8:00	1/30/2019 9:00	1/30/2019 0:00	7																				
MP.LASKIN1	1/30/2019 9:00	1/30/2019 10:00	1/30/2019 0:00	8																				
MP.LASKIN1	1/30/2019 10:00	1/30/2019 11:00	1/30/2019 0:00	9																				
MP.LASKIN1	1/30/2019 11:00	1/30/2019 12:00	1/30/2019 0:00	10																				
MP.LASKIN1	1/30/2019 12:00	1/30/2019 13:00	1/30/2019 0:00	11																				
MP.LASKIN1	1/30/2019 13:00	1/30/2019 14:00	1/30/2019 0:00	12																				
MP.LASKIN1	1/30/2019 14:00	1/30/2019 15:00	1/30/2019 0:00	13																				
MP.LASKIN1	1/30/2019 15:00	1/30/2019 16:00	1/30/2019 0:00	14																				
MP.LASKIN1	1/30/2019 16:00	1/30/2019 17:00	1/30/2019 0:00	15																				
MP.LASKIN1	1/30/2019 17:00	1/30/2019 18:00	1/30/2019 0:00	16																				
MP.LASKIN1	1/30/2019 18:00	1/30/2019 19:00	1/30/2019 0:00	17																				
MP.LASKIN1	1/30/2019 19:00	1/30/2019 20:00	1/30/2019 0:00	18																				
MP.LASKIN1	1/30/2019 20:00	1/30/2019 21:00	1/30/2019 0:00	19																				
MP.LASKIN1	1/30/2019 21:00	1/30/2019 22:00	1/30/2019 0:00	20																				
MP.LASKIN1	1/30/2019 22:00	1/30/2019 23:00	1/30/2019 0:00	21																				
MP.LASKIN1	1/30/2019 23:00	1/31/2019 0:00	1/30/2019 0:00	22																				
MP.LASKIN1	1/31/2019 0:00	1/31/2019 1:00	1/30/2019 0:00	23																				
MP.LASKIN1	1/31/2019 1:00	1/31/2019 2:00	1/31/2019 0:00	24																				
MP.LASKIN1	1/31/2019 2:00	1/31/2019 3:00	1/31/2019 0:00	1																				
MP.LASKIN1	1/31/2019 3:00	1/31/2019 4:00	1/31/2019 0:00	2																				
MP.LASKIN1	1/31/2019 4:00	1/31/2019 5:00	1/31/2019 0:00	3																				
MP.LASKIN1	1/31/2019 5:00	1/31/2019 6:00	1/31/2019 0:00	4																				
MP.LASKIN1	1/31/2019 6:00	1/31/2019 7:00	1/31/2019 0:00	5																				
MP.LASKIN1	1/31/2019 7:00	1/31/2019 8:00	1/31/2019 0:00	6																				
MP.LASKIN1	1/31/2019 8:00	1/31/2019 9:00	1/31/2019 0:00	7																				
MP.LASKIN1	1/31/2019 9:00	1/31/2019 10:00	1/31/2019 0:00	8																				
MP.LASKIN1	1/31/2019 10:00	1/31/2019 11:00	1/31/2019 0:00	9																				
MP.LASKIN1	1/31/2019 11:00	1/31/2019 12:00	1/31/2019 0:00	10																				
MP.LASKIN1	1/31/2019 12:00	1/31/2019 13:00	1/31/2019 0:00	11																				
MP.LASKIN1	1/31/2019 13:00	1/31/2019 14:00	1/31/2019 0:00	12																				
MP.LASKIN1	1/31/2019 14:00	1/31/2019 15:00	1/31/2019 0:00	13																				
MP.LASKIN1	1/31/2019 15:00	1/31/2019 16:00	1/31/2019 0:00	14																				
MP.LASKIN1	1/31/2019 16:00	1/31/2019 17:00	1/31/2019 0:00	15																				
MP.LASKIN1	1/31/2019 17:00	1/31/2019 18:00	1/31/2019 0:00	16																				
MP.LASKIN1	1/31/2019 18:00	1/31/2019 19:00	1/31/2019 0:00	17																				
MP.LASKIN1	1/31/2019 19:00	1/31/2019 20:00	1/31/2019 0:00	18																				
MP.LASKIN1	1/31/2019 20:00	1/31/2019 21:00	1/31/2019 0:00	19																				
MP.LASKIN1	1/31/2019 21:00	1/31/2019 22:00	1/31/2019 0:00	20																				
MP.LASKIN1	1/31/2019 22:00	1/31/2019 23:00	1/31/2019 0:00	21																				
MP.LASKIN1	1/31/2019 23:00	2/1/2019 0:00	1/31/2019 0:00	22																				
MP.LASKIN1	2/1/2019 0:00	2/1/2019 1:00	1/31/2019 0:00	23																				
MP.LASKIN1	2/1/2019 1:00	2/1/2019 2:00	1/31/2019 0:00	24																				

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Mile	Node	Localtime	Localtime Est	Localday	Houring	nd	[TRADE SECRET DATA EXCISED]															Fuel Contract Status							
							Chlnd	RT	DA	DA	RT	Actual	Commit	Segment 1	Segment 1	Segment 2	Segment 2	Segment 3	Segment 3	Segment 4	Segment 4		Segment 5	Segment 5	Segment 6	Segment 6	Price	Price	Primary Fuel
							Mwh	Dispmx	Dispmx	Emmax	Emmax	Mwh	Status	MW	Price	MW	Price	MW	Price	MW	Price	MW	Price	MW	Price	MW	Price	Primary Fuel	Availability
MP.LASKIN2	1/28/2019 1:00	1/28/2019 2:00	1/28/2019 0:00		1																								
MP.LASKIN2	1/28/2019 2:00	1/28/2019 3:00	1/28/2019 0:00		2																								
MP.LASKIN2	1/28/2019 3:00	1/28/2019 4:00	1/28/2019 0:00		3																								
MP.LASKIN2	1/28/2019 4:00	1/28/2019 5:00	1/28/2019 0:00		4																								
MP.LASKIN2	1/28/2019 5:00	1/28/2019 6:00	1/28/2019 0:00		5																								
MP.LASKIN2	1/28/2019 6:00	1/28/2019 7:00	1/28/2019 0:00		6																								
MP.LASKIN2	1/28/2019 7:00	1/28/2019 8:00	1/28/2019 0:00		7																								
MP.LASKIN2	1/28/2019 8:00	1/28/2019 9:00	1/28/2019 0:00		8																								
MP.LASKIN2	1/28/2019 9:00	1/28/2019 10:00	1/28/2019 0:00		9																								
MP.LASKIN2	1/28/2019 10:00	1/28/2019 11:00	1/28/2019 0:00		10																								
MP.LASKIN2	1/28/2019 11:00	1/28/2019 12:00	1/28/2019 0:00		11																								
MP.LASKIN2	1/28/2019 12:00	1/28/2019 13:00	1/28/2019 0:00		12																								
MP.LASKIN2	1/28/2019 13:00	1/28/2019 14:00	1/28/2019 0:00		13																								
MP.LASKIN2	1/28/2019 14:00	1/28/2019 15:00	1/28/2019 0:00		14																								
MP.LASKIN2	1/28/2019 15:00	1/28/2019 16:00	1/28/2019 0:00		15																								
MP.LASKIN2	1/28/2019 16:00	1/28/2019 17:00	1/28/2019 0:00		16																								
MP.LASKIN2	1/28/2019 17:00	1/28/2019 18:00	1/28/2019 0:00		17																								
MP.LASKIN2	1/28/2019 18:00	1/28/2019 19:00	1/28/2019 0:00		18																								
MP.LASKIN2	1/28/2019 19:00	1/28/2019 20:00	1/28/2019 0:00		19																								
MP.LASKIN2	1/28/2019 20:00	1/28/2019 21:00	1/28/2019 0:00		20																								
MP.LASKIN2	1/28/2019 21:00	1/28/2019 22:00	1/28/2019 0:00																										

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Mmi Nodesname	Localtime	Localtime Est	Localday	Hourend ng	Wind Mwh	RT Dispmx	DA Dispmx	DA Emmax	RT Emmax	Actual Mwh	Comml Status	Segment 1 MW	Segment 1 Price	Segment 2 MW	Segment 2 Price	Segment 3 MW	Segment 3 Price	Segment 4 MW	Segment 4 Price	Segment 5 MW	Segment 5 Price	Segment 6 MW	Segment 6 Price	Primary Fuel Availability	Fuel Contract Status	TRADE SECRET DATA EXCISED	
MP OLIVER12	1/28/2019 1:00	1/28/2019 2:00	1/28/2019 0:00	1																				Wind	Wind Dependent		
MP OLIVER12	1/28/2019 2:00	1/28/2019 3:00	1/28/2019 0:00	2																					Wind	Wind Dependent	
MP OLIVER12	1/28/2019 3:00	1/28/2019 4:00	1/28/2019 0:00	3																					Wind	Wind Dependent	
MP OLIVER12	1/28/2019 4:00	1/28/2019 5:00	1/28/2019 0:00	4																					Wind	Wind Dependent	
MP OLIVER12	1/28/2019 5:00	1/28/2019 6:00	1/28/2019 0:00	5																					Wind	Wind Dependent	
MP OLIVER12	1/28/2019 6:00	1/28/2019 7:00	1/28/2019 0:00	6																					Wind	Wind Dependent	
MP OLIVER12	1/28/2019 7:00	1/28/2019 8:00	1/28/2019 0:00	7																					Wind	Wind Dependent	
MP OLIVER12	1/28/2019 8:00	1/28/2019 9:00	1/28/2019 0:00	8																					Wind	Wind Dependent	
MP OLIVER12	1/28/2019 9:00	1/28/2019 10:00	1/28/2019 0:00	9																					Wind	Wind Dependent	
MP OLIVER12	1/28/2019 10:00	1/28/2019 11:00	1/28/2019 0:00	10																					Wind	Wind Dependent	
MP OLIVER12	1/28/2019 11:00	1/28/2019 12:00	1/28/2019 0:00	11																					Wind	Wind Dependent	
MP OLIVER12	1/28/2019 12:00	1/28/2019 13:00	1/28/2019 0:00	12																					Wind	Wind Dependent	
MP OLIVER12	1/28/2019 13:00	1/28/2019 14:00	1/28/2019 0:00	13																					Wind	Wind Dependent	
MP OLIVER12	1/28/2019 14:00	1/28/2019 15:00	1/28/2019 0:00	14																					Wind	Wind Dependent	
MP OLIVER12	1/28/2019 15:00	1/28/2019 16:00	1/28/2019 0:00	15																					Wind	Wind Dependent	
MP OLIVER12	1/28/2019 16:00	1/28/2019 17:00	1/28/2019 0:00	16																					Wind	Wind Dependent	
MP OLIVER12	1/28/2019 17:00	1/28/2019 18:00	1/28/2019 0:00	17																					Wind	Wind Dependent	
MP OLIVER12	1/28/2019 18:00	1/28/2019 19:00	1/28/2019 0:00	18																					Wind	Wind Dependent	
MP OLIVER12	1/28/2019 19:00	1/28/2019 20:00	1/28/2019 0:00	19																					Wind	Wind Dependent	
MP OLIVER12	1/28/2019 20:00	1/28/2019 21:00	1/28/2019 0:00	20																					Wind	Wind Dependent	
MP OLIVER12	1/28/2019 21:00	1/28/2019 22:00	1/28/2019 0:00	21																					Wind	Wind Dependent	
MP OLIVER12																											

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M	M	M	M	H	ng	Cleared	RT	DA	DA	RT	Actual	Commit	Segment	Segment	Segment	Segment	Segment	Segment	Segment	Segment	Segment	Segment	Segment	Segment	Segment	Primary	Fuel	Contract
[TRADE SECRET DATA EXCISED]																												
MP	THOMSON	1/28/2019 1:00	1/28/2019 2:00	1/28/2019 0:00	1																					Water	Water	Dependant
MP	THOMSON	1/28/2019 2:00	1/28/2019 3:00	1/28/2019 0:00	2																					Water	Water	Dependant
MP	THOMSON	1/28/2019 3:00	1/28/2019 4:00	1/28/2019 0:00	3																					Water	Water	Dependant
MP	THOMSON	1/28/2019 4:00	1/28/2019 5:00	1/28/2019 0:00	4																					Water	Water	Dependant
MP	THOMSON	1/28/2019 5:00	1/28/2019 6:00	1/28/2019 0:00	5																					Water	Water	Dependant
MP	THOMSON	1/28/2019 6:00	1/28/2019 7:00	1/28/2019 0:00	6																					Water	Water	Dependant
MP	THOMSON	1/28/2019 7:00	1/28/2019 8:00	1/28/2019 0:00	7																					Water	Water	Dependant
MP	THOMSON	1/28/2019 8:00	1/28/2019 9:00	1/28/2019 0:00	8																					Water	Water	Dependant
MP	THOMSON	1/28/2019 9:00	1/28/2019 10:00	1/28/2019 0:00	9																					Water	Water	Dependant
MP	THOMSON	1/28/2019 10:00	1/28/2019 11:00	1/28/2019 0:00	10																					Water	Water	Dependant
MP	THOMSON	1/28/2019 11:00	1/28/2019 12:00	1/28/2019 0:00	11																					Water	Water	Dependant
MP	THOMSON	1/28/2019 12:00	1/28/2019 13:00	1/28/2019 0:00	12																					Water	Water	Dependant
MP	THOMSON	1/28/2019 13:00	1/28/2019 14:00	1/28/2019 0:00	13																					Water	Water	Dependant
MP	THOMSON	1/28/2019 14:00	1/28/2019 15:00	1/28/2019 0:00	14																					Water	Water	Dependant
MP	THOMSON	1/28/2019 15:00	1/28/2019 16:00	1/28/2019 0:00	15																					Water	Water	Dependant
MP	THOMSON	1/28/2019 16:00	1/28/2019 17:00	1/28/2019 0:00	16																					Water	Water	Dependant
MP	THOMSON	1/28/2019 17:00	1/28/2019 18:00	1/28/2019 0:00	17																					Water	Water	Dependant
MP	THOMSON	1/28/2019 18:00	1/28/2019 19:00	1/28/2019 0:00	18																					Water	Water	Dependant
MP	THOMSON	1/28/2019 19:00	1/28/2019 20:00	1/28/2019 0:00	19																					Water	Water	Dependant
MP	THOMSON	1/28/2019 20:00	1/28/2019 21:00	1/28/2019 0:00	20																					Water	Water	Dependant
MP	THOMSON	1/28/2019																										

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Attachment A
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Mmi NodeName	Localtime	Localtime Est	Localday	Hour ending	Cleared	RT	DA	DA	RT	Actual	Commit	Segment	Segment	Segment	Segment	Segment	Segment	Segment	Segment	Segment	Segment	Primary Fuel	Fuel Contract
[TRADE SECRET DATA EXCISED]																							
OTP.Y2ACGEN.MP	1/28/2019 1:00	1/28/2019 2:00	1/28/2019 0:00	1																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/28/2019 2:00	1/28/2019 3:00	1/28/2019 0:00	2																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/28/2019 3:00	1/28/2019 4:00	1/28/2019 0:00	3																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/28/2019 4:00	1/28/2019 5:00	1/28/2019 0:00	4																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/28/2019 5:00	1/28/2019 6:00	1/28/2019 0:00	5																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/28/2019 6:00	1/28/2019 7:00	1/28/2019 0:00	6																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/28/2019 7:00	1/28/2019 8:00	1/28/2019 0:00	7																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/28/2019 8:00	1/28/2019 9:00	1/28/2019 0:00	8																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/28/2019 9:00	1/28/2019 10:00	1/28/2019 0:00	9																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/28/2019 10:00	1/28/2019 11:00	1/28/2019 0:00	10																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/28/2019 11:00	1/28/2019 12:00	1/28/2019 0:00	11																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/28/2019 12:00	1/28/2019 13:00	1/28/2019 0:00	12																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/28/2019 13:00	1/28/2019 14:00	1/28/2019 0:00	13																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/28/2019 14:00	1/28/2019 15:00	1/28/2019 0:00	14																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/28/2019 15:00	1/28/2019 16:00	1/28/2019 0:00	15																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/28/2019 16:00	1/28/2019 17:00	1/28/2019 0:00	16																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/28/2019 17:00	1/28/2019 18:00	1/28/2019 0:00	17																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/28/2019 18:00	1/28/2019 19:00	1/28/2019 0:00	18																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/28/2019 19:00	1/28/2019 20:00	1/28/2019 0:00	19																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/28/2019 20:00	1/28/2019 21:00	1/28/2019 0:00	20																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/28/2019 21:00	1/28/2019 22:00	1/28/2019 0:00	21																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/28/2019 22:00	1/28/2019 23:00	1/28/2019 0:00	22																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/28/2019 23:00	1/29/2019 0:00	1/28/2019 0:00	23																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/29/2019 0:00	1/29/2019 1:00	1/29/2019 0:00	1																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/29/2019 1:00	1/29/2019 2:00	1/29/2019 0:00	2																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/29/2019 2:00	1/29/2019 3:00	1/29/2019 0:00	3																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/29/2019 3:00	1/29/2019 4:00	1/29/2019 0:00	4																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/29/2019 4:00	1/29/2019 5:00	1/29/2019 0:00	5																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/29/2019 5:00	1/29/2019 6:00	1/29/2019 0:00	6																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/29/2019 6:00	1/29/2019 7:00	1/29/2019 0:00	7																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/29/2019 7:00	1/29/2019 8:00	1/29/2019 0:00	8																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/29/2019 8:00	1/29/2019 9:00	1/29/2019 0:00	9																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/29/2019 9:00	1/29/2019 10:00	1/29/2019 0:00	10																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/29/2019 10:00	1/29/2019 11:00	1/29/2019 0:00	11																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/29/2019 11:00	1/29/2019 12:00	1/29/2019 0:00	12																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/29/2019 12:00	1/29/2019 13:00	1/29/2019 0:00	13																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/29/2019 13:00	1/29/2019 14:00	1/29/2019 0:00	14																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/29/2019 14:00	1/29/2019 15:00	1/29/2019 0:00	15																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/29/2019 15:00	1/29/2019 16:00	1/29/2019 0:00	16																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/29/2019 16:00	1/29/2019 17:00	1/29/2019 0:00	17																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/29/2019 17:00	1/29/2019 18:00	1/29/2019 0:00	18																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/29/2019 18:00	1/29/2019 19:00	1/29/2019 0:00	19																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/29/2019 19:00	1/29/2019 20:00	1/29/2019 0:00	20																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/29/2019 20:00	1/29/2019 21:00	1/29/2019 0:00	21																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/29/2019 21:00	1/29/2019 22:00	1/29/2019 0:00	22																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/29/2019 22:00	1/29/2019 23:00	1/29/2019 0:00	23																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/30/2019 0:00	1/31/2019 0:00	1/30/2019 0:00	24																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/31/2019 0:00	1/31/2019 1:00	1/30/2019 0:00	1																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/31/2019 1:00	1/31/2019 2:00	1/31/2019 0:00	2																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/31/2019 2:00	1/31/2019 3:00	1/31/2019 0:00	3																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/31/2019 3:00	1/31/2019 4:00	1/31/2019 0:00	4																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/31/2019 4:00	1/31/2019 5:00	1/31/2019 0:00	5																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/31/2019 5:00	1/31/2019 6:00	1/31/2019 0:00	6																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/31/2019 6:00	1/31/2019 7:00	1/31/2019 0:00	7																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/31/2019 7:00	1/31/2019 8:00	1/31/2019 0:00	8																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/31/2019 8:00	1/31/2019 9:00	1/31/2019 0:00	9																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/31/2019 9:00	1/31/2019 10:00	1/31/2019 0:00	10																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/31/2019 10:00	1/31/2019 11:00	1/31/2019 0:00	11																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/31/2019 11:00	1/31/2019 12:00	1/31/2019 0:00	12																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/31/2019 12:00	1/31/2019 13:00	1/31/2019 0:00	13																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/31/2019 13:00	1/31/2019 14:00	1/31/2019 0:00	14																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/31/2019 14:00	1/31/2019 15:00	1/31/2019 0:00	15																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/31/2019 15:00	1/31/2019 16:00	1/31/2019 0:00	16																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/31/2019 16:00	1/31/2019 17:00	1/31/2019 0:00	17																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/31/2019 17:00	1/31/2019 18:00	1/31/2019 0:00	18																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/31/2019 18:00	1/31/2019 19:00	1/31/2019 0:00	19																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/31/2019 19:00	1/31/2019 20:00	1/31/2019 0:00	20																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/31/2019 20:00	1/31/2019 21:00	1/31/2019 0:00	21																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/31/2019 21:00	1/31/2019 22:00	1/31/2019 0:00	22																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/31/2019 22:00	1/31/2019 23:00	1/31/2019 0:00	23																		Coal - Available	On Site
OTP.Y2ACGEN.MP	1/31/2019 23:00	2/1/2019 0:00	1/31/2019 0:00	24																		Coal - Available	On Site
OTP.Y2ACGEN.MP	2/1/2019 0:00	2/1/2019 1:00	1/31/2019 0:00	25																		Coal - Available	On Site

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Time	MW Forecast - MW	Pressure Forecast - mb	Temperature Forecast - F	Wind Direction Forecast - degrees	Wind Speed Forecast - m/s
	[TRADE SECRET DATA EXCISED]				
01/28/2019 00:00:00-05:00		933.62	5.01	345.32	15.62
01/28/2019 01:00:00-05:00		935.85	2.49	345.22	14.6
01/28/2019 02:00:00-05:00		936.85	5.1	341.98	13.76
01/28/2019 03:00:00-05:00		937.86	7.71	338.75	13.08
01/28/2019 04:00:00-05:00		938.86	10.33	335.51	12.6
01/28/2019 05:00:00-05:00		939.46	11.05	331.06	12.14
01/28/2019 06:00:00-05:00		940.05	11.78	326.59	11.71
01/28/2019 07:00:00-05:00		940.65	12.51	322.14	11.47
01/28/2019 08:00:00-05:00		941.33	11.87	325.15	11.41
01/28/2019 09:00:00-05:00		942.01	11.24	328.16	11.52
01/28/2019 10:00:00-05:00		942.69	10.6	331.18	11.83
01/28/2019 11:00:00-05:00		942.96	10.84	329.09	12.15
01/28/2019 12:00:00-05:00		943.24	11.08	327	12.5
01/28/2019 13:00:00-05:00		943.51	11.32	324.92	12.39
01/28/2019 14:00:00-05:00		943.06	11.44	321.11	11.82
01/28/2019 15:00:00-05:00		942.6	11.55	317.31	10.77
01/28/2019 16:00:00-05:00		942.14	11.66	313.5	9.95
01/28/2019 17:00:00-05:00		941.9	11.09	312.29	9.83
01/28/2019 18:00:00-05:00		941.66	10.52	311.07	10.4
01/28/2019 19:00:00-05:00		941.41	9.95	309.86	11.41
01/28/2019 20:00:00-05:00		941.57	8.45	315.77	12.16
01/28/2019 21:00:00-05:00		941.73	6.95	321.69	12.65
01/28/2019 22:00:00-05:00		941.89	5.46	327.6	12.65
01/28/2019 23:00:00-05:00		942.37	2.81	332.17	12.44

*Only cleared 50% of forecast based on potential for icing

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Time	MW Forecast - MW	Pressure Forecast - mb	Temperature Forecast - F	Wind Direction Forecast - degrees	Wind Speed Forecast - m/s
	[TRADE SECRET DATA EXCISED]				
01/29/2019 00:00:00-05:00		941.83	1.14	337.1	12.45
01/29/2019 01:00:00-05:00		942.19	-0.95	341.67	12.29
01/29/2019 02:00:00-05:00		942.59	-2.98	340.59	12.02
01/29/2019 03:00:00-05:00		942.99	-5.02	339.53	11.64
01/29/2019 04:00:00-05:00		943.38	-7.05	338.47	11.22
01/29/2019 05:00:00-05:00		943.43	-8.3	336.85	10.88
01/29/2019 06:00:00-05:00		943.48	-9.55	335.24	10.63
01/29/2019 07:00:00-05:00		943.53	-10.8	333.63	10.51
01/29/2019 08:00:00-05:00		943.96	-11.44	333.54	10.42
01/29/2019 09:00:00-05:00		944.39	-12.09	333.46	10.38
01/29/2019 10:00:00-05:00		944.82	-12.73	333.37	10.44
01/29/2019 11:00:00-05:00		945.13	-12.64	332.74	10.55
01/29/2019 12:00:00-05:00		945.44	-12.55	332.11	10.72
01/29/2019 13:00:00-05:00		945.75	-12.45	331.48	10.85
01/29/2019 14:00:00-05:00		945.65	-12.12	331.54	10.89
01/29/2019 15:00:00-05:00		945.56	-11.79	331.61	10.83
01/29/2019 16:00:00-05:00		945.46	-11.46	331.68	10.56
01/29/2019 17:00:00-05:00		945.66	-12.65	336.15	10.18
01/29/2019 18:00:00-05:00		945.87	-13.84	340.63	9.69
01/29/2019 19:00:00-05:00		946.08	-15.03	345.1	9.12
01/29/2019 20:00:00-05:00		946.2	-16.44	345.87	8.56
01/29/2019 21:00:00-05:00		946.32	-17.86	346.65	8.02
01/29/2019 22:00:00-05:00		946.45	-19.27	347.42	7.32
01/29/2019 23:00:00-05:00		946.25	-20.74	346.51	6.45

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Time	MW Forecast - MW	Pressure Forecast - mb	Temperature Forecast - F	Wind Direction Forecast - degrees	Wind Speed Forecast - m/s
	[TRADE SECRET DATA EXCISED]				
01/30/2019 00:00:00-05:00		945.5	-21.2	235.8	4.8
01/30/2019 01:00:00-05:00		945.32	-22.04	253.27	3.63
01/30/2019 02:00:00-05:00		944.85	-22.3	256.96	2.77
01/30/2019 03:00:00-05:00		944.38	-22.56	260.66	2.21
01/30/2019 04:00:00-05:00		943.91	-22.82	264.36	2.08
01/30/2019 05:00:00-05:00		943.26	-21.89	240.38	2.03
01/30/2019 06:00:00-05:00		942.62	-20.97	216.38	2.09
01/30/2019 07:00:00-05:00		941.97	-20.04	192.39	2.29
01/30/2019 08:00:00-05:00		941.77	-20.87	179.86	2.54
01/30/2019 09:00:00-05:00		941.56	-21.7	167.32	2.83
01/30/2019 10:00:00-05:00		941.35	-22.53	154.79	3.15
01/30/2019 11:00:00-05:00		941.17	-19.02	156.63	3.45
01/30/2019 12:00:00-05:00		941	-15.5	158.48	3.72
01/30/2019 13:00:00-05:00		940.82	-11.99	160.32	3.9
01/30/2019 14:00:00-05:00		940.19	-10.41	158.24	4.02
01/30/2019 15:00:00-05:00		939.56	-8.82	156.15	4.06
01/30/2019 16:00:00-05:00		938.93	-7.24	154.07	4.2
01/30/2019 17:00:00-05:00		938.65	-8.21	154.8	4.52
01/30/2019 18:00:00-05:00		938.36	-9.17	155.54	5
01/30/2019 19:00:00-05:00		938.08	-10.14	156.27	5.58
01/30/2019 20:00:00-05:00		937.69	-9.92	156.96	6.08
01/30/2019 21:00:00-05:00		937.31	-9.69	157.64	6.51
01/30/2019 22:00:00-05:00		936.92	-9.47	158.33	6.87
01/30/2019 23:00:00-05:00		936.46	-8.39	160.33	7.25

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Time	MW Forecast - MW	Pressure Forecast - mb	Temperature Forecast - F	Wind Direction Forecast - degrees	Wind Speed Forecast - m/s
	TRADE SECRET DATA EXCISED				
01/31/2019 00:00:00-05:00		936.19	-7.18	161.27	7.49
01/31/2019 01:00:00-05:00		935.85	-6.39	164.07	7.71
01/31/2019 02:00:00-05:00		935.14	-5.67	165.63	7.92
01/31/2019 03:00:00-05:00		934.44	-4.94	167.2	8.1
01/31/2019 04:00:00-05:00		933.74	-4.22	168.76	8.21
01/31/2019 05:00:00-05:00		933.1	-3.01	170.64	8.27
01/31/2019 06:00:00-05:00		932.45	-1.81	172.52	8.27
01/31/2019 07:00:00-05:00		931.81	-0.61	174.4	8.12
01/31/2019 08:00:00-05:00		931.58	0.12	176.81	7.89
01/31/2019 09:00:00-05:00		931.35	0.85	179.22	7.56
01/31/2019 10:00:00-05:00		931.12	1.59	181.63	7.02
01/31/2019 11:00:00-05:00		931.1	4.87	194.45	6.36
01/31/2019 12:00:00-05:00		931.07	8.15	207.26	5.58
01/31/2019 13:00:00-05:00		931.04	11.43	220.07	4.95
01/31/2019 14:00:00-05:00		930.39	15.69	228.28	4.6
01/31/2019 15:00:00-05:00		929.74	19.95	236.49	4.52
01/31/2019 16:00:00-05:00		929.09	24.2	244.69	4.58
01/31/2019 17:00:00-05:00		929.44	24.14	255.12	4.5
01/31/2019 18:00:00-05:00		929.79	24.07	265.53	4.3
01/31/2019 19:00:00-05:00		930.14	24	275.95	3.87
01/31/2019 20:00:00-05:00		930.24	22.31	251.44	3.35
01/31/2019 21:00:00-05:00		930.35	20.62	226.93	2.74
01/31/2019 22:00:00-05:00		930.45	18.92	202.42	2.47
01/31/2019 23:00:00-05:00		930.39	17.65	196.53	2.63

Oliver 1

HE MISO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
HE MP	24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
	[TRADE SECRET DATA EXCISED]																							
Forecast MWH																								
Wind Speed	16.2	13.4	14.9	15.5	16.8	15.6	11.6	9.2	10	14.4	14.8	15.4	14	14.3	12.7	12.5	12.3	11.2	10.8	11.7	11.5	11.7	11.8	12
Wind Direction	319	319	321	328	322	328	327	328	331	323	316	298	305	301	298	309	302	294	301	304	305	311	311	313

Oliver 2

HE MISO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
HE MP	24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
	[TRADE SECRET DATA EXCISED]																							
Forecast MWH																								
Wind Speed	16.6	14.7	14.8	15.4	16.9	16.8	13.3	9.2	10.6	11	13.2	14.2	14	13.6	12.8	12.3	12.1	11.5	11	11.8	11.9	11.9	12.2	12.5
Wind Direction	319	319	321	328	322	328	327	328	331	323	316	298	305	301	298	309	302	294	301	304	305	311	311	313

*Only cleared 50% of forecast based on potential for icing

Oliver 1

HE MISO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
HE MP	24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
	[TRADE SECRET DATA EXCISED]																							
Forecast MWH																								
Wind Speed	12.4	12.6	12.2	12.1	12.5	12.6	12.1	11.3	11.3	11.8	13.3	13.9	13.1	12.9	12.5	12.3	12.3	12.1	11.6	10.6	10.8	9.1	8.2	6.3
Wind Direction	320	317	321	317	313	316	314	317	324	323	311	309	315	320	313	309	311	312	325	329	332	335	333	339

Oliver2

HE MISO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
HE MP	24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
	[TRADE SECRET DATA EXCISED]																							
Forecast MWH																								
Wind Speed	14.1	13.6	12.9	13.2	14.2	13.9	12.5	12	12.4	13	13.4	13.4	13	12.9	12.7	11.6	11.6	11.6	10.6	9.8	10.3	10.2	9.6	8.3
Wind Direction	320	317	321	317	313	316	314	317	324	323	311	309	315	320	313	309	311	312	325	329	332	335	333	339

Oliver 1

HE MISO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
HE MP	24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
	(TRADE SECRET DATA EXCISED)																							
Forecast MWH																								
Wind Speed	5.8	4.8	4.4	3.9	3.5	2.7	2.7	2.6	2.6	2.6	2.7	2.9	3.3	3.8	4.2	4.5	4.7	5.2	5.6	5.6	6.1	7.5	7.9	8.9
Wind Direction	313	312	310	308	311	346	275	267	256	247	233	204	207	180	166	154	160	147	149	143	143	134	144	142

Oliver 2

HE MISO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
HE MP	24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
	(TRADE SECRET DATA EXCISED)																							
Forecast MWH																								
Wind Speed	7.2	4.9	4.1	2.7	3.4	2.7	2.7	2.6	2.6	2.6	2.6	3.3	4.3	4.7	4.7	5.2	5.4	6.1	6.1	5.9	5.9	7.3	8.1	9.7
Wind Direction	313	312	310	308	311	346	275	267	256	247	233	204	207	180	166	154	160	147	149	143	143	134	144	142

Oliver 1

HE MISO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
HE MP	24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
	(TRADE SECRET DATA EXCISED)																							
Forecast MWH																								
Wind Speed	9.1	9.6	9.6	9.8	10	10.8	10.8	9.8	8.7	8.7	8.1	7.4	6.3	6.3	5.7	5.1	4.4	5.6	4.2	3.9	5.3	6.3	5.1	6.1
Wind Direction	147	139	153	153	136	135	149	139	141	145	152	160	156	178	179	191	172	176	163	158	161	173	162	157

Oliver 2

HE MISO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
HE MP	24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
	(TRADE SECRET DATA EXCISED)																							
Forecast MWH																								
Wind Speed	9.4	8.7	9.6	10	10.6	10.5	10.6	9.5	7	6.8	6.5	6.7	6.3	6.3	5.7	4.2	3.7	4.7	3.8	3.8	5.4	5.8	5.7	7.3
Wind Direction	147	141	153	153	136	135	149	139	141	145	152	160	156	178	179	191	172	176	163	158	161	173	162	156

Localtime	Taconite Ridge Fcst - MW	Temp (F°)	Cloud Cover %	Wind Speed (MPH)	Wind Direction (°)
	[TRADE SECRET DATA EXCISED]				
1/28/2019 1:00		(13)	63	5	34
1/28/2019 2:00		(15)	53	5	28
1/28/2019 3:00		(13)	25	5	26
1/28/2019 4:00		(8)	41	3	20
1/28/2019 5:00		(5)	45	5	356
1/28/2019 6:00		(3)	70	3	340
1/28/2019 7:00		(1)	47	6	326
1/28/2019 8:00		-	75	6	314
1/28/2019 9:00		2	54	6	298
1/28/2019 10:00		1	57	6	294
1/28/2019 11:00		-	71	6	292
1/28/2019 12:00		(2)	60	6	290
1/28/2019 13:00		(4)	48	7	296
1/28/2019 14:00		(6)	62	6	302
1/28/2019 15:00		(7)	67	7	310
1/28/2019 16:00		(8)	66	7	312
1/28/2019 17:00		(9)	68	7	314
1/28/2019 18:00		(11)	47	6	312
1/28/2019 19:00		(12)	73	7	318
1/28/2019 20:00		(14)	80	7	320
1/28/2019 21:00		(14)	84	8	320
1/28/2019 22:00		(15)	84	8	318
1/28/2019 23:00		(16)	85	9	320
1/29/2019 0:00		(16)	86	9	320

Localtime	Taconite Ridge Fcst - MW	Temp (F°)	Cloud Cover %	Wind Speed (MPH)	Wind Direction (°)
	[TRADE SECRET DATA EXCISED]				
1/29/2019 1:00		(18)	61	11	316
1/29/2019 2:00		(20)	70	11	316
1/29/2019 3:00		(18)	70	13	318
1/29/2019 4:00		(16)	56	13	316
1/29/2019 5:00		(16)	71	14	316
1/29/2019 6:00		(16)	90	14	322
1/29/2019 7:00		(16)	92	14	318
1/29/2019 8:00		(16)	68	15	322
1/29/2019 9:00		(16)	74	16	320
1/29/2019 10:00		(17)	50	15	320
1/29/2019 11:00		(18)	49	14	318
1/29/2019 12:00		(19)	55	13	318
1/29/2019 13:00		(20)	36	14	318
1/29/2019 14:00		(21)	44	13	316
1/29/2019 15:00		(22)	56	13	318
1/29/2019 16:00		(23)	58	13	322
1/29/2019 17:00		(23)	52	11	322
1/29/2019 18:00		(25)	38	12	320
1/29/2019 19:00		(26)	51	12	324
1/29/2019 20:00		(25)	57	10	322
1/29/2019 21:00		(25)	69	10	322
1/29/2019 22:00		(25)	71	10	320
1/29/2019 23:00		(26)	71	10	320
1/30/2019 0:00		(26)	66	9	316

Localtime	Taconite Ridge Fcst - MW	Temp (F°)	Cloud Cover %	Wind Speed (MPH)	Wind Direction (°)
	[TRADE SECRET DATA EXCISED]				
1/30/2019 1:00		(29)	76	8	312
1/30/2019 2:00		(32)	74	8	312
1/30/2019 3:00		(28)	54	8	316
1/30/2019 4:00		(24)	49	8	312
1/30/2019 5:00		(21)	49	10	306
1/30/2019 6:00		(19)	64	9	310
1/30/2019 7:00		(19)	17	10	304
1/30/2019 8:00		(17)	29	10	308
1/30/2019 9:00		(14)	1	10	302
1/30/2019 10:00		(16)	13	9	298
1/30/2019 11:00		(18)	-	8	294
1/30/2019 12:00		(20)	-	7	288
1/30/2019 13:00		(22)	-	7	292
1/30/2019 14:00		(24)	3	6	290
1/30/2019 15:00		(25)	1	6	300
1/30/2019 16:00		(26)	10	6	298
1/30/2019 17:00		(27)	4	5	304
1/30/2019 18:00		(29)	-	5	304
1/30/2019 19:00		(30)	3	5	308
1/30/2019 20:00		(30)	9	3	306
1/30/2019 21:00		(30)	13	3	310
1/30/2019 22:00		(31)	19	2	306
1/30/2019 23:00		(33)	22	2	316
1/31/2019 0:00		(34)	32	1	320

Localtime	Taconite Ridge Fcst - MW	Temp (F°)	Cloud Cover %	Wind Speed (MPH)	Wind Direction (°)
	[TRADE SECRET DATA EXCISED]				
1/31/2019 1:00		(33)	55	1	312
1/31/2019 2:00		(33)	51	-	180
1/31/2019 3:00		(29)	35	-	180
1/31/2019 4:00		(23)	51	1	228
1/31/2019 5:00		(18)	64	2	228
1/31/2019 6:00		(15)	63	2	226
1/31/2019 7:00		(12)	49	3	218
1/31/2019 8:00		(9)	63	5	194
1/31/2019 9:00		(8)	46	5	196
1/31/2019 10:00		(7)	55	3	174
1/31/2019 11:00		(8)	68	2	174
1/31/2019 12:00		(11)	74	1	148
1/31/2019 13:00		(12)	80	1	158
1/31/2019 14:00		(12)	84	1	158
1/31/2019 15:00		(13)	91	2	160
1/31/2019 16:00		(12)	88	2	152
1/31/2019 17:00		(12)	86	2	152
1/31/2019 18:00		(13)	84	2	156
1/31/2019 19:00		(14)	72	2	148
1/31/2019 20:00		(15)	78	1	148
1/31/2019 21:00		(15)	71	1	156
1/31/2019 22:00		(15)	56	1	170
1/31/2019 23:00		(16)	62	2	172
2/1/2019 0:00		(18)	75	1	170

Temperatures in Fahrenheit (F)

Oliver 1	-4 F
Oliver 2	-22 F
Bison 1-4	-22 F
Tac Ridge	-22 F

Localtime	Camp Ripley Actuals PV	Camp Ripley PV Fcst - MW	GHI
	[TRADE SECRET DATA EXCISED]		
1/28/2019 1:00			-
1/28/2019 2:00			-
1/28/2019 3:00			-
1/28/2019 4:00			-
1/28/2019 5:00			-
1/28/2019 6:00			-
1/28/2019 7:00			-
1/28/2019 8:00			-
1/28/2019 9:00			131
1/28/2019 10:00			272
1/28/2019 11:00			383
1/28/2019 12:00			444
1/28/2019 13:00			476
1/28/2019 14:00			424
1/28/2019 15:00			317
1/28/2019 16:00			132
1/28/2019 17:00			2
1/28/2019 18:00			-
1/28/2019 19:00			-
1/28/2019 20:00			-
1/28/2019 21:00			-
1/28/2019 22:00			-
1/28/2019 23:00			-
1/29/2019 0:00			-

Localtime	Camp Ripley Actuals PV	Camp Ripley PV Fcst - MW	GHI
	[TRADE SECRET DATA EXCISED]		
1/29/2019 1:00			-
1/29/2019 2:00			-
1/29/2019 3:00			-
1/29/2019 4:00			-
1/29/2019 5:00			-
1/29/2019 6:00			-
1/29/2019 7:00			-
1/29/2019 8:00			-
1/29/2019 9:00			142
1/29/2019 10:00			305
1/29/2019 11:00			427
1/29/2019 12:00			495
1/29/2019 13:00			514
1/29/2019 14:00			458
1/29/2019 15:00			344
1/29/2019 16:00			165
1/29/2019 17:00			11
1/29/2019 18:00			-
1/29/2019 19:00			-
1/29/2019 20:00			-
1/29/2019 21:00			-
1/29/2019 22:00			-
1/29/2019 23:00			-
1/30/2019 0:00			-

Localtime	Camp Ripley Actual	Camp Ripley PV Fcst - MW	GHI
	[TRADE SECRET DATA EXCISED]		
1/30/2019 1:00			-
1/30/2019 2:00			-
1/30/2019 3:00			-
1/30/2019 4:00			-
1/30/2019 5:00			-
1/30/2019 6:00			-
1/30/2019 7:00			-
1/30/2019 8:00			-
1/30/2019 9:00			-
1/30/2019 10:00			135
1/30/2019 11:00			307
1/30/2019 12:00			429
1/30/2019 13:00			495
1/30/2019 14:00			537
1/30/2019 15:00			479
1/30/2019 16:00			361
1/30/2019 17:00			171
1/30/2019 18:00			14
1/30/2019 19:00			-
1/30/2019 20:00			-
1/30/2019 21:00			-
1/30/2019 22:00			-
1/30/2019 23:00			-
1/31/2019 0:00			-

Localtime	Camp Ripley Actuals PV	Camp Ripley PV Fcst - MW	GHI
	[TRADE SECRET DATA EXCISED]		
1/31/2019 1:00			-
1/31/2019 2:00			-
1/31/2019 3:00			-
1/31/2019 4:00			-
1/31/2019 5:00			-
1/31/2019 6:00			-
1/31/2019 7:00			-
1/31/2019 8:00			-
1/31/2019 9:00			-
1/31/2019 10:00			101
1/31/2019 11:00			216
1/31/2019 12:00			300
1/31/2019 13:00			347
1/31/2019 14:00			417
1/31/2019 15:00			373
1/31/2019 16:00			282
1/31/2019 17:00			153
1/31/2019 18:00			4
1/31/2019 19:00			-
1/31/2019 20:00			-
1/31/2019 21:00			-
1/31/2019 22:00			-
1/31/2019 23:00			-
2/1/2019 0:00			-

Attachment B: MP GADS Summary Report
Docket No. E,G-999/CI-19-160



3/28/2019 12:36:28 PM

Event Summary Report

MPUC Request - Jan 28-31 2019 GADS Report; MPUC Docket E,G-999/CI-19-160

Report Period: 01/28/2019 00:00 to 01/31/2019 23:59

Rollup Weighting: N/A

OMC: None

Boswell Energy Center - BEC 4					
Type	Start	End	Description	Equivalent Hours	Equivalent MWH
Maintenance Derate	1/27/2019 21:32	1/28/2019 4:46	Boiler Deslag	2.30	1334.67
Unplanned Forced Derate	1/31/2019 3:40	1/31/2019 18:41	NID Module 4G Bag Replacement	1.04	600.67

Hibbard Renewable Energy Center - HREC 3					
Type	Start	End	Description	Equivalent Hours	Equivalent MWH
Unplanned Forced Derate	1/29/2019 8:44	2/2/2019 9:00	Start-up Fuel Not Available	63.27	2024.53

Laskin Energy Center - LEC 2					
Type	Start	End	Description	Equivalent Hours	Equivalent MWH
Startup Failure	1/30/2019 6:15	2/1/2019 9:38	Boiler Makeup Water System Not Able To Maintain Supply	41.75	2087.50

Attachment C: Load Modifying Resources - Demand Response
Docket No. E,G-999/CI-19-160

Hour Ending	1/27/19				1/28/19				1/29/19				1/30/19				1/31/19			
	LMR-DR	Load	Deployed	DR Available	LMR-DR	Load	Deployed	DR Available	LMR-DR	Load	Deployed	DR Available	LMR-DR	Load	Deployed	DR Available	LMR-DR	Load	Deployed	DR Available
	(MW)		(MW)	(MW)	(MW)		(MW)	(MW)	(MW)		(MW)	(MW)	(MW)		(MW)	(MW)	(MW)		(MW)	(MW)
100		563	-	230		588	-	230		567	-	230		540	-	230		556	-	230
200		557	-	230		571	-	230		568	-	230		545	-	230		557	-	230
300		546	-	230		559	-	230		575	-	230		544	-	230		560	-	230
400		539	-	230		554	-	230		577	-	230		546	-	230		570	-	230
500		553	-	230		548	-	230		579	-	230		560	-	230		565	-	230
600		559	-	230		555	-	230		575	-	230		549	-	230		554	-	230
700		553	-	230		550	-	230		573	-	230		522	-	230		538	-	230
800		553	-	230		541	-	230		564	-	230		507	-	230		504	-	230
900		551	-	230		538	-	230		569	-	230		465	-	230		499	-	230
1000		543	-	230		541	-	230		573	-	230		462	96	230		530	-	230
1100		543	-	230		537	-	230		556	-	230		446	112	230		536	-	230
1200		543	-	230		536	-	230		546	-	230		380	178	230		532	-	230
1300		544	-	230		557	-	230		543	-	230		337	221	230		528	-	230
1400		543	-	230		542	-	230		540	-	230		352	-	230		531	-	230
1500		552	-	230		547	-	230		548	-	230		415	-	230		522	-	230
1600		557	-	230		554	-	230		559	-	230		444	-	230		520	-	230
1700		571	-	230		559	-	230		551	-	230		493	-	230		483	-	230
1800		576	-	230		572	-	230		538	-	230		506	-	230		492	-	230
1900		570	-	230		567	-	230		520	-	230		498	-	230		497	-	230
2000		579	-	230		564	-	230		517	-	230		520	-	230		501	-	230
2100		586	-	230		565	-	230		521	-	230		549	-	230		510	-	230
2200		587	-	230		579	-	230		525	-	230		552	-	230		529	-	230
2300		585	-	230		583	-	230		531	-	230		563	-	230		540	-	230
2400		583	-	230		564	-	230		540	-	230		565	-	230		554	-	230

STATE OF MINNESOTA)
)ss
COUNTY OF ST. LOUIS)

AFFIDAVIT OF SERVICE VIA
ELECTRONIC FILING

SUSAN ROMANS of the City of Duluth, County of St. Louis, State of Minnesota, says that on the **12th** day of **April, 2019**, she served Minnesota Power's Response in **Docket No. E,G999/CI-19-160** on the Minnesota Public Utilities Commission and the Office of Energy Security via electronic filing. The persons on E-Docket's Official Service List for this Docket were served as requested.



Susan Romans